FRDC

ANNUAL REPORT 2020–21

Key achievements in 2020–21

- The FRDC's Research and Development Plan 2020–25 was developed and approved to guide the Corporation's future investment.
- An investment of $28.24 million was made across the research portfolio, including 80 new projects.
- The FRDC met all of the 2020–21 Portfolio Budget Statement's performance measures.
- There was ongoing collaboration with our stakeholder reference groups to refine Fish Forever 2030, a draft vision for fishing and aquaculture which identifies 18 opportunities across the sector.
- The development of the National Fisheries Plan by the Department of Agriculture, Water and Environment was supported.
- The Indigenous Reconciliation Statement of Intent and Actions 2020–25 was approved and implementation began.
- FRDC made submissions to four Senate Inquiries.
- FRDC commenced review of internal systems, process and business approaches to improve stakeholder experience.
- Revised structures were implemented for stakeholder consultation with the Research Advisory Committees and Industry Partnership Agreements.
- The fifth edition of Status of Australian Fish Stocks (SAFS) reports was released on World Oceans Day, 8 June.
- FRDC provided strong support for the sector though the pandemic including the release of a report *Impact of COVID-19 on the Australian Seafood Industry January–June 2020*.
- Engagement and communication activities were adapted according to changed stakeholder needs due to COVID-19 pandemic.
- The development of a new research adoption strategy was initiated to increase uptake of research outcomes and industry productivity.
- Agricultural Innovation Australia, a new company targeting transformational innovation across agriculture, was formed in October 2020 through a cross research and development corporation (RDC) collaborative effort.

The FRDC acknowledge Australia's Indigenous People who are the Traditional Owners of country throughout Australia and recognises their continuing connection to land, waters and culture. We pay our respect to their Elders both past and present and extend that respect to all Indigenous People.

CONTENTS

TABLES

FIGURES

2020–21 achievements through investment

Five years at a glance

TABLE 1: INCOME

	2016–17	2017–18	2018–19	2019–20	2020–21
	$m	$m	$m	$m	$m
Total income	**37.32**	**36.00**	**39.56**	**33.03**	**32.92**
Industry contributions	6.48	7.31	7.32	6.90	7.17
Project contributions	1.70	1.73	2.86	1.53	2.11
Total government contributions	21.76	22.71	23.48	22.08[1]	23.21
Project contributions from other parties	5.63	2.02	3.42	0.82	0.19
Other income	1.75	2.23	2.48	1.70	0.24

1. Gross value of production declined during the year associated with COVID-19, which impacted on contributions.

TABLE 2: MATCHABLE INCOME

	2016–17	2017–18	2018–19	2019–20	2020–21
	$m	$m	$m	$m	$m
Maximum matchable (government) contribution[1]	7.25	7.57	7.78	7.45	7.80
Actual government matching	7.25	7.57	7.78	7.19[2]	7.59

1. Government funding and maximum matchable contribution (the maximum amount to which the Australian Government will match industry contributions) are detailed in Appendix A.
2. Gross value of production declined during the year associated with COVID-19, which impacted on contributions.

TABLE 3: FINANCIAL INDICATORS OF INVESTMENT AGAINST PROGRAMS

	2016–17	2017–18	2018–19	2019–20	2020–21
	$m	$m	$m	$m	$m
Total expenditure	**29.26**	**31.39**	**35.22**	**34.44**	**33.53**
Total of R&D projects	24.41	26.00	29.80	28.94	28.24
R&D Program 1 (Environment)	7.46	7.94	7.92	8.35	8.65
R&D Program 2 (Industry)	12.31	11.24	14.48	13.39	13.22
R&D Program 3 (Communities)	0.98	1.74	1.83	2.25	1.88
R&D Program 4 (People)	1.34	2.30	2.39	2.20	1.90
R&D Program 5 (Adaptation)	2.32	2.78	3.19	2.75	2.59
Management and accountability	4.85	5.39	5.41	5.50	5.29

TABLE 4: NEW, ACTIVE AND COMPLETED PROJECTS

	2016–17	2017–18	2018–19	2019–20	2020–21
Number of approved new projects	122	167	145	118	80
Active projects under management during the year	408	493	491	440	407
Number of final reports completed	86	85	120	124	96

The FRDC's balanced research investment approach

The FRDC aims to spread its investment in research and development (R&D) across the whole value chain of commercial fishing and aquaculture, and for the benefit of both Indigenous and recreational fishers. The FRDC's balanced investment approach ensures appropriate coverage of a blend of issues and seeks to balance short, medium and long term; high and low risk; and strategic and adaptive R&D needs. Ultimately, all FRDC investment in R&D is driven by the needs of its stakeholders.

TABLE 5: INVESTMENT AGAINST R&D PLAN 2020–25 OUTCOMES

	2020–21
	$m
Total expenditure	**33.53**
Total of R&D projects	28.24
Outcome 1: Growth for enduring prosperity	12.73
Outcome 2: Best practices and production systems	7.98
Outcome 3: A culture that is inclusive and forward thinking	1.41
Outcome 4: Fair and secure access to aquatic resources	3.00
Outcome 5: Community trust, respect and value	3.12
Communications and adoption	0.63
Corporate costs	4.66

TABLE 6: APPLIED VERSUS BASIC RESEARCH

	2016–17	2017–18	2018–19	2019–20	2020–21	2020–21
	$m	$m	$m	$m	$m	%
Applied	22.96	24.56	28.43	27.99	28.07	95.02
Basic	1.46	1.45	1.37	0.94	0.17	4.98

Applied research is a research methodology that creates practical solutions for specific problems while basic research is scientific research in domains where 'real-world' applications are not immediately apparent but is often fundamental for future research and innovation.

TABLE 7: PROJECT DURATION

Duration	Number of projects	Total investment	Average project value
		$	$
Long (36 months and over)	109	66,573,906	610,769
Medium (from 18 and 36 months)	126	45,447,155	360,691
Short (up to 18 months)	172	25,324,366	147,234
Total	**407**	**137,345,427**	**337,458**

TABLE 8: PROJECT INVESTMENT BY RISK PROFILE

	2016–17	2017–18	2018–19	2019–20	2020–21	Total
	$	$	$	$	$	%
High	2,195,940	1,514,281	1,065,692	669,685	1,174,234	5.25
Low	12,792,771	11,993,516	15,533,813	16,301,505	15,191,844	54.01
Medium	9,438,571	12,495,655	13,204,366	11,965,941	11,877,334	40.74
Total	**24,427,281**	**26,003,453**	**29,803,871**	**28,937,131**	**28,243,412**	**100.00**

Summary of industry contributions

TABLE 9: INDUSTRY CONTRIBUTIONS (NON-PROJECT) MAXIMUM MATCHABLE CONTRIBUTIONS BY THE AUSTRALIAN GOVERNMENT AND RETURN ON INVESTMENT

	A	B	C	D	E	F
Jurisdiction—by year	Maximum matchable contribution	Actual industry contributions amounts	Percentage of matchable	Distribution of FRDC spend		Return on contribution (D/B)
	[note 1]	[note 2,3]		[note 4,8]		[note 5,6]
	$	$	%	$	2020–21	5 years
Commonwealth	1,411,178	1,211,904	86.00	3,122,943	2.58	2.91
New South Wales	444,15	426,005	96.00	2,253,492	5.29	7.65
Northern Territory	188,590	212,189	113.00	1,051,964	4.96	5.43
Queensland	469,518	550,000	117.00	3,294,242	5.99	6.69
South Australia	1,025,415	895,919	87.00	3,992,702	4.46	5.21
Tasmania	2,655,298	2,166,573	80.00	9,026,122	4.26	2.88
Victoria	327,660	229,047	70.00	1,868,454	8.16	9.16
Western Australia	1,284,968	1,526,382	119.00	3,632,913	2.38	2.49
Total	**7,806,780**	**7,168,019**	**91.80**	**28,243,082**	**3.94**	**3.89**
Australian farmed prawns [note 7]	334,575	292,421	87.00	213,135	0.73	2.34

1. Maximum matchable contribution is the maximum amount that the Australian Government will match industry contributions in accordance with the criteria detailed in Appendix A.
2. Note that contribution figures are accrual based—i.e. some payments for the year may have been made but will not show in the figures at the time of publishing.
3. There are timing issues in some jurisdictions therefore matching may not occur in the year in which the invoice is raised.
4. Distribution of FRDC spend is based on the estimated flow of R&D benefits to the respective jurisdictions. It includes a deduction of prior project refunds.
5. Ratios in column F are derived from the distribution of FRDC spend (column D) for 2020–21 and the previous four years.
6. The total distribution of spend includes $190,000 (approximately) invested in the Australian Capital Territory, included in New South Wales.
7. Australian farmed prawns are also included in the jurisdictional totals above. Australian Prawn Farmers' levies are collected under the *Primary Industries Research and Development Act 1989* (PIRD Act) and the Fishing Levy Regulations. This levy is paid to FRDC by the Department of Agriculture, Water and the Environment under a special appropriation as per the PIRD Act.
8. Column D includes industry collaborative project contributions provided as co-investment to FRDC projects.

FIGURE 1: FRDC INCOME 2020–21

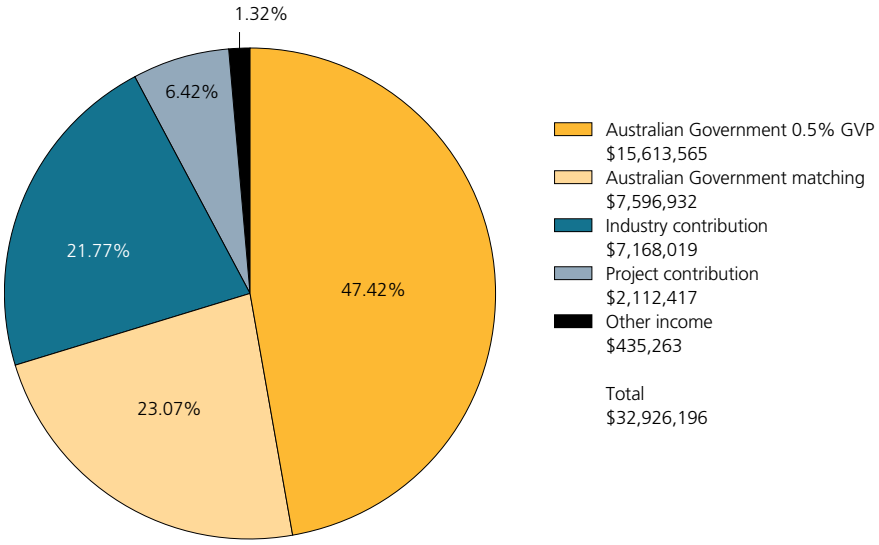
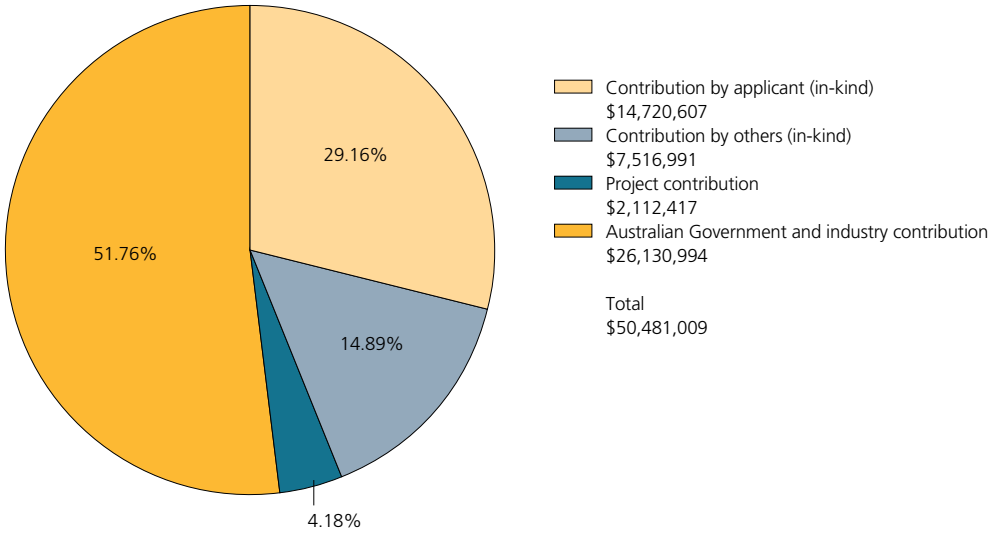


FIGURE 2: OVERALL INVESTMENT IN R&D MANAGED BY FRDC 2020–21



Australian Government
Fisheries Research and Development Corporation

18 August 2021

The Hon. David Littleproud
Minister for Agriculture and Northern Australia
Parliament House
CANBERRA ACT 2600

Dear Minister,

On behalf of the Board of the Fisheries Research and Development Corporation (FRDC), I have pleasure in presenting the Corporation's annual report for the year ended 30 June 2021.

The report has been prepared and approved by the directors in accordance with our legislative obligations under section 28 of the *Primary Industries Research and Development Act 1989* (PIRD Act); and sections 39 and 46 of the *Public Governance, Performance and Accountability Act 2013* (PGPA Act).

The report provides a clear picture of our performance against priorities and performance indicators in achieving the FRDC's planned outcomes (page 14) for you, the Minister for Finance, members of parliament, FRDC stakeholders and the Australian community.

FRDC's annual report [performance statements] is produced in accordance with s39 (1)(a) of the PGPA Act for the 2020–21 financial year. The annual report starts with the performance statement and year in review (pages 4 to 23), followed by the FRDC's operational results, services and governance (pages 25 to 111). The financial statements and the Australian National Audit Office audit of the FRDC financial statements (pages 113–148) (which returned an un-modified audit report) complete the FRDC performance statements. It is the opinion of the Board of FRDC that the statements accurately present the FRDC's performance in the reporting period and comply with s39 (2) of the PGPA Act.

This report documents inputs (income and expenditure, pages iii–iv) and, outputs from research and development against the performance measures published in the 2020–21 Portfolio Budget Statements Budget Related Paper No. 1.1, Agriculture Portfolio and the FRDC Annual Operational Plan (pages 26 and 92). The report also includes an overview and assessment of the longer-term benefit and cost of a subset of the Corporation's investment utilising the methodology developed by the rural research and development corporations (RDCs) (pages 65–79).

I take this opportunity to acknowledge the strong support of my fellow directors in guiding the FRDC towards outcomes that will benefit people in fishing and aquaculture, as well as the broader Australian community.

Yours faithfully,

J. R Williams

Mr John Williams
Chair

Fisheries Research and Development Corporation
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FRDC

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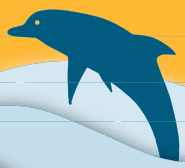
PERFORMANCE STATEMENT



Key performance indicators against 2020–21 Portfolio Budget Statement

The FRDC met all of the 2020–21 Portfolio Budget Statement's performance measures.

All financial targets were met this year. For a full explanation of budgetary variances, see page 126 in the financial statements.

Portfolio Budget Statement performance measures	Targets 2020–21	Results
Project focus on the FRDC Board's assessment of priority research and development issues.	Ninety-five per cent are a priority.	Achieved. Projects align with strategic priorities set out in FRDC's Annual Operational Plan (AOP) and partner plans.
Projects are assessed as meeting highest standards and peer review requirements for improvements in performance and likely adoption.	Ninety-five per cent are a high priority.	Achieved.
Submit planning and reporting documents in accordance with legislative and Australian Government requirements and time frames.	One hundred per cent met Government requirements.	Achieved. All documents submitted in accordance with requirements.
Implement best practice governance arrangements to promote transparency, good business performance and unqualified audits.	Achieve unqualified audit result.	Achieved. See audit report pages 114–115.
Demonstrate the benefits of R&D investments by positive benefit cost analysis results.	Benefit analysis undertaken on one investment area.	Achieved. Average benefit cost analysis results, see pages 65–79.

THE YEAR IN REVIEW

Following is a summary of key issues affecting the FRDC's performance along with key activities from the past year.

Re-appointment of FRDC Chair and appointment of Presiding Member

The Hon. David Littleproud MP, Minister for Agriculture and Northern Australia*, under subsection 17(1) of the PIRD Act, re-appointed Mr John Williams as the Chairperson of the FRDC from 10 March 2021 to 9 March 2024.

* The Hon. David Littleproud MP was Minister for Agriculture, Drought and Emergency Management until he was appointed as Minister for Agriculture and Northern Australia on 2 July 2021. He will be referred to as such throughout this report.

Ms Lindy Hyam was appointed as the Presiding Member of the FRDC Board Selection Committee in February 2021. The appointment was made under section 122 of the PIRD Act. This is a part-time appointment for three years. The selection process for new FRDC directors commenced at this time.

See Appendix F (page 161) for further information on the process to 30 June 2021.

Pandemic and risk management

The June 2021 Comcover Risk Management Report demonstrated that FRDC has an "advanced" approach to risk. Out of 156 Commonwealth Government organisations that were assessed the FRDC was in the top nine. In the last 12–19 months since the pandemic started the FRDC has taken a transparent and agile approach to risk. Key activities include:

- implemented the FRDC's 'Disaster Recovery Policy and Procedure',
- established the FRDC Pandemic Working Group, which initially met twice a week,
- information and communications technology (ICT) team increased FRDC's cyber security posture to counter the growing threat level targeting the change in working environments,
- Communications team
  - issued frequent advisory notes to stakeholders on FRDC's website,
  - published extra 'COVID' editions of *FISH* magazine,
  - implemented the weekly "Message in a bottle" newsletter (now fortnightly) to provide resources, support and greater engagement for stakeholders.
- the Research Development and Investment team adapted to online consultation and meetings, including managing a road-mapping process in collaboration with the industry to guide implementation of the new R&D Plan,
- data was collected to understand impact of COVID-19 on Australia's seafood sector and inform future adaptation responses—the report has been published (see www.frdc.com.au),
- the Business team developed the new stress-testing capability to trial different risk scenarios on the FRDC's budget,
- the FRDC Pandemic Working Group changed its focus to become the FRDC Wellbeing Working Group to ensure mental health and a positive workplace culture,
- the FRDC Board provided guidance to the organisation on staying focused by remaining relevant and visible to stakeholders and establishing new ways of engagement (switching face-to-face meetings to virtual) and setting up monthly key stakeholder updates and online Board meetings.

Financial performance

In June last year, the FRDC was predicting a 14 per cent decline in the gross value of production (GVP) for 2020–21. This was anticipated to impact on the average gross value of production (AGVP) and therefore FRDC's income for this financial year. The commercial sector has had a 4 per cent decline in this financial year. The key results are:

- GVP for 2020–21 was $3.01 billion, down from $3.147 billion in 2019–20, a drop of 4.3 per cent.
- FRDC's government revenue was $1.4 million over the conservative 2020–21 AOP target.
- FRDC's income from other investors increased to $2 million, an ongoing demonstration by stakeholders that FRDC is relevant to their needs and is a good place to invest (e.g. Australian Maritime Safety Authority, NSW Department of Primary Industries, Department of Agriculture, Water and the Environment [DAWE]).
- FRDC met its eligible expenditure target for 2020–21 (determined as $31.12 million).
- Research and development expenditure met the AOP forecast for 2020–21 of $27.6 million.
- Communication costs were lower than forecast (a saving of $150,000).
- Corporate costs were lower than forecast (a saving of $108,000).
- FRDC achieved an unmodified audit from the Australian National Audit Office.

Statutory Funding Agreement

The 10-year FRDC Statutory Funding Agreement was signed by the Minister for Agriculture, Drought and Emergency Management (now Minister for Agriculture and Northern Australia) on 5 April 2020. Individual funding agreements with research and development corporations (RDCs) outline what is expected of them. This includes expectations of performance and transparency, as well as accountability to levy payers, the government and the public.

The performance principles are:

- to engage stakeholders to identify R&D priorities and activities that provide benefits to industry,
- to ensure R&D (and marketing) priorities are strategic activities, collaborative and targeted to improve profitability, productivity, competitiveness and preparedness for future opportunities and challenges through a balanced portfolio,
- to undertake strategic and sustained cross-industry and cross-sectoral collaboration that addresses shared challenges and draws on the experience from other sectors,
- for governance arrangements and practices to fulfil legislative requirements and align with contemporary Australian best practice for open, transparent and proper use and management of funds,
- to demonstrate positive outcomes and delivery of R&D (and marketing) benefits to levy payers and the Australian community in general and show continuous improvement in governance and administrative efficiency.

FRDC staff and workforce changes

A number of pivotal staff changes took place at the FRDC over the year. John Wilson, General Manager, Business retired after 23 years with the Corporation. Peter Horvat left the FRDC after 17 years as General Manager Communications.

Implementation of the first year of the FRDC's Workforce Plan also resulted in the following:

- creation of a new Strategy and Innovation team led by Matt Barwick,
- appointment of Jamie Allnutt to the newly established Transformational Extension and Adoption position, and commencement of stakeholder consultation on how best to implement a new extension approach,
- restructure of the Business team led by Cheryl Cole,
- restructure of the Information and Communications Technology (ICT) and Digitisation team led by Kyaw Kyaw Soe Hlaing.

The FRDC's new Research and Development Plan 2020–25

On 18 June 2020, the Assistant Minister Jonathon Duniam approved the FRDC's Research and Development (R&D) Plan 2020–25.

The FRDC's R&D Plan forms a central part of the strategic planning process that drives organisational focus and impact. It was informed by a series of reviews, research and extensive consultation. Consultation focused around scenario planning, which can be helpful when planning in an uncertain environment.

The new plan responds to a shared vision for fishing and aquaculture, and aims to deliver impact in five outcome areas, facilitated through implementation of five cross-cutting enabling strategies. The FRDC's R&D Plan is ambitious, aiming to push boundaries and drive experimentation on new ways to take fishing and aquaculture into the future. The plan aligns with key national targets and global commitments including, the shared industry and Australian Government target of building agriculture to $100 billion by 2030, and the United Nations Sustainable Development Goals (SDGs).

During 2020–21 the FRDC has implemented the first year of the R&D Plan, using its investment capability to drive the five outcomes described by the plan, guided by its AOP developed with input from across fishing and aquaculture.

An increasing end-user focus and greater emphasis on collaboration with external partners have both been central to progress over the first year of the plan. This has involved updating FRDC's communications outputs to reflect the FRDC's new focus, to make them more intuitive and user-friendly, and explain the Corporation's business model more clearly. This ambition has also been reflected in the 2021–22 AOP as a digital platform to engage and inform stakeholders.

A shared vision for the future of fishing and aquaculture

The FRDC continues to promote collaboration among stakeholders from across fishing and aquaculture to refine a shared vision for fishing and aquaculture by 2030, and opportunities that if seized, would help that vision become a reality. Work undertaken in partnership with the FRDC's representative organisations enabled refinement of a draft document entitled Fish Forever 2030, a vision statement which identifies 18 opportunities across fishing and aquaculture. This has also assisted DAWE in developing the National Fisheries Plan, which seeks to provide a blueprint for the growth of fishing and aquaculture in Australia.

Improved consultative structures and priority setting

Throughout the year, the FRDC's focus has been on delivering its core business: planning, investing in, and managing research and development for fishing and aquaculture, and the wider community, and ensuring that the resulting knowledge and innovation is adopted for impact. The FRDC continued to engage and communicate with stakeholders using formal consultative structures (representative organisations, Research Advisory Committees (RACs), Industry Partnership Agreements (IPAs), and its subprograms).

The FRDC has revamped its RACs to make them better fit for the purpose of engaging with stakeholders across fishing and aquaculture in each jurisdiction. This is to enable identification of priorities and promoting adoption of R&D aligning to shared strategic outcomes.

The FRDC's RACs and IPAs:

- act as the lead mechanism to identify, synthesise and aggregate priorities articulated by stakeholders,
- consider avenues for delivery of R&D outputs to end users through identification of suitable extension activities,
- assist in monitoring investment activities to aid in the delivery of outputs to end user

While there are still eight RACs—one for each fisheries jurisdiction including the Commonwealth—the FRDC has halved the number of chairs that oversee them, with each chair now overseeing two RACs. This is to help encourage cross-pollination of ideas between jurisdictions and aid collaboration.

IPAs allow major sectors to manage a suite of sectoral projects over a specified time period addressing priorities identified within a tailored strategic plan, that is specific to its needs.

The FRDC also uses subprograms to better manage groups of projects related to a particular R&D outcome. Subprograms are established on the FRDC's initiative or at the request of a stakeholder group. Over the past year, the FRDC coordinated four subprograms—Aquatic Animal Health and Biosecurity, Indigenous Fishing, Recfishing Research and Human Dimensions Research.

Improving internal processes

In the last quarter of 2020, taking the opportunity afforded by the COVID-related disruptions, the FRDC explored changes to its business model. Nearly half of the FRDC's staff were seconded to work on an 'agile' management and delivery project, stepping away from their regular duties. This group experimented with more flexible ways of working, incorporating more iterative approaches to problem solving.

As a result, incremental changes in 2020–21 included new research application formats and a refreshed FishNet research application portal. The FRDC anticipates that further exploration and adoption of the principles of agile project management will be used to streamline aspects of its business and optimise value for stakeholders.

Key changes underway:

- new research application processes and form,
- revised FishNet research application portal,
- new website development with user experience at its centre,
- revised project management system,
- experiments to better deliver extension and adoption,
- improved situational awareness using intelligence systems.

New Indigenous Statement of Intent

This year a new Indigenous Policy and Indigenous Reconciliation Statement of Intent and Actions 2020–25 was approved by the Board and commenced implementation. A key action arising from this development is a new memorandum of understanding (MOU) being signed between the Indigenous Reference Group (IRG) and the Indigenous Land and Sea Corporation (ILSC).

The Indigenous Statement of Intent was developed in recognition of the continued tenure and connection that Aboriginal and Torres Strait Islander people have with their traditional lands and waters. This action formalises the FRDC's aspirations and outlines a range of activities to pursue those aspirations.

A decade ago, the FRDC set up the IRG to help advise the FRDC in its investments in relation to Indigenous fishing and aquaculture. While the IRG will continue its advisory role, the Statement of Intent embeds these aspirations within both the internal culture of the FRDC and the R&D activities it funds across its entire portfolio.

As well as directly funding research activities, the FRDC will seek to act as a conduit which includes linking with organisations seeking to do similar work, such as the ILSC, CSIRO, DAWE and various state government agencies.

The FRDC will:

- acknowledge the special relationship that Aboriginal and Torres Strait Islander people have with their traditional lands and waters,
- value the experiences, knowledge, perspectives and cultures of Aboriginal and Torres Strait Islander peoples, including in a formal sense within projects where appropriate, and protect these as we would any other intellectual property elements,
- consistently seek to demonstrate informed respect for Indigenous Australians and work with our partners to achieve the same in developing R&D projects and realising their outcomes,
- incorporate Indigenous knowledge where relevant into research projects and delivery of outcomes.

Submissions to inquiries and reviews

During the year, the FRDC made submissions to a range of inquiries and reviews. They included:

- Senate Inquiry—The fisheries quota system,
- Senate Inquiry—Impact of seismic testing on fisheries and the marine environment,
- Senate Inquiry—Australian aquaculture,
- Tasmanian Legislative Council Inquiry—Finfish aquaculture.

Senate Inquiry—The fisheries quota system

The FRDC lodged a submission on 12 March 2021 for consideration by the Senate Standing Committees on Rural and Regional Affairs and Transport specifically addressing the fisheries quota system and whether the current 'managed microeconomic system' established around a set of Individual Transferable Quotas (ITQs) results in good fishing practice.

The terms of reference were:

- good fishing practice that is ecologically sustainable with an economic dynamic that produces good community outcomes,
- how the current quota system affects community fishers,
- whether the current system disempowers small fishers and benefits large interest groups,
- the enforceability of ecological value on the current system, and the current system's relationship to the health of the fisheries,
- whether the current system results in good fishing practice that is ecologically sustainable and economically dynamic, and produces good community outcomes,
- any other related matters.

The FRDC focused its responses on the science that informs ITQs.

Senate Inquiry—The impact of seismic testing on fisheries and the marine environment

Concerns over the potential impacts of seismic testing on the marine environment prompted the Senate to call for an inquiry into the "Impact of Seismic Testing on Fisheries and the Marine Environment" in September 2019.

The terms of reference were:

- the body of science and research into the use of seismic testing,
- the regulation of seismic testing in both Commonwealth and state waters,
- the approach taken to seismic testing internationally,
- any other related matters.

FRDC's submission focused on its R&D investment in Australia's fisheries and aquaculture sectors as well as Australian marine resources and their interactions with the Australian petroleum industry. Other submissions were also provided from a range of seafood industry organisations, research institutions and government bodies. FRDC's submission was tabled on 10 June 2021.

Senate Inquiry—Australian aquaculture

Australian aquaculture has experienced steady growth since 2002, yet its annual worth has plateaued at just over $1 billion in recent years. An inquiry into the Australian aquaculture sector by the House Agriculture and Water Resources Committee was established to find out why.

On 1 April 2021, the Committee commenced the inquiry to investigate:

- the nature and current status of Australia's aquaculture sector,
- opportunities and barriers to the expansion of the aquaculture sector including ability to access capital and investment,
- opportunities to streamline and increase the effectiveness of the current regulatory frameworks that govern aquaculture activities in Australia,
- the ability for businesses to access and commercialise new innovations to expand aquaculture.

The FRDC provided a submission to the Federal parliamentary inquiry.

Tasmanian Legislative Council Inquiry—Finfish aquaculture

The FRDC provided a submission to the Tasmanian Legislative Council Inquiry into finfish farming in Tasmania which was one of 224 submissions submitted. Due to the operational strictures placed on the Legislative Council Sessional Committee Government Administration A Sub-Committee resulting from the COVID-19 pandemic, this inquiry was postponed, but resumed its hearing in October and November 2020. An interim report is available (https://www.parliament.tas.gov.au/ctee/council/Reports/gaa.inq.FIN.rep.200409.INTERIMREPORTFIN.%20jm.004.pdf).

Lessons from COVID-19 for the seafood industry

A report funded by the FRDC has analysed how COVID-19 affected the seafood industry in Australia from January to June 2020, with the aim of using this knowledge to prepare the sector for future shocks.

Conducted by the Institute for Marine and Antarctic Studies, the study found that the overall impacts of COVID-19 have not been uniform, with some sectors supplying domestic retail markets mostly being able to prosper, while producers selling into export markets and the domestic dine-in food service sector have often been severely impacted.

The report provides valuable insights that will help the industry tackle future shocks. It aims to gain a broad understanding of the immediate economic impacts to the industry from the early phases of the COVID-19 pandemic.

While not comprehensively surveying all sectors within the industry, this initial study represents an important first step to futureproofing. For the FRDC, this report will provide a reference point for further impact analysis to help identify future research needed to improve early warning systems and diagnostic capacity of the seafood industry, should future shocks or disruptions occur.

The report *Impact of COVID-19 on the Australian Seafood Industry January–June 2020* is a product of FRDC project 2016-128: Human Dimensions Research subprogram management.

Status of Australian Fish Stocks reports

The fifth edition of the Status of Australian Fish Stocks (SAFS) reports was released on 8 June 2021 (World Oceans Day). This (2020) edition assessed 477 stocks from 148 species (or species complexes), adding 71 stocks and 25 species to the previous (2018) reports. The SAFS 2020 classification framework and stock statuses are consistent with those used in the 2018 edition, and the table below compares status counts and percentages between both editions. SAFS provide a unique resource in Australian fisheries science by enabling consistent, transparent reporting across jurisdictions.

SAFS status	2018	2018	2020	2020
	Count	%	Count	%
Sustainable	254	62.56	302	63.31
Undefined	54	13.30	70	14.68
Negligible	28	6.90	36	7.55
Depleted	29	7.14	36	7.55
Depleting	23	5.67	17	3.56
Recovering	18	4.43	16	3.35
Total	**406**	**100.00**	**477**	**100.00**

New extension approach

FRDC has identified a need to improve extension (*) and adoption of R&D. As the first step a new staff member was appointed in 2021 to lead a program of work around extension and adoption and transformative change consistent with the FRDC's R&D Plan 2020–25.

During 2022, the FRDC will implement a range of initiatives to improve extension and adoption including:

- developing a fishing and aquaculture extension practitioner national network,
- applying impact planning principles to its investments to drive effective extension,
- providing strategic extension support to high impact projects,
- increasing extension expertise in the fishing and aquaculture sectors working with partners.

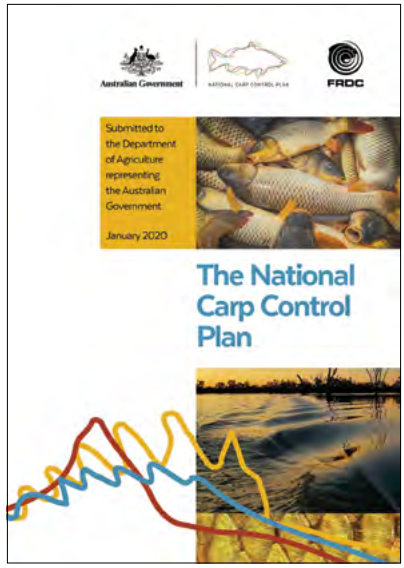
The FRDC is continually improving its investment processes to ensure that end users of R&D are involved or considered in project design and implementation to increase adoption outcomes.

* Extension has a range of different interpretations. In this case it is defined as enabling change or adoption through the use of research and development knowledge.

National Carp Control Plan

Over the past five years, DAWE and the FRDC have invested in a world-first program to assess the feasibility of using Cyprinid herpesvirus 3 (the carp virus) as a biological control agent for introduced common carp in Australia, as part of the National Carp Control Plan (NCCP). In January 2020, the FRDC delivered the NCCP for consideration by government. At that time, it was agreed that a small number of additional recommended research projects be undertaken, which would significantly increase confidence in the final assessment. This assessment will be delivered at the end of 2021.

The NCCP forms one of several important inputs that will inform a decision by the Australian, state and territory governments on the carp virus. A final decision on carp biocontrol will require further public consultation and regulatory approval.



Stakeholder support

Continued support from the Australian Government and stakeholders across the commercial, recreational and Indigenous sectors has been welcomed by the Board over the last 12 months. Government and industry engagement play a vital role in ensuring high-quality research priorities are identified and turned into outcomes.

In a very difficult year impacted by COVID-19 and continuing disruptions to trade, the various sectors have shown amazing resilience and ability to adapt. The FRDC is grateful to those across all sectors and governments who have worked to ensure Australia continues to have fishing and aquaculture communities using healthy, sustainable and productive aquatic habitats.

The Board thanks its four representative organisations for their continued strong collaboration. The FRDC also depends on the contributions of many other bodies and agencies for its success, including:

- peak and representative bodies (from all sectors),
- Commonwealth, state and territory fisheries management and research agencies,
- Research Advisory Committees,
- FRDC subprogram and coordination leaders and their committees,
- the many researchers who work on FRDC projects,
- the numerous other interested people and seafood consumers the FRDC engages with.

The dedication and passion of FRDC staff is critical to the FRDC's ongoing success for which the Board is very grateful. The Board welcomes feedback and invites you to contact any director and let them know your thoughts after reading this annual report.

Significant events after 30 June 2021

Nil.

The Corporation

FRDC is a statutory corporation within the Australian Government's Agriculture portfolio and is accountable to the Parliament of Australia through the Minister for Agriculture and Northern Australia. Revenue for R&D investment is based on a co-funding model between the Australian Government and the commercial fishing and aquaculture industries.

The FRDC 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 the *Public Governance, Performance and Accountability Act 2013* (PGPA Act).

2030 vision

The FRDC will invest to pursue the shared vision of Australia's fishing and aquaculture sectors of building collaborative, vibrant fishing and aquaculture, creating diverse benefits from aquatic resources, and celebrated by the community.

FRDC corporate outcome

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

FRDC mission

The FRDC's mission is to act as a national thought leader, facilitating knowledge creation, collaboration and innovation to shape the future of fishing and aquaculture in Australia, for the benefit of the Australian people.

FRDC role

To plan, invest in and manage research and development for fishing and aquaculture, and the wider community, and ensure that the resulting knowledge and innovation is adopted for impact.

Reporting

Progress against the AOP and R&D Plan will be measured against a Monitoring and Evaluation Framework that sets out how progress will be evaluated using metrics that are appropriate, timely and provide an accurate picture of the impact of the FRDC's investment. The framework aligns reporting and evaluation with the FRDC's statutory obligations, and international obligations such as the Sustainable Development Goals.

Responsible ministers

The portfolio Minister for Agriculture and Northern Australia, the Hon. David Littleproud MP and the Assistant Minister for Forestry and Fisheries, Senator the Hon. Jonathon Duniam.

Stakeholders

The FRDC works with a diverse and geographically dispersed collective of stakeholders that share a connection and interest in fishing and aquaculture.

Representative organisations

The FRDC has four ministerially declared representative organisations.

- 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),
- National Aquaculture Council (representing the aquaculture industry),
- Seafood Industry Australia (representing the seafood industry).

The FRDC also involves the Indigenous Reference Group and the Australian Recreational Fishing Foundation in all representational organisation activities.

More broadly the FRDC works with members of commercial wild catch, aquaculture, recreational, Indigenous and post-harvest sectors, fisheries managers, researchers, non-government organisations and the Australian community.

FRDC Funding Agreement

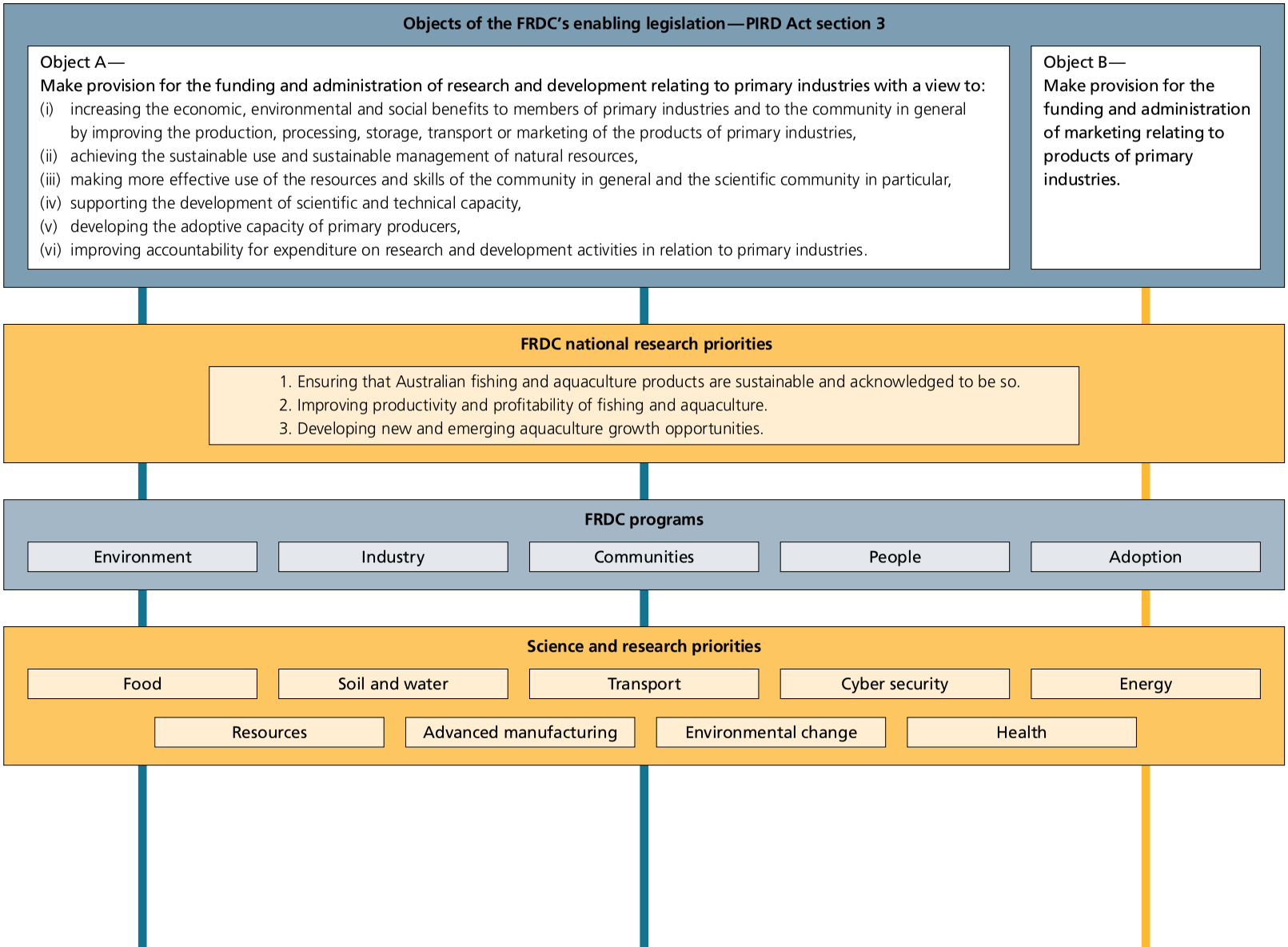
Australia's rural RDCs are the way that primary producers and government co-invest in R&D for both industry and community benefits. These partnerships are reflected in joint funding and input into the RDC's priorities and planning processes.

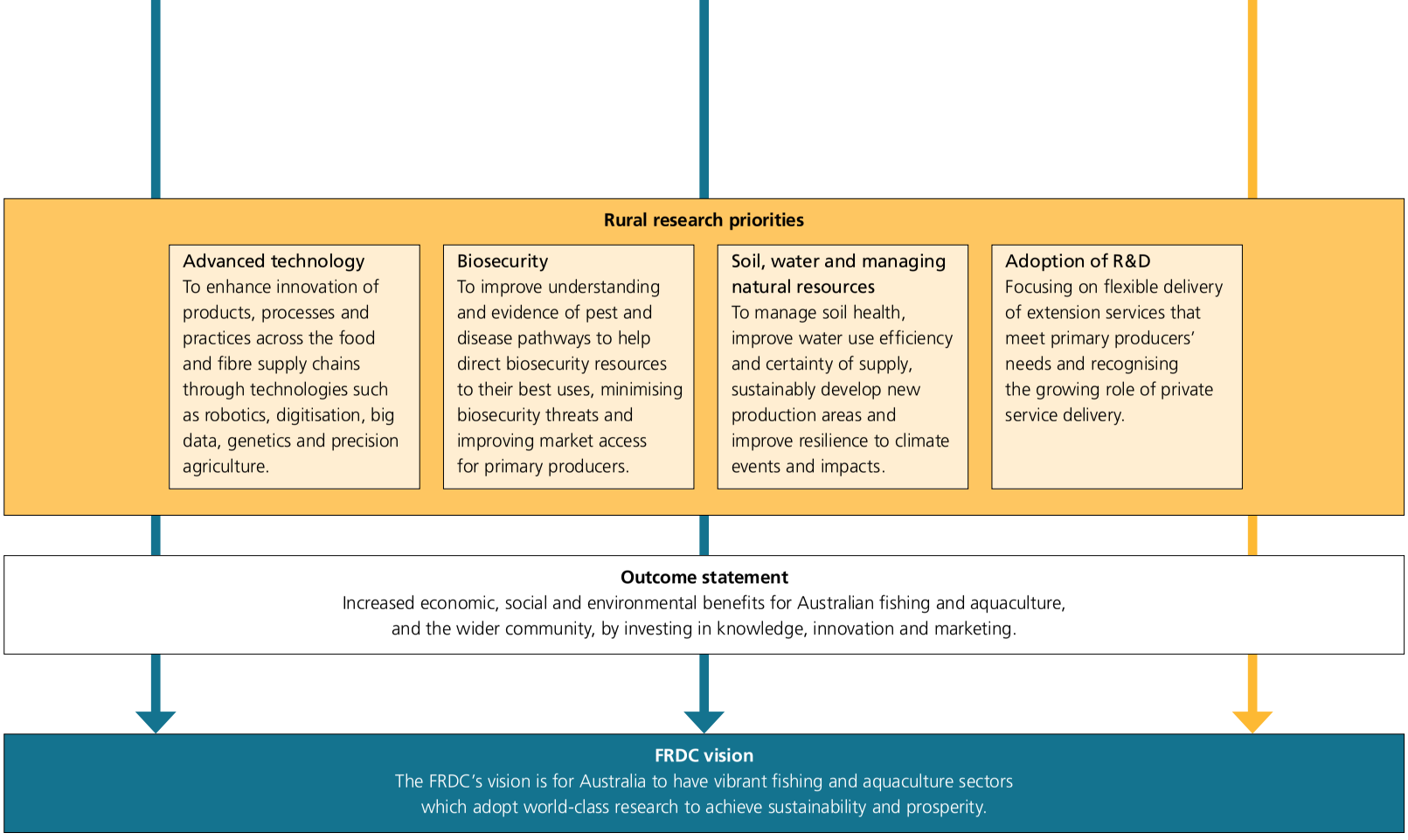
The Australian Government has previously entered into agreements with the RDCs which are industry-owned companies as a means to define and govern aspects of their relationship. The Parliament of Australia has legislated to require similar negotiated agreements between the Australian Government and the 15 statutory RDCs.

The Funding Agreement established under the PIRD Act requires establishment of necessary accounting systems, procedures and controls in accordance with the PGPA Act and the Funding Agreement, including a cost allocation policy. The FRDC's Cost Allocation Policy sets how to allocate direct and indirect costs across the FRDC's R&D and marketing programs. The Policy is available from the website—https://www.frdc.com.au/about/corporate-documents/funding-agreement .

Review of the performance of all RDCs is important to ensure accountability and help foster a culture of continuous improvement. The agreement between the Australian Government and the FRDC establishes a framework for periodic, independent reviews.

FIGURE 3: THE FRDC'S FRAMEWORK FOR INTEGRATING LEGISLATIVE, GOVERNMENT AND INDUSTRY PRIORITIES




Rural research priorities
Advanced technology
To enhance innovation of products, processes and practices across the food and fibre supply chains through technologies such as robotics, digitisation, big data, genetics and precision agriculture.
Biosecurity
To improve understanding and evidence of pest and disease pathways to help direct biosecurity resources to their best uses, minimising biosecurity threats and improving market access for primary producers.
Soil, water and managing natural resources
To manage soil health, improve water use efficiency and certainty of supply, sustainably develop new production areas and improve resilience to climate events and impacts.
Adoption of R&D
Focusing on flexible delivery of extension services that meet primary producers' needs and recognising the growing role of private service delivery.
Outcome statement
Increased economic, social and environmental benefits for Australian fishing and aquaculture, and the wider community, by investing in knowledge, innovation and marketing.
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.

Investment strategy—a balanced research investment approach

The FRDC aims to spread its investment in R&D across the whole value chain of the commercial fishing and aquaculture industry, with benefits also extending to both Indigenous and recreational fishers.

In line with the R&D Plan 2020–25 and requirements of its Statutory Funding Agreement, the FRDC will invest in:

- a balanced portfolio of projects (type, length and risk),
- outputs (project milestone and report),
- five outcomes and enabling strategies (investment and project delivery),
- impact (benefit cost analysis).

R&D investments are regularly assessed to ensure the FRDC maintains a balanced portfolio that meets the needs of its stakeholders, including the Australian Government and the Australian community.

The portfolio is monitored through the FRDC's project management system which is based on the key metrics above to inform future investment decisions and ensure a balance is maintained. The FRDC ensures funding applications are developed and reviewed in line with broader portfolio requirements. A breakdown of investment for the past year can be seen on page iii.

The FRDC seeks to achieve maximum leverage from its investments by providing research administration and services using a value-adding model. The FRDC provides input to research projects during their development and assessment phase in order to decide on a specific outcome which is then actively managed and monitored.

Cost allocation policy

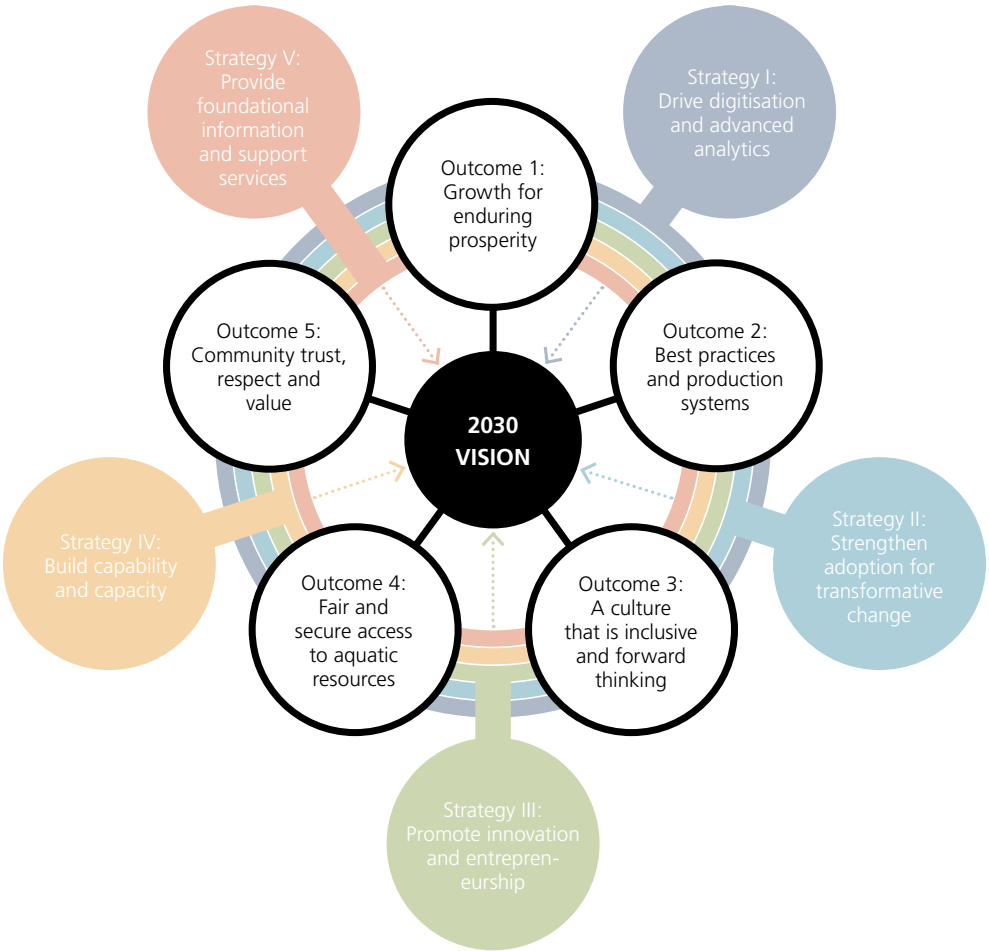
The Board, as the accountable authority, is required by the PGPA Act to establish and maintain systems of risk and control to create an operating environment that promotes the proper use and management of public resources, in pursuit of both the public good and the purposes of the entity for which it is responsible.

Strategic planning

Two key documents drive the FRDC's strategy, operations and investment. These are the FRDC's Research and Development Plan 2020–25 (R&D Plan) and its Annual Operational Plan (AOP). Both documents aim to work together to guide pursuit of a vision by 2030 of achieving collaborative, vibrant fishing and aquaculture, creating 'Fish Forever: Diverse benefits from aquatic resources, and celebrated by the community'.

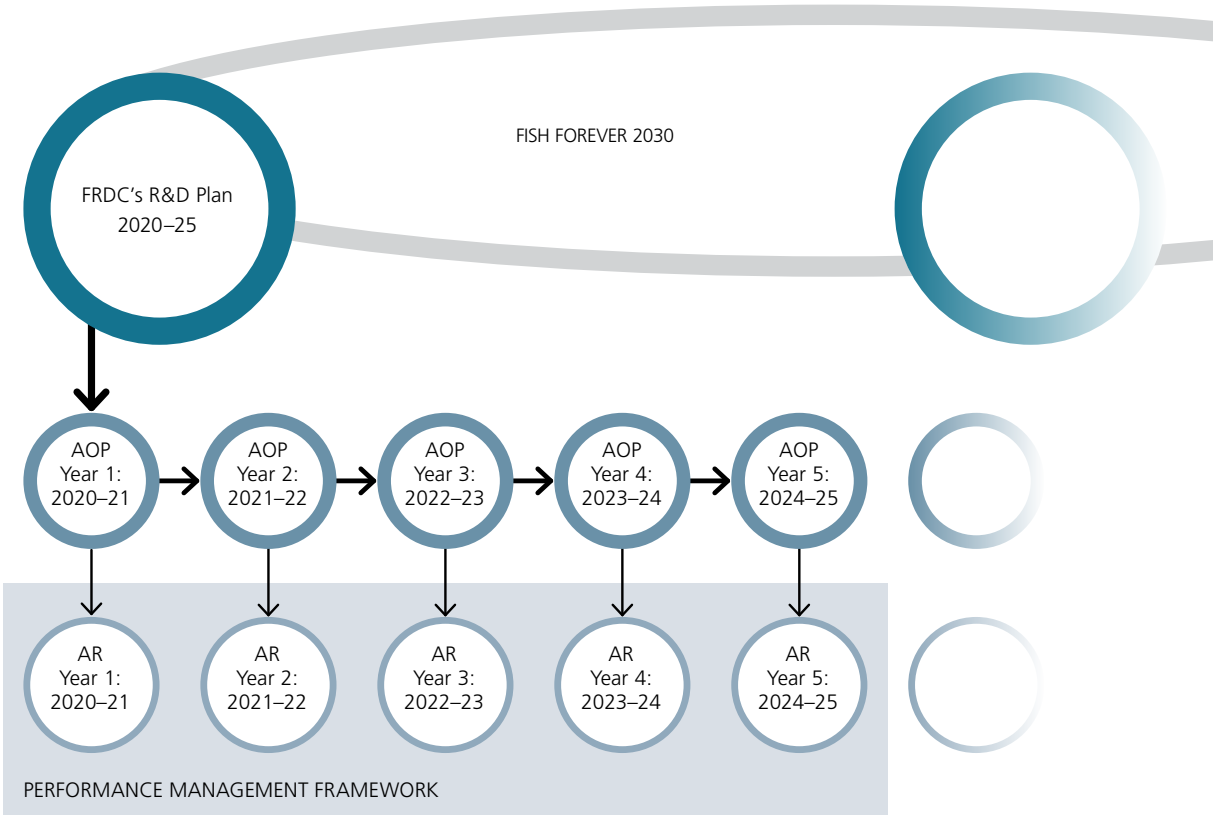
Entering the second year of the R&D Plan

The FRDC's strategic focus is articulated within its R&D Plan, which is updated every five years. The 2021–22 financial year marks the second year under the current R&D Plan, which was developed through a comprehensive process of environmental scanning, consultation and analysis. The R&D Plan 2020–25 presents a change in approach, seeking to contribute to a shared strategic vision for fishing and aquaculture in 2030, developed by all sectors.



The R&D Plan focuses on five R&D outcomes, supported by enabling strategies that build capability and provide foundational support to the delivery of the outcome. The plan considers key national initiatives such as the National Marine Science Plan, the Government's target to grow Australian agriculture to $100 billion by 2030 and a draft shared vision for all sectors of fishing and aquaculture entitled 'Fish Forever: A shared 2030 vision for Australia's fishing and aquaculture community'. It also recognises key international plans and obligations such as the Sustainable Development Goals.

Each year, FRDC's investment is guided by an AOP, which seeks to give effect to the current R&D Plan, detailing income, expenditure and planned investments for the coming year. The 2021–22 AOP will be the second of five to drive investment under the R&D Plan.



AOP: Annual Operational Plan
AR: Annual report

The FRDC's approach to investment during 2021–22 will continue to manage distribution of investment to tackle issues of national importance, while at the same time ensuring that jurisdictional and sectoral needs are met. Planning and operations will also ensure alignment with the FRDC's Statutory Funding Agreement, delivering balanced investment across time scales, risk appetite, and strategic/adaptive posture.

Investment during 2021–22 will deliver a strong focus on: capacity building; diversifying trade options; optimising production; understanding and shaping beliefs and behaviours; enhancing digital infrastructure and data inter-operability; improving collection and reporting of foundational information to inform decision-making; increasing adoption of circular economy principles; understanding and contrasting sector values; driving innovation; increasing adoption; and nurturing strategic relationships to help deliver improved impact based on shared principles and values.

The FRDC is working hard to deliver more value to our stakeholders, though it should be noted that R&D investment alone will be insufficient to deliver a shared 2030 vision of building collaborative, vibrant fishing and aquaculture, creating diverse benefits from aquatic resources, and celebrated by the community. For this we will need strong collaboration across all sectors, creativity and leadership from sectors, researchers and managers, and effective partnerships with others who have aligned interests.

Relationships with stakeholders

The FRDC works with diverse and geographically dispersed groups who operate or interact with fishing and aquaculture stakeholders. Some of these relationships are driven by a shared vision of working to address issues of concern, with some reinforced through mandate or legislation.

To meet and deliver on these needs the FRDC Board and staff normally visit locations where they can engage directly with those involved in fishing and aquaculture and see issues first hand. While the COVID-19 pandemic has made this more difficult, the FRDC Board has visited several locations in the last six months and also used online meetings to engage with our stakeholders.

FRDC is committed through formal policy to:

- treat stakeholders courteously and professionally,
- provide them with quality service,
- respond to written enquiries within 10 working days of receipt by the FRDC,
- return telephone calls by the close of business on the following day at the latest, and provide information that is current and accurate.

Research Advisory Committees

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 effective planning and investment processes.

In 2021, the FRDC reorganised its RACs in line with the organisation's long-term goals. In the future, the RACs will focus on setting priorities rather than assessing applications. However, committee members will still be able to review applications as part of a separate process. This is expected to reduce any conflict of interest that might arise.

Each RAC Chair will now oversee two RACs allowing improved linkages between jurisdictions and enables the use of any interconnections that might exist. RAC membership has also been expanded to include representatives of industry or sectors to focus on the end-users of research.

The RAC Chairs at the end of 2020–21 were as follows.

Commonwealth and Northern Territory	Cathy Dichmont
New South Wales and Queensland	James Findlay
South Australia and Western Australia	Brett McCallum
Tasmania and Victoria	Heidi Mumme

For further information on the RACs—www.frdc.com.au

Industry Partnership Agreements

The FRDC has continued its close relationship with seafood industry sectors. Industry Partnership Agreements (IPAs) are a key part of the FRDC's business because they provide individual sectors with greater certainty for long-term investment against their R&D plans. Like the RACs, the IPAs play an important role in setting research priorities.

Each IPA develops a R&D plan containing its specific priorities, from which it determines the focus of calls for applications. These strategic plans for the IPAs can be found on their individual webpages at frdc.com.au/Partners/Industry-Partnership-Agreements. The R&D plans and priorities form the basis of investment for the coming financial year. During the year the FRDC has IPAs with the following organisations.

Industry partner	Industry contact
Abalone Council of Australia	Dean Lisson
Australian Abalone Growers Association	Nick Savva
Australian Barramundi Farmers Association	Jo-Anne Ruscoe
Australian Council of Prawn Fisheries	Rachel King
Australian Prawn Farmers Association	Kim Hooper
Australian Southern Bluefin Tuna Industry Association	Brian Jeffries
Oysters Australia	Sue Grau
Pearl Consortium	David Mills
Southern Ocean	Martin Exel
Southern Rocklobster Limited	Tom Cosentino
Tamanian Salmonid Growers Association Ltd	Jen Fry
Western Rocklobster Council Inc.	Matt Taylor

Australian Government

The Minister for Agriculture and Northern Australia and the Department provide the key priorities that need to be addressed from an Australian Government perspective. The Department acts as the routine policy intermediary between the offices of the Minister, Assistant Minister and the FRDC.

Australian Fisheries Management Forum

The Australian Fisheries Management Forum (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 key to optimising management outcomes. It continues to work with AFMF, participating as an invited representative to its meetings, providing advice and ensuring AFMF priorities are incorporated into planning and prioritisation processes.

Rural research and development corporations

The FRDC continues to partner with other RDCs on a range of activities to enhance joint strategic outcomes. The FRDC attends meetings of the Council of Rural Research and Development Corporations (CRRDC), as well as meetings of executive directors, business managers and communications managers. It continues to be an active member of these groups driving several key areas in particular the CRRDC's evaluation program.

Research partners

Investment in R&D activities and initiatives to promote adoption remain 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, the FRDC will have well over 400 active projects under management.

R&D OPERATIONAL RESULTS

How to read the FRDC's R&D operational results

The R&D Plan focuses on five R&D outcomes, supported by enabling strategies that make pursuit of those outcomes faster, and easier.

This section of the annual report details investments and outputs against each of the five outcomes, as set out in the FRDC's AOP, as well as provides an indication of relevance to enabling strategies where appropriate.

Key to investments and activities

ENABLING STRATEGIES

	Enabling strategy I: Drive digitisation and advanced analytics
	Enabling strategy II: Strengthen adoption for transformative change
	Enabling strategy III: Promote innovation and entrepreneurship
	Enabling strategy IV: Build capability and capacity
	Enabling strategy V: Provide foundational information and support services

PROGRESS

	Delivered early
	Delivered
	Not delivered: In progress and on track
	Not delivered: Some delays or issues, but not high risk

OUTCOME 1:
Growth for enduring prosperity

Enduring and balanced ecological, social and economic growth for the community benefit

THIS OUTCOME ALIGNS WITH THE FOLLOWING UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS (SDGs):

As the world's population grows, so must the range of benefits that come from Australia's aquatic resources. If managed sustainably, fishing and aquaculture can assist growth and diversification, helping Australia achieve its target of growing agriculture to $100 billion by 2030.

Confidence from economic security promotes innovation and new perspectives that will deliver benefits for the wider community. An awareness that prosperity and sustainability are mutually supporting concepts is central to FRDC's R&D Plan.

Unfortunately, Australia's aquatic ecosystems are under pressure from a variety of activities and influences. Fishing and aquaculture can affect natural systems, yet improved and better-informed management has seen fewer unwanted incidents.

Other threats to ecosystems are now better understood. Examples are increased water use, exploration and extraction of minerals and petroleum, climate change, runoff, habitat removal and degradation from urban and agricultural areas, larger amounts of plastics and their impact as well as greater levels of vessel traffic and associated port infrastructure. These pressures can compromise the productivity of Australia's aquatic systems and fisheries.

Reporting in relation to the EPBC Act

Section 516A of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) requires annual reports for Commonwealth entities to report against the criteria set out in this section of the Act. The section requires the FRDC to outline how it impacts on the environment through its activities. FRDC's annual report covers its two primary functions—its internal operations and footprint, and the external projects it funds. Outcome 1 outlines FRDC's outcomes and activities relevant to this reporting requirement.

Energy efficiency

The Commonwealth Government has established energy efficiency targets in its document *Energy Efficiency in Government Operations Policy* which seek to improve energy efficiency in relation to vehicles, equipment and building design.

The FRDC adheres to this policy. It is a minority tenant occupying part of an office building and does not own motor vehicles or large equipment. Prudent management of power consumption is followed within the FRDC's premises. For example, energy efficient lighting has been installed and timer switches have been placed in offices to reduce the time lights are left on.

Key focus areas

Over the life of the R&D Plan, the FRDC will explore opportunities to invest in, manage and promote adoption of R&D to:

- support a sustainable, efficient and effective increase in production, value and price,
- guide a coordinated and evidence-based strategy for growth,
- develop more effective and cost-efficient solutions for understanding and responding to biosecurity risks from a changing climate and increased global movement of goods,
- promote a circular economy to remove waste from the processing systems, keep products and materials in use and promote the repair of natural systems,
- improve understanding of, and increase community benefits from fishing and aquaculture,
- better connect Indigenous communities with fishing and aquaculture initiatives to build opportunities for economic security in regional and remote areas where desired,
- improve understanding of the cause and extent of impacts to aquatic systems and what is needed to improve them,
- build skills and networks, including the traditional knowledge, innovation and practices of Indigenous Australians to understand, restore and create healthy aquatic ecosystems,
- build partnerships to develop system-wide understanding and identify ways to maintain and get the most benefits from aquatic systems.

R&D investments 2020–21	Enabling strategy	Project activity during the year	Progress
Cultivation trials of red seaweed.		2019-144 Cultivation trials of the red seaweed *Asparagopsis armata* and *A. taxiformis*.	
Investigation of Indigenous knowledge, nutritional health and wellbeing benefits and values of seafood for supporting Indigenous fisheries development.		2019-168 Integrating indigenous fishing: Extending adoption pathways to policy and management.	
		2019-124 Shared science and Indigenous knowledge to support fisheries capacity building in the Torres Strait.	
		2019-143 Investigation of Indigenous knowledge, nutritional health and wellbeing benefits and values of seafood for supporting Indigenous fisheries development.	
Develop a strategic plan for fish habitat research and aquatic offsets for Queensland.		2019-205 Developing a strategic investment plan for fish habitat research and aquatic offsets.	
Estimating the biomass of fish stocks using novel and efficient genetic techniques.		2019-014 Can DNA from routine plankton surveys be used to measure fish spawning areas and monitor changes in pelagic ecosystems?	
		2019-016 Estimating the biomass of fish stocks using novel and efficient genetic techniques.	
		2020-065 Indicators for density and biomass of exploitable abalone—developing and applying a new approach.	
e-fish—Integrated data capture and sharing project.		2018-026 e-fish—An integrated data capture and sharing project.	
Participation in cross-RDC planning and investment to address cross-cutting issues.		FRDC partnership in Agricultural Innovation Australia, a not-for-profit, public company established to facilitate joint investment and collaboration in cross-industry agricultural issues of national importance.	

R&D outputs 2020–21	Enabling strategy	Project activity during the year	Progress
Implementation of the road map to guide investment.		Will continue to develop in response to stakeholder input.	
Options for the use of urchin waste in agriculture identified.		2019-128 Assessing the benefits of sea urchin processing waste as an agricultural fertiliser and soil ameliorant.	
Development of an industry-wide biosecurity situation report for farmed prawns.		2019-214 Survey for White Spot Syndrome Virus vectors in the Moreton Bay White Spot Biosecurity Area.	
Develop management options to rebuild Southern Rock Lobster stocks on the east coast of Tasmania.		2017-013 Rebuilding Southern Rock Lobster stocks on the east coast of Tasmania: Informing options for management.	
		2019-075 Recreational Southern Rock Lobster tagging program—assessing current data and modelling assumptions and approaches to establish a robust estimate.	
		2019-130 Larval dispersal for Southern Rock Lobster and Longspined Sea Urchin to support management decisions.	
Successful trials of innovation investment platforms with partners to address priority areas.		2018-199 'TEKFISH' innovation + entrepreneurship (I+E) platform for disruptive Innovation: Create a global platform that will accelerate the discovery; development; adaptation; and adoption of disruptive innovations to solve key problems and/or opportunities for Australian fishing and aquaculture.	
		2020-054 Developing innovations with Australian wild-catch fisheries.	
Develop tools for developers to test investment readiness using Deckhand as a case study.		2018-169 Evaluate Deckhand investment readiness and develop a best-practice global commercialisation road map for execution with potential investors.	

Examples of project activity during the year

Ocean-farmed seaweed harvests underway

Projects 2017-177, 2017-212, 2019-032, 2019-144

For further information: www.seaweedsolutions-crc.com;
Craig Sanderson, craig.sanderson@tassal.com.au

FRDC-funded research has been critical in developing the propagation techniques that are helping Australia to establish ocean farming of seaweeds.

Australia's first harvest of commercial-grade farmed ocean seaweeds began in September 2020 with a second harvest in November of that year. Both harvests, in Tasmania, have occurred under the auspices of the Seaweed Solutions Cooperative Research Centre Project (CRC-P), funded through the Department of Industry, Science, Energy and Resources.

The Seaweed Solutions CRC-P officially kicked off in June 2019 and work began in 2020. Partners in the CRC-P include Tassal Group Ltd, the University of Tasmania's Institute for Marine and Antarctic Studies (IMAS), Deakin University and Spring Bay Seafoods.

Developing commercial production practices for native seaweeds is part of research that has been underway in Tasmania for four years, with the aim to develop an integrated multi-trophic aquaculture system. Aquaculture company Tassal Group has been the leading force behind this work, conducted in conjunction with its Atlantic Salmon farm operations in the state.

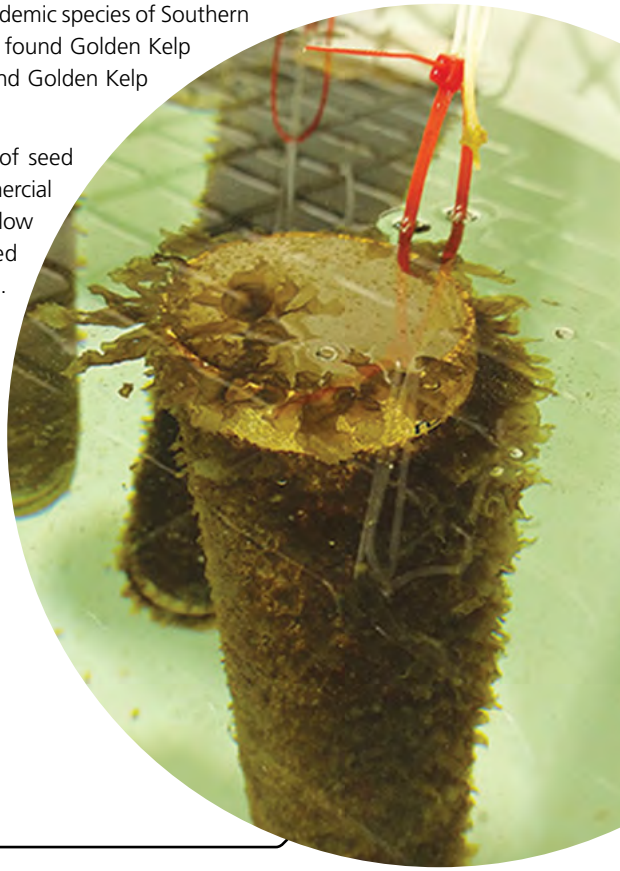
According to Tassal's seaweed biologist Craig Sanderson, the trials now underway build on previous research the FRDC funded to develop culture methods for Tasmanian native seaweeds.

During that project, IMAS researchers led by Catriona Hurd helped to establish gametophyte-seeding technology for Giant Kelp (*Macrocystis pyrifera*), a species listed as threatened under the national *Environment Protection and Biodiversity Conservation Act 1999*.

This technology is also being applied to a locally endemic species of Southern Kombu (*Lessonia corrugata*) and the more widely found Golden Kelp (*Ecklonia radiata*). Giant Kelp, Southern Kombu and Golden Kelp are all brown seaweeds with existing markets.

The success of this work means a ready supply of seed gametophyte stock can be made available for commercial trials. The new propagation techniques may also allow producers to skip the hatchery phase and seed seaweeds directly onto lines to be deployed at sea.

This offers a significant cost saving on the more labour-intensive practices used in many Asian countries where seaweed industries are well established. It will help to make Australian production more economically competitive.



Current Seaweed Solutions CRC-P trials are using gametophyte-seeded ropes at three different locations in south-eastern Tasmania. The primary site is at Okehampton Bay, on a Spring Bay Seafoods site adjacent to Tassal's fish farming operations. The second site is at Great Taylor Bay, on Bruny Island, on a Tassal aquaculture lease. IMAS holds the lease on another site at Tower Bay, near Dover. As in previous trials, Giant Kelp has remained the most easily established and fastest growing of the three species propagated.

While modest, the harvests are a significant achievement given the many challenges posed by the COVID-19 pandemic and could not have gone ahead without the industry–research collaboration. The next step is to get some product out to the markets to gauge opinion.

Researchers were keen to analyse the composition and quality of the three species harvested and hoped to show not only the potential of these seaweeds for food and agriproducts, but also how the Australian species grown in clean cool waters off Tasmania differ from those grown elsewhere.

Multi-pronged strategy targets invasive urchins

Projects 2013-026, 2017-049

For further information: John Keane, Institute for Marine and Antarctic Studies; john.keane@utas.edu.au

The first Longspined Sea Urchin (*Centrostephanus rodgersii*) was positively identified in Tasmanian waters over 40 years ago. Since then, its numbers have grown to an estimated 20 million animals along the island state's east coast.

The urchins are voracious herbivores. In large numbers, they strip underwater reefs of vegetation, creating bare patches known as incipient barrens, then if left unchecked they can denude areas of all plant life. These established barrens have a devastating effect on local marine life, including commercially important species such as rock lobster and abalone.

The first extensive FRDC-funded assessment of the Longspined Sea Urchin's impact was released in 2005. It found that in parts of southern New South Wales, urchins had removed entire kelp beds and created extensive barrens on about 50 per cent of the state's shallow rocky reef habitat.

Subsequent studies in Tasmania have shown particularly around St Helens, barrens have grown alarmingly over a relatively short period of time.

Control options

In Tasmania the Longspined Sea Urchin has few predators. Tasmania's Southern Rock Lobster is one, but Tasmania's east coast lacks the biomass of rock lobster required to represent a viable biological control method. The rate of climate change on the east coast benefits urchins and disadvantages predators like rock lobsters.

Working together, the Tasmanian Government and industry partners began a 10-year rock lobster stock rebuilding strategy after populations reached historically low levels. Since 2015, about 30,000 rock lobsters have been relocated from Tasmania's south-west to incipient barren areas further north along the east coast. The strategy is on track to rebuild rock lobster stocks to greater than 20 per cent of the unfished stock by 2023.

However, this program is unlikely to be able reduce urchin numbers to the point where seaweed can re-establish.

Other potential control methods include:

- laboratory trials are underway to test the feasibility piping calcium oxide (quicklime) to barrens to kill urchins,
- the automated culling of urchins using robotic technology.

The most direct and comprehensive methods of control involve direct removal or culling by commercial divers.

An edible solution

In more accessible areas with higher catch rates, commercial harvesting has proven to be the most effective control option. While many Australians are unfamiliar with the taste and culinary uses of sea urchin roe, there is demand in Japan where it commands a premium price.

Tasmanian Abalone company, RTS PauaCo, has developed a quality product that is paying dividends both economically and environmentally and has spent several million dollars over the past three years refining the processes to reach a point where urchin processing has become a viable part of the business.

Researcher John Keane from the Institute for Marine and Antarctic Studies, at the University of Tasmania found the commercial harvest of Longspined Sea Urchins reduces the impact on abalone and rock lobster fisheries, even with low levels of harvesting.

Sea urchin catches over the past three years have seen more than 1000 tonnes taken from east coast waters and has had a positive effect on numbers. A new project will re-survey a previous habitat study done between 2014 and 2016.

A helping hand

A subsidy for urchin divers was initiated in 2018, with $5.1 million available over five years to support and increase the sustainability and productivity of the $90 million Tasmanian Abalone industry. It is administered by the Abalone Industry Reinvestment Fund, a joint initiative between the Tasmanian Department of Primary Industries, Parks, Water and Environment and the Tasmanian Abalone Council.

With eradication not possible the focus has been on mitigation. The best approach from a sustainability perspective was to try and create a lasting industry based on the harvest of the sea urchins, and the subsidy for divers has been an important factor.

Most of the active urchin divers also hold abalone diving licences. With recent quota reductions in the abalone sector, the dual licence divers have welcomed the additional demand for urchins by processors.

It offers both a crucial financial lifeline to divers and acts as startup funding, enticing fish processors into harvesting the urchins for their roe.

The introduction of the subsidy has helped to remove over two million urchins. Divers are reporting a diminishing urchin population and an increase in seaweed, with the abalone coming back.

OUTCOME 2:
Best practices and production systems

Diverse benefits from aquatic resources to be consistent with shared principles

THIS OUTCOME ALIGNS WITH THE FOLLOWING UNITED NATIONS SDGs:

Ethical performance is now fundamental to business worldwide, with benefits including improved reputation, reduced risk, competitive advantage, access to new markets and value creation. Industries and sectors are responding by adopting practices that have less impact on the environment or are even regenerative. They also consider the wellbeing of workers, communities and consumers, conserve non-renewable energy, sustainably manage natural resources, minimise stress in animals, and do not compromise the needs of future generations.

Key focus areas

Over the life of the current plan, the FRDC will explore opportunities to invest in, manage and promote adoption of R&D to:

- minimise impacts on non-target species and ecosystems,
- better understand and increase wellbeing, equity and safety of workers within each sector,
- develop innovative ways to conduct and communicate independent validation of sustainable practices and outcomes to markets and consumers,
- improve animal welfare outcomes,
- promote learning and sharing among sectors and industries, including identifying, documenting and promoting Indigenous traditional fisheries management systems and practices,
- inform effective management of climate change impacts through adaptation and mitigation,
- explore ways to capitalise on new opportunities presented by climate change,
- develop improved decision-making tools better able to respond to biological variability and increased revenue volatility and risks.

R&D investments 2020–21	Enabling strategy	Project activity during the year	Progress
Review of guidance documents and legislation for aquatic animal welfare.		2020-040 Aquatic animal welfare—a review of guidance documents and legislation.	
Climate driven shifts in benthic habitat composition as a potential demographic bottleneck for Western Rock Lobster.		2019-099 Climate driven shifts in benthic habitat composition as a potential demographic bottleneck for Western Rock Lobster: Understanding the role of recruitment habitats to better predict the under-size lobster population for fishery sustainability.	
Understanding the status, biological and catch dynamics of threatened hammerhead sharks encountered by the Northern Territory offshore net and line fishery.		2019-141 Understanding the status, biological and catch dynamics of threatened hammerhead sharks encountered by the Northern Territory offshore net and line fishery.	
Scope alternative fish observation and catching technologies.		2020-054 Developing innovations with Australian wild-catch fisheries.	
		2018-049 A better way to fish: Feasibility of alternative gears to reduce bycatch in offshore net fisheries.	
Determination of the impacts of direct harvest of coral species in northern Australia.		2019-070 Determination of the impacts of direct harvest of coral species in northern Australia	
Invest in informing the future strategy for workforce needs for the fishing industry.		2016-148 Assessing the people and capability framework for the aquaculture industry.	
Council of Rural RDC Climate Initiative.		The FRDC assisted development of the CRRDC Climate Initiative Investment Plan, and is assisting Agricultural Innovation Australia in developing strategy for investment.	

R&D outputs 2020–21	Enabling strategy	Project activity during the year	Progress
Implementation of the road map to guide investment.		Will continue to develop in response to stakeholder input.	
Jurisdictional SAFS reporting template finalised.		2019-122 Reporting template developed for all jurisdictions and trialled in Western Australia, Queensland and the Northern Territory.	
2020 SAFS reports.		2019-149 2020 SAFS reports.	
Trial of alternative investment methods to innovate production in aquaculture and wild-catch fisheries.		2020-054 Developing innovations with Australian wild-catch fisheries.	
		2019-174 Aquaculture Challenge Workshop as part of TEKFISH.	
		2018-199 'TEKFISH' innovation + entrepreneurship (I+E) platform for disruptive innovation: Create a global platform that will accelerate the discovery; development; adaptation; and adoption of disruptive innovations to solve key problems and/or opportunities for Australian fishing and aquaculture.	
Finalisation of risk-based reporting of fisheries via Whichfish.		2019-209 Developing a guidance document for Whichfish risk assessment.	
Ensuring monitoring and management of bycatch in Southern Rock Lobster fisheries is best practice.		2017-082 Ensuring monitoring and management of bycatch in Southern Rock Lobster fisheries is best practice.	
Report examining options for adaptation of Commonwealth fisheries management to climate change.		2016-059 Adaptation of Commonwealth fisheries management to climate change.	
Developing alternative strategies for managing seal-fisher interactions in South Australian Lakes and Coorong Fishery.		2018-036 Seal-fisher-ecosystem interactions in the Lower Lakes and Coorong: Understanding causes and impacts to develop longer-term solutions.	

Examples of project activity during the year

Risky business: Equipping Australia's fisheries for climate change

Project 2016-059

For further information: Beth Fulton, beth.fulton@csiro.au;
Ryan Murphy, ryan.murphy@afma.gov.au

A new handbook titled *Adaptation of Commonwealth fisheries management to climate change* offers a step-by-step guide to managing the risks of climate change in Australian fisheries.

It provides fisheries managers and other stakeholders with a systematic approach to identify climate change-related risks and develop timely and appropriate responses. The handbook has been developed based on 30 years of observed changes in the environment and other accumulated science.

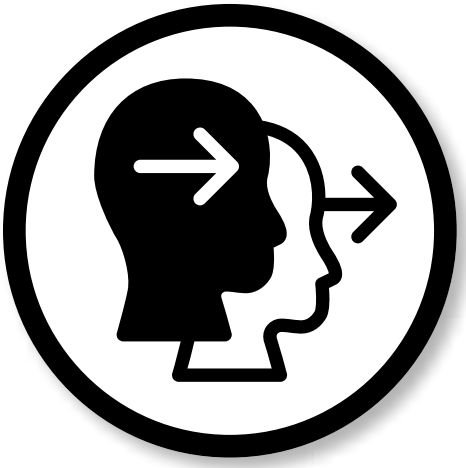
CSIRO ecosystem modeller Beth Fulton led a team of CSIRO and University of Tasmania researchers to develop the handbook.

Qualitative modelling is used to assess a range of management responses to different climate change impacts. For example, the East Australian Current has moved a couple of hundred kilometres further south and has already seen more than 50 species move. Fulton suggests one option is to allow fishers to follow the fish by developing flexible access rules across jurisdictions.

Another option is diversifying the species fished by finding some new local targets.

The project also highlighted the challenge of collecting enough up-to-date information on the condition of fisheries, since old collection timeframes are no longer sufficient to meet the climate change challenge.

The handbook is the result of an FRDC-funded project run by CSIRO and the Australian Fisheries Management Authority (AFMA) and involved extensive consultation with AFMA managers and fisheries representatives. It includes a complete worked example, based on a hypothetical fishery, that lays out all the steps from the initial risk assessment to management recommendations.



OUTCOME 3:
A culture that is inclusive and forward thinking

A fishing and aquaculture community that is cooperative, diverse and well equipped to enable growth and adaptability in a complex and uncertain world

THIS OUTCOME ALIGNS WITH THE FOLLOWING UNITED NATIONS SDGs:

'Culture' describes an emergent pattern of behaviours and responses adopted by a group over time, which they consider to be the 'correct' way to perceive, feel, think and act. Culture reflects what a group stands for, what they consider to be right and wrong, and is shaped by the rules, systems and protocols of their surroundings.

Working to address the dynamics that affect fishing and aquaculture today—such as market volatility, evolving societal beliefs, climate-driven ecological changes and technological disruption—requires a culture that is focused on solutions, resourceful and willing to be collaborative.

To change culture, what shaped it in the first place must be understood. This means identifying the underlying beliefs, relationships and norms that are influencing decision making and challenging assumptions and expectations. Based on this understanding, developing a more productive culture requires developing new ways of thinking about and working together.

Key focus areas

To assist, the FRDC will explore opportunities to invest in and manage adoption of R&D research to:

- understand and address factors that hold back positive cultural and behavioural change,
- promote greater inclusiveness, creative thought and solution seeking,
- support sharing among stakeholders so that others can learn from those who are already producing promising results,
- encourage openness to new ideas, approaches and ways of thinking and behaving, recognising that needs may differ among sectors
- strengthen collaboration across sectors to enable the full benefit of collaborative partnerships.

The FRDC will also aim to modify how it identifies and solves problems by engaging a range of collaborators to tackle ambitious challenges together. This may mean accepting new tolerances for risk and realising that experimentation can fail or come up with unexpected results but will always provide opportunities for learning.

R&D investments 2020–21	Enabling strategy	Project activity during the year	Progress
Rural Safety & Health Alliance—A joint RDC initiative.		2018-214 Rural Safety & Health Alliance—A joint RDC initiative.	
Invest in future leaders.		2017-003 National Seafood Industry Leadership Program 2018–21.	
		2016-407 Nuffield Australia Farming Scholarship to study practices in the fishing industry.	
		2016-408 Australian Rural Leadership Program Courses 24, 25 and 26.	

R&D outputs 2020-21	Enabling strategy	Project activity during the year	Progress
Implementation of the road map to guide investment.		Will continue to develop in response to stakeholder input.	
Develop a national, culturally appropriate capacity building program for involvement of Indigenous Australians in fisheries management.		2019-124 Shared science and Indigenous knowledge to support fisheries capacity building in Torres Strait.	
Establish an online skills platform to provide access to training by women in rural and regional areas that will support greater diversity in seafood enterprises, research agencies and industry associations.		2018-174 Women in Seafood Australasia—Understanding, supporting and promoting effective participation by women within the Australian seafood industry.	
Develop custom training and technical support for the fishery stock assessment software 'stock synthesis'.		2018-168 Custom training and technical support for the fishery stock assessment software 'stock synthesis'.	

Examples of project activity during the year

World Fisheries Congress

Projects 2018-059, 2019-152

For further information: www.wfc2021.com.au

After a year of disruption resulting from the COVID-19 pandemic, the eighth World Fisheries Congress (WFC2021) was back on. WFC2021 ran virtually from 20 to 24 September at the Adelaide Convention Centre, with the theme of 'Sharing our oceans and rivers—a vision for the world's fisheries'.

The FRDC and the Government of South Australia are founding sponsors for the WFC2021. CSIRO and the United States National Oceanic and Atmospheric Administration (NOAA) were premium sponsors and Austral Fisheries was the event's major industry sponsor.

The congress is the largest international gathering of fisheries research, industry and management sectors. Normally held every four years to discuss the latest advances in fisheries worldwide, it aims to foster cooperation and engagement in commercial, recreational and Indigenous fisheries.

WFC2021 provides an important forum for learning about the global challenges facing fisheries and the enormous opportunities for growth, innovation and change.

Organisers say the response to the call for presentation and poster abstracts was overwhelming with more than 1400 submissions under the four key themes:

- sustainable fisheries (assessment, regulation, enforcement),
- fish and aquatic ecosystems (biodiversity, conservation, ecosystem function, integrated management),
- fisheries and society (contributions to sustainable development),
- future of fish and fisheries (Innovations in fisheries).

The congress was expected to attract about 1500 delegates and they will have access to recordings of all sessions for up to six months after the event.

Support for women in leadership

Project 2018-174

For further information: Karen Holder, WISA, president@womeninseafood.org.au;
WISA, www.womeninseafood.org.au;

The aspirations of women in fisheries and fisheries science were highlighted during an International Women's Day event on 8 March 2021, hosted by Women in Seafood Australasia (WISA).

The combined in-person and online event included screening of the documentary "The Leadership" about the flagship voyage of Homeward Bound, a transformational leadership initiative for women in science, technology, engineering and mathematics (STEM) from around the world.

The event was held at the Port Lincoln Hotel, with the live viewing of the documentary followed by an online panel allowing the 40 participants to compare experiences and share ideas.

Panellists included:

- Kate Brooks, FRDC director and sociologist,
- Claire Webber, director on the WISA Board,
- Molly Christensen, a senior technical officer, Institute for Marine and Antarctic Studies.

The panel discussion highlighted a consensus that the changes needed in science and industry will require work from all genders. This means breaking down fears and stigma around differences in ways of working and solving problems.

A critical gap identified as needing persistent attention is the gender disparity in leadership in STEM.

In Australia, the Department of Industry, Science, Energy and Resources found there is still a strong disparity in the representation of women in STEM and in their pay compared to men. As of 2016, only 17 per cent of STEM workers were women, and in science they earned an average of 12.4 per cent less than their male counterparts.

Vulnerability was also a strong topic of discussion. Panellists and attendees alike emphasised the ongoing need to protect women from assault in every context, and the urgent need to prioritise physical and mental safety.

All attendees were challenged to consider what they would do to continue momentum for greater equity in both the seafood and STEM sectors.

One important step WISA is taking, with the support of the FRDC, is a project to benchmark who the women in seafood are and where they are, and then to find ways to support and promote effective participation in the sector.

OUTCOME 4:
Fair and secure access to aquatic resources

Integrated management of Australia's aquatic resources, providing certainty and confidence

THIS OUTCOME ALIGNS WITH THE FOLLOWING UNITED NATIONS SDGs:

Shared and secure access to aquatic resources, guided by good management, is fundamental for the continued delivery of economic and social benefits such as food, income, employment, recreation and cultural identity for all Australians. However, resource sharing and access re-allocation among users can be contentious. As the 'blue economy' takes shape and seafood species move in response to a changing climate, Australia's seascapes are likely to become busier and more contested.

Greater security of access has been identified as one of the most pressing issues facing the commercial sector.

Optimising benefits for the Australian community means sharing resources fairly, using open and evidence-based processes within the limits of sustainability.

Decision making on the management of aquatic resources sometimes occurs without a multi-sector view and the associated context necessary to ensure that the Australian community receives the best value from any decisions made. At times this has led to unintended trade-offs, environmental impacts, unnecessary complexity, ineffectiveness, inefficiency and increased costs.

Key focus areas

To assist, the FRDC will explore opportunities to invest in R&D to:

- support increasingly integrated and effective management of Australia's aquatic resources,
- promote development and adoption of management measures that are well suited for resilience to change, including:
  - harvest strategies that are flexible to take account for the dynamic nature of resource use,
  - flexible spatial arrangements, decision-making tools better able to transparently deal with biological variability, climate change, harvest uncertainty, management of revenue volatility and risks,
  - management approaches that aim for fairness,
  - participative management across Australia's fisheries to improve efficiency and reduce costs.

R&D investments 2020–21	Enabling strategy	Project activity during the year	Progress
Develop a traditional fishing harvest strategy to support the sustainable harvest of Quampie in Queensland.		2019-127 Developing a traditional fishing harvest strategy to support the sustainable harvest of Quampie (*Pinctada albina*) in Moreton Bay.	
Implementation of dynamic reference points and harvest strategies to account for environmentally driven changes in productivity in Australian fisheries.		2019-036 Implementation of dynamic reference points and harvest strategies to account for environmentally driven changes in productivity in Australian fisheries.	
Integrate recreational fishing information into harvest strategies for multi-sector fisheries.		2019-021 Integrating recreational fishing information into harvest strategies for multi-sector fisheries.	

R&D outputs 2020-21	Enabling strategy	Project activity during the year	Progress
Implementation of the road map to guide investment.		Will continue to develop in response to stakeholder input.	
In partnership with DAWE develop a resource sharing arrangement with Commonwealth fisheries with the view to national guidelines.		The FRDC provided input to the Commonwealth Fisheries Resource Sharing Framework, which outlines the government's approach to sharing fisheries resources across commercial, recreational and Indigenous fishing sectors and between the Commonwealth, the states and the Northern Territory.	
Undertake a review that looks at options for security of resource access.		2019-173 Security of resource access—what is legislative best practice for the commercial seafood industry?	
Develop triple bottom line harvest strategies that include environmental aspects for multi-sector fisheries.		2015-013 Developing triple bottom line harvest strategies that include all environmental aspects for multi-sector fisheries.	
		2019-211 Blue economy CRC (Huon Aquaculture)	

Examples of project activity during the year

Harvest strategy broadens horizons

Project 2019-021

For further information: Ashley Fowler, NSW Department of Primary Industries, ashley.fowler@dpi.nsw.gov.au

The roll out of fisheries policies and harvest strategies across Australian fisheries is gathering pace, setting clear expectations for stakeholders and building community trust in the sustainable management of our fisheries.

The FRDC has regularly supported the development of harvest strategies and the monitoring and assessment research that makes them possible. It continues to invest in the development and implementation of harvest strategies around the country.

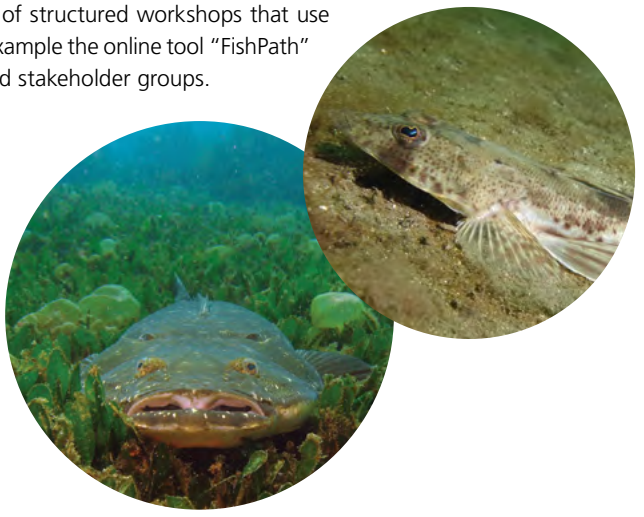
In its simplest form, a harvest strategy provides a framework to ensure that fishery managers, fishers and other key stakeholders use available information about particular fish stocks and apply an evidence-based approach to setting catch levels. Harvest strategies provide industry and the Australian community with confidence that Commonwealth commercial fish stocks are being managed for ecological sustainability and economic viability. Implementation of clear harvest strategies also provides the fishing industry with a more certain operating environment.

Researchers from New South Wales Department of Primary Industries are investigating harvest strategies for multi-sector fisheries. The integration of recreational fishing into harvest strategies is necessary for many fisheries in Australia to account for catches that equal or exceed commercial catch for the same key species.

Recreational fishing is an important and often neglected component of fisheries in Australia. Recreational fishers in New South Wales harvest substantial quantities of the state's most popular species, with retained catches of Dusky Flathead, Sand Flathead, Mulloway and Yellowtail Kingfish exceeding the commercial harvest. Despite this, the recreational harvest in New South Wales is not monitored regularly and rarely incorporated into stock assessments.

New South Wales provides an important test case for addressing issues around recreational fishing integration as many of the issues are found in other jurisdictions. Developing harvest strategies for multi-sector fisheries requires a transparent and defensible process due to the complex nature of addressing diverse objectives and apprehension among stakeholder groups.

The project will investigate the use of structured workshops that use intuitive decision support tools, for example the online tool "FishPath" and involve independent experts and stakeholder groups.



DUSKY FLATHEAD (LEFT) AND SOUTHERN SAND FLATHEAD (RIGHT).

OUTCOME 5:
Community trust, respect and value

People feel good about using the products, services and experiences provided by fishing and aquaculture

THIS OUTCOME ALIGNS WITH THE FOLLOWING UNITED NATIONS SDGs:

Community support is essential if Australia's fisheries are to grow and prosper. Aquaculture activities also need the approval and trust of local residents, given the sector's aspirations for growth into new coastal waters. Achieving and retaining this support means that fishing and aquaculture need to show that use of publicly-owned resources can be compatible with community values and also deliver societal benefits.

FRDC research determined the main reasons that society does, or will, support fishing and aquaculture included:

- government is seen to have a strong oversight of the sector and there are fair decision-making processes in place,
- operations are acting in alignment with social norms, have a level of visibility and there is evidence of sustainable and responsible practices,
- sectors are building relationships, connecting with the community and communicating effectively,
- fishing and aquaculture work together, using alliances and partnerships to resolve issues,
- there is a shared vision, with benefits being generated and distributed to the Australian community.

Key focus areas

The FRDC will explore opportunities to invest in, manage and promote adoption of R&D to:

- motivate action across sectors to achieve a shared vision,
- nurture relationships and communications between stakeholders and with the community,
- encourage the use of transparent decision-making tools and best practice in the management of fisheries and aquaculture to ensure a fair distribution of economic and societal benefits,
- improve seafood traceability and integrity from capture through to end user.

R&D investments 2020–21	Enabling strategy	Project activity during the year	Progress
Measuring, interpreting and monitoring economic productivity in commercial fisheries.		2019-026 Measuring, interpreting and monitoring economic productivity in commercial fisheries.	
Economic mapping of Australia's wild-catch prawn supply chain.		2019-157 Economic mapping of Australia's wild-catch prawn supply chain.	
Engagement for success: Evaluation of engagement events to inform industry management strategies.		2019-074 Engagement for success: Evaluation of engagement events to inform industry management strategies.	
Establish new portal for tracking emerging issues relevant to fishing and aquaculture.		2020-068 Implementing the FRDC's 2020–25 R&D Plan—strategic activities.	

R&D outputs 2020–21	Enabling strategy	Project activity during the year	Progress
Implementation of the road map to guide investment.		2019-042 Will continue to develop in response to stakeholder input.	
Community trust in seafood industry is mapped alongside other primary production sectors.		2019-149 AgriFutures: Community trust in Australia's rural industries.	
Traceability systems review for wild caught lobster, via Sense-T and pathways to market.		2016-177 Phase 2: Traceability systems for wild caught Lobster, via Sense-T and pathways to market.	
Socio-ecological assessment of the ecosystems, industries and communities of the Spencer Gulf.		2016-104 Socio-ecological assessment of the ecosystems, industries and communities of the Spencer Gulf.	
Complete a prawn fishery case study in environmental and economic accounting for primary industries.		2017-175 Linking ecosystem services to the profitability of prawn fisheries linked to 2017-188.	
		2017-188 Environmental and economic accounting in primary industries (natural capital accounting) linked to 2017-175.	

Examples of project activity during the year

Rural industries on track with trust

Project 2019-042

For further information: Emily Ogier, emily.ogier@utas.edu.au

A national research collaboration project is working to identify the drivers of trust in primary industries and strategies to improve it. The 'Community Trust in Rural Industries Program' is a partnership involving 10 rural RDCs including the FRDC, as well as the National Farmers' Federation and the New South Wales Department of Primary Industries.

The results from the first year of this three-year research project have already identified three key drivers of trust in rural industries: environmental responsibility, responsiveness to community concerns and the importance of products produced by rural industries.

The research has also found large sectors of the community are uncertain about issues that relate mostly to environmental responsibility and industry responsiveness.

The coordinator of the FRDC's Human Dimensions Research subprogram, Emily Ogier is a member of the working group for the program, which is being delivered by Voconiq, a CSIRO spin-off company.

An unexpected finding was the significant level of uncertainty around the seafood sector's responsiveness to community concerns, although many of the other findings from the first year of the research are similar to those of other community attitudes research the FRDC has conducted.

One of the other early findings was the high level of trust reported for fisheries and aquaculture products. Trust can be assigned not just to the end product, but to the whole package: who produces it, where it is produced, the provenance and care invested in supplying it.

The program's lead researcher, Kieren Moffat from Voconiq, has found trust is crucial for industry and business because it translates community expectations and experience into acceptance. It is what enables an organisation or industry to be given the benefit of the doubt when things go wrong. It provides a licence for innovation and flexibility to experiment, and a general freedom to operate.

Work on cross-sector influences and strategies is expected to be a feature of the second year of the program. Researchers are seeking to understand how food and fibre industries relate to each other in the minds of the community, and to see how the actions of one industry affect how Australians feel about other rural industries.

Initial findings have revealed that the behaviour of one rural sector affects the perception of others. An issue with live meat exports, for example, can influence perceptions of animal welfare in other sectors.

Research years two and three will seek to benchmark the results of the first year, but also examine these areas in more depth.

Prawn fishery counts its natural capital

Projects 2017-175, 2017-188

For further information: Becky Schmidt, CSIRO, becky.schmidt@csiro.au

A new study looking at the prawn-producing habitat in Wallis Lake, New South Wales is trying to understand how the natural habitat supports the prawn fishery's productivity and to value it through the use of natural capital accounting.

The Wallis Lake estuary supports a moderate-sized prawn fishery that can produce up to 60 tonnes of prawns a year, mostly in the summer months. More than 20 fishing businesses can be involved in the annual harvest and prawns are also a popular catch for recreational fishers.

Research led by CSIRO and supported by the FRDC, has demonstrated how natural capital accounting can be applied in fisheries. Stakeholders can now determine if it could improve management decisions and boost productivity, not only in the prawn fishery but also in all Australian primary industries.

The research has been applied to three case studies, including Wallis Lake, prepared as part of a larger national project, 'Increasing farm gate profits: the role of natural capital accounts', funded through the Department of Agriculture, Water and the Environment's Rural R&D for Profit program.

Creating the accounts

Wallis Lake estuary has important habitats including seagrass beds, mangroves and saltmarshes. Eastern School Prawn (*Metapenaeus macleayi*) is the most commonly caught prawn in the estuary, and the habitat supports it through several stages of its life cycle.

Environmental scientist Becky Schmidt at CSIRO led the Wallis Lake case study. The methodology CSIRO has developed draws on the business-focused Natural Capital Protocol and the United Nation's System of Environmental–Economic Accounting, to determine the connections between ecosystem assets, society and the economy.

The research team consulted with many stakeholders who have an interest in the health and productivity of Wallis Lake, including commercial and recreational fishers, land managers, local and state governments, and local conservation groups. It also consulted with the broader New South Wales fishing industry.

Identifying what matters

Key natural assets for the fishery are estuarine waters suitable for prawns, prawn-producing habitat, biodiversity and a renewable prawn population.

Researchers and stakeholders have identified activities or events that have the potential to impact these assets: pulses of fresh water into the estuary, agricultural activity in the catchment, and commercial fishing in the estuary.

The project shows effective management of the whole system requires catchment and water management alongside fisheries management, so the direct impacts of both terrestrial and water-based users on the shared natural capital in the estuary can be considered.

In consultation with stakeholders, the researchers proposed seven natural capital accounts that could be compiled from publicly available data:

- precipitation in the catchment,
- fresh water pulses in the catchment,
- land use in the catchment,
- terrestrial and riparian vegetation in the catchment,
- aquatic prawn habitat,
- water quality in the prawn habitat,
- landed-prawn biomass.

The combination of these accounts forms a picture of the overall health of the ecosystem and is expected to provide a better understanding of the main drivers of estuary health and the prawn-fishing industry.

Industry benefits

Commercial fishers who assess their operation through a natural capital accounting process could use it to attract investors. They could also use the process to gain social licence by demonstrating good management of the estuary. In addition, by understanding the threats to natural assets and business risks, fishers can adjust their goals in recognition of a changing outlook.

With a changing climate, there is an increasing awareness that resources are finite and under threat. There is a need to be more efficient in the use of resources and to ensure the natural system has what it needs to function.

However, small-scale fishery enterprises are generally too small to invest in scientific data collection and maintain their own set of natural capital accounts. There is an opportunity for fishers to band together and work with larger organisations such as local government or catchment agencies to gather the data required to monitor and improve management of their shared resource.

It is hoped the trials of this new method will add value to fisheries right across Australia.

ENABLING STRATEGIES

To help make progress towards the five R&D Plan outcomes faster and easier, the FRDC is using five enabling strategies:

I. Drive digitisation and advanced analytics (this means expanding capacity to make decisions based on data).

II. Strengthen adoption for transformative change (this means increasing adoption of results from R&D to bring about beneficial change).

III. Promote innovation and entrepreneurship (this means encouraging new solutions, products and processes as well as new ways of thinking and doing).

IV. Build capability and capacity (this means helping people from across fishing and aquaculture to have the knowledge and skills needed to be safe, happy and productive, and to adapt and flourish in the face of change).

V. Provide foundational information and support services (this means delivering information to guide the evolution of fishing and aquaculture in Australia).

These enabling strategies aim to equip fishing and aquaculture sectors with the tools and ways to tackle shared challenges in the future. Each strategy can support one or multiple outcomes.

ENABLING STRATEGY I:
Drive digitisation and advanced analytics

Technology is changing the way people live, work and relate to one another. Some new technologies present opportunities for fishing and aquaculture to easily combine and analyse data to make decisions that reduce costs and increase benefits. Commercial wild-catch fishers will have access to data previously unavailable, including near real-time information on:

- gear performance and efficiency,
- costs and usage of energy and other inputs,
- behaviour and distribution of target species,
- markets and prices.

In aquaculture, new technologies already mean that operators can remotely monitor:

- stock health and welfare,
- feed efficiency,
- disease incidence,
- responses of fish to medicine and treatment.

These new technologies are called 'advanced analytics'. They allow for automated collection and analysis of large datasets that translate into tools for decision making. Implementing advanced analytics in Australian fishing and aquaculture means that all sectors could conduct their activities 'smarter' and add value to their products. In addition to the economic and social benefits, such as health and safety as well as technologies that can be used to improve ecosystem health. All fishing and aquaculture sectors, including managers, should be open to change to make the most of these decision-support tools.

Falling technology costs are making broadscale adoption of advanced analytics in Australian fishing and aquaculture more affordable. Increased collaboration across sectors and industries should also motivate the uptake of advanced analytics across fishing and aquaculture.

The FRDC will explore how to invest in, manage and promote adoption of R&D to:

- encourage collection and sharing of data to support advanced analytics that will benefit fishing and aquaculture and the community,
- work towards building trust and confidence in digital technologies and data,
- support the development of systems and tools,
- contribute to a series of cross-disciplinary 'lighthouse projects' showing how advanced analytics can help transform Australian fishing and aquaculture.

Examples of project activities during the year

Australian Agrifood Data Exchange

Project 2020-126

The FRDC is collaborating in the development of the Australian Agrifood Data Exchange. The initiative, led by Klynveld Peat Marwick Goerdeler (KPMG) and Meat & Livestock Australia, seeks to leverage technology across supply chains to maintain the domestic and global competitiveness of Australian agriculture. The overall goal is for an interconnected data highway making it possible to share, reuse and combine data.

This project aims to:

- conduct a series of experiments to determine the key requirements and considerations for an effective Australian Agrifood Data Exchange,
- through the experiments, develop four proof of concepts that will enable the analysis to underpin a business case for a minimum viable product,
- develop a national framework for multi-stakeholder collaboration in the exploration and initiation of an Australian Agrifood Data Exchange.

The experiments through case studies are being developed in collaboration with multiple RDCs and research institutions to leverage broad experiences for common problem solving.

From the four identified use cases (1. Centralised data for compliance and certification, 2. Biosecurity and contamination information, 3. Voluntary benchmarking for comparisons and decisions, and 4. Supply and origin traceability), the FRDC will be partnering in use cases 2, 3 and 4, with particular focus on use case 4.

The use case 'Supply and origin traceability' will develop the ability to build the full story about produce on its journey through to the consumer, with details from each aspect of the supply chain (i.e. property, quality, weight, journey, certifications, origin, welfare, exposure to fertiliser/chemicals etc.) and be able to receive feedback from others in the supply chain.

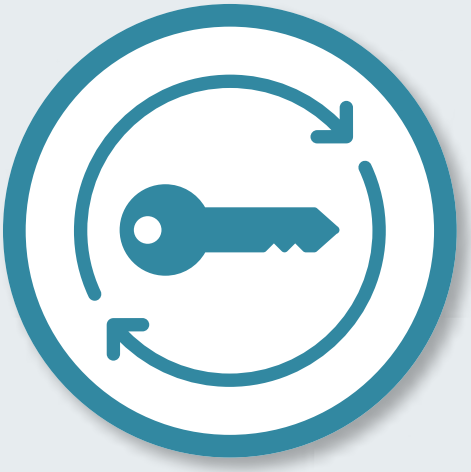
Outcomes from this work will include:

- end-to-end visibility of product movement across the supply chain,
- increased confidence in product supply,
- reputational brand enhancement leading to fair return for product,
- refined understanding of opportunities for product value optimisation.

grow$^{AG.}$

grow$^{AG.}$ was launched by the Minister for Agriculture and Northern Australia the Hon. David Littleproud MP on Monday, 12 April 2021. The grow$^{AG.}$ program is designed to create a global gateway into the Australian research and innovation system, with a focus on deal-flow, attracting capital investment and driving collaboration. It makes R&D outcomes transparent for growers and the community. It positions Australia as a global agrifood innovation hub and makes it easy to explore, find and connect with potential partners and opportunities. grow$^{AG.}$ is a collaborative effort by DAWE and Australia's 15 RDCs.

To the end of June 2021, grow$^{AG.}$ showcased 31 commercial opportunities to over 10,000 users from 117 countries (70 per cent from Australia). As well as connecting pathways to commercialisation that enable research innovation to be delivered back to the farm and the food supply-chain, grow$^{AG.}$ is enabling research organisations and funding bodies to reduce duplication and readily identify potential collaborators. It features over 2000 research projects including 332 funded by the FRDC. grow$^{AG.}$ was designed by a Steering Committee made up of individuals from 19 organisations across Australia and New Zealand agricultural innovation network including the FRDC.



ENABLING STRATEGY II:
Strengthen adoption for transformative change

Research and development activities only deliver benefits for industry when results are shared and used. Adoption of research results by end users is determined by factors including:

- degree of end-user participation in delivery,
- complexity of research outputs,
- financial cost of adoption,
- time period to recover expenditure following adoption,
- end-user beliefs and opinions,
- level of end-user motivation,
- perceptions of relevance of research outputs,
- end-user attitudes towards risk and change,
- the ease or difficulty with which outcomes of adoption may be observed.

A review in 2019 reported variable results from FRDC's past extension* (or adoption) efforts to achieve adoption. It found that these could be more structured, but that a 'one size fits all' approach would be difficult to apply across all fisheries. Feedback from stakeholders noted that:

- the FRDC may be well-placed to coordinate extension activities, even if they are delivered by someone else,
- the most efficient extension methods are not always the most effective because end users are more likely to take up the results of research when they are explained or shown by a trusted colleague,
- successful extension of research requires awareness of local context, effective networks and understanding who the 'adopter' is; why they need it and therefore what they need; what will encourage them, and any constraints they are facing along the way.

Over the life of its R&D Plan 2020–25 the FRDC will:

- take a new approach to adoption by moving beyond transferring knowledge to helping end users make changes in their businesses,
- support end users in forming 'communities of practice'—informal groups that work together to use their local knowledge and experience to refine and improve adoption of research outputs.

* Extension has a range of different interpretations. In this case it is defined as enabling change or adoption (through the use of R&D knowledge).

Examples of project activities during the year

New extension and adoption strategy

The FRDC has identified a need to improve extension and/or adoption of R&D. As a first step a new staff member was appointed in 2021 to lead a program of work around extension and adoption and transformative change consistent with the R&D Plan 2020–25 (see enabling strategy 3).

During 2022, the FRDC will implement a range of initiatives to improve extension and adoption including:

- developing a fishing and aquaculture extension practitioner national network,
- applying impact planning principles to its investments to drive effective extension,
- providing strategic extension support to high impact projects,
- increasing extension expertise in the fishing and aquaculture sector working with partners.

The FRDC is continually improving its investment processes to ensure that end users of the research and development are involved or considered in project design and implementation to increase adoption outcomes.

Communications program—Increasing community understanding, trust and acceptance for the Western Rock Lobster industry

Project 2020-058

This program is currently working to generate capacity by, and for, Western Rock Lobster Council to improve communications within and outside the industry to attain its goal of creating a highly professional organisation and industry by 2022. The Council must have the means to inform the industry of R&D that may influence day-to-day operations and longer-term planning for individual enterprises and the industry as a whole. Equally, it must be in a position to provide the community with information that increases trust, respect and value for the Western Rock Lobster industry and its members, particularly through increased awareness of the R&D that underpins the environmental record of the industry, innovation and its value to Western Australia (particularly regional areas of the state) and Australia.

The Council has long acknowledged that its role is to support R&D for the broader industry (not only the fishermen), and to date the organisation has been ineffective in doing so. It has been noted that there is a need to be more collaborative and encompassing of the diverse stakeholder groups within the industry, which can be achieved through greater engagement and improved communication. The Council must be perceived by its stakeholders as being relevant, accessible, responsive and a credible provider of R&D to the industry. To achieve these aims, the program will:

- engage with and understand the community's views of the Western Rock Lobster industry in order to determine how to increase community trust, respect and value for the Western Rock Lobster industry,
- provide efficient and effective channels of communication to stakeholders to share the benefits of R&D,
- increase education within and awareness of the Western Rock Lobster industry,
- keep members, fishers and crew well informed and provide them the opportunity to offer feedback and input as to the Council's activities.

ENABLING STRATEGY III:
Promote innovation and entrepreneurship

More than ever before, the fishing and aquaculture industry needs inventive people with the ability to solve problems. In the face of many changes, societies need to think differently, and both need to work together and explore solutions to varied problems. Making a difference usually demands that a new product or process is not just developed but is used to deliver increased benefits across a range of stakeholders. This is the process of innovation.

There are many ways innovation occurs, but all require different ways of thinking about the future and how we interact with it.

Doing things better

This involves ongoing small improvements to how business is conducted, usually by introducing new but well-understood advances. Adoption and benefits are usually over shorter timescales.

Doing things differently

This involves a business's capability to change the way it normally does things in response to changes in the world. It often means applying ideas or technology in new ways but takes longer to implement or see the benefits from.

Doing different things

This requires innovation and invention. Without knowing what is needed in the future, breaking new ground usually involves envisioning an outcome (be it a product or process) and being committed to achieving it. It may take years for results to emerge, but they could fundamentally change how businesses or communities operate.

Balancing FRDC's investment

Much of the FRDC's past investment has focused on 'doing things better' and to a lesser extent 'doing things differently'. This is understandable because innovations in small steps usually solve problems for present-day problems. In contrast, investments seeking to change or disrupt how things are done (or do entirely new things) need different ways of thinking and problem solving. Although these are less likely to provide immediate pay-offs, they may come up with unexpected results.

Innovations that disrupt will continue to emerge, and their effects will be felt in fishing and aquaculture even if they are not actively sought. An example is the emergence of laboratory-cultured protein alternatives. Consequently, fishing and aquaculture sectors need to imagine and shape the future they would like to see by solving problems over variable timescales and using different approaches.

Over the life of the R&D Plan 2020–25 the FRDC will trial more effective ways to invest in:

- sharing ways of solving problems,
- exploring alternative solutions,
- using the results of R&D to foster longer-term, high-impact innovations that generate new capabilities.

Examples of project activities during the year

Global Ag-Tech Ecosystem partnership

The FRDC is joining the GATE (Global Ag-Tech Ecosystem), an initiative established by the New South Wales Department of Primary Industries (NSW DPI) in 2018 to fast-track innovation and primary industries research into impact. FRDC joins the GATE Board alongside research organisations, Hort Innovation and Cotton RDC, and corporate venture capital partner Sparklabs Cultiv8.

The GATE is a unique program that will support efforts to translate and apply research. The value of the GATE comes from its members portfolio lens across commodities and primary industry systems. From seaweed for livestock feed to integrated marine management and emerging aquaculture industries, fisheries and aquaculture research is more and more intertwined with other primary industry research and technology sectors. The GATE supports this engagement and discovery of opportunities.

"The GATE is excited to have FRDC become a partner and extend our collaboration in innovation further in the aquaculture and fisheries space" says Bruce Finney, Group Director of Business Development and Innovation with NSW DPI. The GATE supports start-ups and research teams to test and turn their ideas into real world solutions for primary industries and society.

Future proofing the Southern Bluefin Tuna industry by developing new products for new markets

Project 2020-109

This project formalises producer collaboration to develop and market new value-added Southern Bluefin Tuna (SBT) products. This work is responding to the declining economic landscape for SBT ranching in South Australia. While the cost of production has remained static, farm gate prices were the lowest in 2020 since farming began. Currently, the industry is reliant on one dominant market in Japan, which is setting market prices. As Japanese prices are unlikely to improve, tuna producers are seeking ways to expand into new and emerging markets to create a range of value-added products which can provide greater opportunities to improve their economic viability.

This project is currently working to identify consumer preferences and subsequently learn how to produce, package and distribute new products to fresh markets. This work includes:

- preliminary investigations into development of value-added products,
- review of preservation and packaging options for SBT products,
- evaluation of preservation and packaging options for SBT and innovations in cold chain management,
- farm trial evaluating the impact of harvest time of SBT quality attributes and consumer preferences,
- evaluation of harvest timing benefits and impacts.

ENABLING STRATEGY IV: Build capability and capacity

The FRDC has an ongoing commitment to supporting the development of people across fishing and aquaculture. As the needs and demands of fishers and aquaculturists evolve, so will the need to invest in building capability and capacity to ensure their resilience and preparedness. The FRDC recognises that capacity will not always be equal among sectors, and will make sure it has an up-to-date understanding of each sector's needs so it can target investment in the future.

Building capacity will be an area of increased focus over the life the R&D Plan. The FRDC will explore ways to invest in and manage adoption of R&D for stakeholders across fishing and aquaculture to:

- promote a globally oriented outlook,
- encourage a culture of transparency,
- support collaboration across sectors,
- provide skills and mindsets necessary to respond to this uncertain world.

Informed by stakeholder input, FRDC investments will focus on the skills required for success in a changing world. These are likely to include:

- digital and technological proficiency (e.g. the ability to use decision-support tools to increase profits, reduce costs and enhance environmental outcomes; R&D Plan Outcome 1),
- leadership and managing change (e.g. the willingness to implement best practice in workplace safety and culture, technology adoption, environmental stewardship and animal welfare; R&D Plan Outcomes 1, 2, 3),
- conflict resolution (e.g. the expertise to engage with opposing sides on resource access and allocation issues; R&D Plan Outcome 4),
- effective communication (e.g. the ability to convey clearly the integrity and transparency of supply chains, refine sector research and management needs, and tell the stories of seafood; R&D Plan Outcome 5).
- biosecurity (e.g. the capacity to take a proactive role in detecting, and managing biosecurity risks as part of day-to-day activities; R&D Plan Outcomes 1, 2, 5),
- environmental stewardship (e.g. the ability to identify, develop and adopt practices and technologies that sustain and enhance stocks and ecosystems; R&D Plan Outcomes 1, 2, 5).

Another priority is to increase the capacity of Australia's fisheries research to benefit from collaboration.

Examples of project activities during the year

SeSAFE—Delivering industry safety through electronic learning

Project 2020-067

Sadly, each year not every worker in the Australian fishing and aquaculture industry is able to return home from sea, and the number of fatalities per 100 individuals in the seafood industry is higher than other acknowledged dangerous occupations including construction and mining. This arises from widespread acceptance of hazards and risks working at sea, both among newcomers to the industry and established operators. Despite most individuals knowing a colleague who has been injured or killed, there is a reluctance to undergo and maintain safety training.

Workplace health and safety (WHS) law recognises commercial fishing vessels as workplaces and as a result, all vessels in the industry are now required to carry on board a Safety Management System (SMS). SeSAFE training provides low-cost and convenient safety training options that include delivering:

- safety training to new, inexperienced (green) crew before they step foot on board a boat, rather than afterwards,
- safety training to experienced crew in need of refresher training,
- safety training on topics that complement an SMS and safety induction program,
- safety training on topics that may not be covered in an SMS or induction program.

Circular economy opportunities for fisheries and aquaculture in Australia

Project 2020-078

The most widespread model for resource use today is linear; take, use, waste. This model challenges the sustainability and resilience of industries by gradually depleting available resources. Conversely, a circular economy (CE) model allows management of waste losses and maximise resource recovery. Maximum value and utility of products and materials is maintained in a CE through a combination of extending product lifetimes, increasing resource use intensity and end-of-life material recycling. CE includes the idea of regenerative development, such that as the earth's resources cycle as materials through the economy they restore and enhance, rather than deplete, natural capital.

Economic opportunities of circularity are well identified, the World Economic Forum estimates global adoption of CE principles would deliver cost savings of US $1trillion dollars per annum by 2025. A recent study by the Institute for Sustainable Futures at the University of Technology Sydney estimated an Australian CE could be worth AU $2 billion by 2025.

This project is working to understand explicitly how CE may be developed within fishing and aquaculture, at what scale it makes sense to close loops, and the strategies, policy mix and incentives needed to promote circularity through the following activities:

- development of increased knowledge of how the concept of a circular economy relates to fishing and aquaculture, including downstream activities such as post-harvest processing and packaging,
- development of increased knowledge of how circular practices being applied in other sectors and industries relate to the fishing and aquaculture sectors and could be adopted by fishing and aquaculture businesses. This includes opportunities for fisheries/aquaculture industries to develop circular linkages with other marine and land-based sectors,
- identification of opportunities that are available and areas for exploration in the short, medium and longer term to progress a circular economy for fisheries and aquaculture,
- identification of barriers to adopting circularity within the fisheries/aquaculture sector and known strategies for addressing those barriers.

ENABLING STRATEGY V:
Provide foundational information and support services

Organised information provides the ability to make and justify good decisions. The FRDC delivers a range of services on its websites to support fishing and aquaculture. These track and report on:

- sustainability status of fish stocks and performance of fisheries,
- environmental impacts and risk,
- international trade and market access,
- consistency of best practice,
- consumer/community perceptions and behaviour, which inform sectors about emerging trends.

FRDC's stakeholders have emphasised the value of these services, however, there is a need to assess how well they continue to meet the needs of end users. Under the R&D Plan, the FRDC will review and improve the services it delivers, including national reporting that:

- extends beyond standard measures of economic performance (e.g. GVP) to include more informative, near-real-time economic indicators,
- integrates broader metrics that better describe and track environmental and human wellbeing across fishing and aquaculture,
- expands performance reporting of species and sectors so that consumers and the community have access to accurate information.

All FRDC-funded services are reviewed regularly and receive feedback from end users on their awareness, use and impact of these resources. This ensures FRDC's investments are deployed in areas that deliver value to stakeholders.

Providing foundational information and support services will benefit FRDC's stakeholders in the R&D Plan outcome areas, including:

- expanded environmental management to cover areas other than stock status of target species (R&D Plan Outcome 1),
- improved decision making by fishers and aquaculturists so they can get the most from their business and the products delivered (R&D Plan Outcomes 1, 2, 5),
- increased capacity for managers to consistently and adaptively inform their decision making (R&D Plan Outcomes 1, 2, 4, 5),
- greater transparency and product traceability so the community and consumers will be able to confidently make more informed choices (R&D Plan Outcome 5),
- more up-to-date information so researchers will be able to target their work to areas of need (all R&D Plan Outcomes).

Examples of project activities during the year

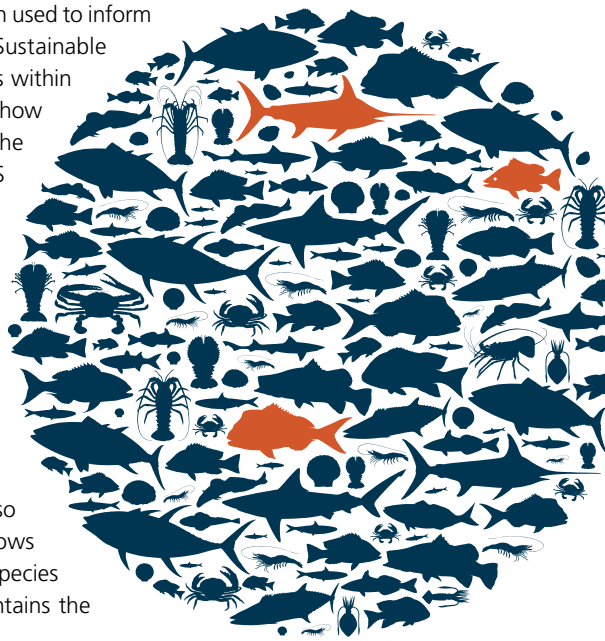
Status of Australian Fish Stocks

Project 2019-149

The SAFS reports bring together available biological, catch and effort information to determine the status of Australia's key wild catch fish stocks. The reports provide a robust source of information and a single location for stock status classifications from stocks in all jurisdictions, allowing consumers to see where their seafood comes from and if it is being sustainably caught and managed.

The 2020 reports (5th edition), the most comprehensive report on sustainability of fish stocks undertaken in Australia, provide the scientifically robust, up-to-date information on the sustainability of 148 Australian species made up of 477 individual stocks.

As of July 2018, SAFS summary information has been used to inform Australia's progress against the United Nations Sustainable Development Goal 14.4.1, proportion of fish stocks within biologically sustainable levels. The status reports show Australia's fish stocks are well managed and the majority of stocks are healthy. The results from SAFS provide a clear road map, highlighting areas that need further work, for management, industry and researchers.



The strength of the SAFS reports continues to be their foundation in science. They provide information on the sustainability of fish stocks for a wide audience that includes the public, policy makers, managers, fishers, consumers, retailers or an international audience. To make the SAFS reports more accessible to consumers, the 2020 edition is also available through a SAFS phone app. The app allows users to easily access key information about the species assessed and links back to the website, which contains the full reports.

FRDC stakeholder survey program

Project 2011-514

The FRDC's stakeholder survey program regularly checks in with stakeholders across fishing and aquaculture to measure how they feel the FRDC has been performing for them, how they feel about the future of the industry, and how they may have been impacted by recent changes in the operating environment (for example the COVID-19 pandemic). The 2020 stakeholder research provided the following key insights:

- stakeholders strongly acknowledge the importance to the industry of having an organisation like the FRDC, and the majority of stakeholders reported a positive (>7 of 10) level of satisfaction with the FRDC,
- most stakeholders who responded report a strong level of uptake for at least one engagement opportunity, but a more modest level of satisfaction (>6 of 10) with R&D investments,
- most stakeholders remained cautiously optimistic about the future of the industry, but uncertainty arising from the ongoing trade issues with China and impacts of COVID-19 are dampening confidence.

In addition to the FRDC's regular stakeholder surveys, which measure stakeholder satisfaction with the FRDC's performance, a project was undertaken by Forest Hill Consulting and completed in 2020 which reviewed the FRDC's partnership models. This was a comprehensive and independent review of the current FRDC partnership models with a view to identifying:

- how the various models are managed by the FRDC and how that management might be improved,
- the degree to which they meet stakeholder needs,
- how well they are meeting the FRDC's extension/adoption/impact goals, areas for improvement generally,
- how well they are contributing to the FRDC realising its planned outcome.

A key finding of this report was that stakeholders were only moderately positive that the FRDC delivers optimal adoption of R&D outputs, leading to a recommendation that the FRDC appoint a dedicated extension and adoption manager within the organisation. The FRDC has since appointed an extension and adoption manager to work closely with stakeholders to ensure that outputs from FRDC-funded R&D (and from elsewhere, where appropriate) are extended in a way that optimises adoption.

BENEFIT COST ANALYSIS

The following benefit cost analysis reports present the results of impact assessments of a selection of FRDC projects from the past year. They use a methodology developed by the rural RDCs.

An impact assessment of a review of industry adoption of the guidelines developed by the Aquatic Animal Welfare Group

Project: 2017-221

Title: A review of industry adoption of the guidelines developed by the Aquatic Animal Welfare Working Group through an industry workshop to determine if any gap exists in the guidelines or their adoption

Research organisation: Safe Sustainable Seafood Pty Ltd

Principal Investigator: Mark Boulter

Period of funding: 1 April 2018 to 31 December 2018

FRDC program allocation: Environment 40 per cent, Adoption 30 per cent, Communities 20 per cent, People 10 per cent

Alignment with current R&D Plan

Outcomes: Best practice in production systems 50 per cent, Community trust, respect and value 50 per cent

Enabling strategies: Strengthen adoption for transformative change 100 per cent

What the report is about

This report presents the results of an impact assessment of the FRDC investment in a project to review industry adoption of guidelines developed by the Aquatic Animal Welfare Working Group (AAWWG) through an industry workshop and determine if any gap exists in the guidelines or their adoption (project 2017-221). The investment assessed was a follow-up to an earlier investment by the AAWWG over the period 2005–13 that developed guidelines for animal welfare associated with fish and fishing.

The current project evolved from an earlier initiative of the AAWWG funded by DAWE. The AAWWG developed and started implementation of the Aquatic Animal Welfare Strategy (AAWS). This resulted in the industry developing aquatic animal welfare mechanisms for the different aquatic industry sectors. This development was reported in an FRDC publication in 2017 (FRDC 2013-049).

As a result, several projects were funded that assisted the industry to map out appropriate animal welfare mechanisms for different industry sectors. For commercial fishing and aquaculture industries the close relationship between minimising stress in fish and product quality has been well recognised. Also, the recreational sector was rapidly improving its understanding of this relationship. The ornamental sector has made improvements as well but the most effective disposal methods remained problematic.

During a FRDC workshop in 2017, participants identified a need to assess progress in the earlier developed AAWS. As a result, FRDC recognised a need to assess the outcomes of the earlier AAWS initiative by investment in a new project in relation to assessing adoption of the guidelines by industry including the following sectors:

- commercial wild-catch fishing,
- aquaculture,
- recreational fishing,
- ornamental fish keeping,
- restaurants holding live seafood.

The new project resulted in an industry and FRDC-supported workshop being funded in 2018 with the purpose of progressing priorities identified at the 2017 stakeholder workshop.

Results/key findings

The investment in this project provided an opportunity for further investment in initiatives in communication and R&D funding to improve fish welfare in a range of industry sectors. Such funding may encourage and assist the various fish sectors in providing greater attention to fish welfare issues. Already, one such project has been recently funded by FRDC.

In turn, changes in fish welfare may not only provide a valuable return to the industry via higher prices, but also may strengthen the image of the industry and reduce risk of some loss of industry social licence to operate.

The assumptions necessary to underpin the monetary analysis were difficult to develop and could not be underpinned by authoritative Australian data on the scope and value of Australians' willingness to pay for the welfare of produced/caught fish. The resulting assumptions necessarily made were conservative and the associated investment criteria provided are likely also to be conservative.

The assessment of projects such as 2017-221, and other FRDC project assessments and future investment decisions on fish welfare, would benefit from further investment in non-market valuation and willingness to pay studies carried out in an Australian context.

Outcomes	• The recommendations from the workshop were expected to be considered by FRDC, DAWE, and the peak industry bodies. • The recommendation regarding the re-establishment of an aquatic animal welfare committee has not been actioned to date (Mark Boulter, pers. comm., October 2020). • However, as a follow-up to the workshop, FRDC has invested in a new project 2019-023 that addresses some of the other recommendations. • The new project is entitled "Identifying and mitigating obstacles to uptake and adoption of aquatic animal welfare practices by the Australian fishing industry". • Specific objectives of project 2019-023 include identifying best practice and the extent of its application, factors impeding uptake of best practice, and strategies to improve uptake. • In conjunction with project 2019-023, there is potential for the workshop outputs to lead to some improved animal welfare outcomes for the Australian seafood industry, or at least for some specific sectors within the seafood industry.
Impacts	• Contribution to potential for an improvement in fish eating quality associated with some sectors of Australian seafood production. • Contribution to the potential for future fish welfare improvements associated with some sectors of Australian seafood production. • Potential for some contribution to increased research capability and capacity with respect to understanding factors affecting fish welfare. • Contribution to the potential for increased security of the social licence to operate for some sectors of Australian seafood production.

Public versus private impacts

The major potential impacts identified in this evaluation are related to improved animal welfare, and as such can be considered public benefits. These potential animal welfare impacts may apply to some individual seafood sectors. Other potential public benefits may be delivered via any increased research capability from increased R&D funding that may be made as a result of the project.

Due to the association between fish welfare outcomes and fish-eating quality, there are likely to be some spillover impacts to some private seafood sectors via this association. Some private impacts could arise in the form of any increased security of the social licence to maintain fishing in some situations.

TRIPLE BOTTOM LINE CATEGORIES OF PRINCIPAL IMPACTS FROM PROJECT 2017-221

Economic	• Potential for an improvement in fish eating quality associated with some sectors of Australian seafood production via the provision of increased attention by industry to fish welfare.
Environmental	• Nil
Social	• Potential for future fish welfare improvements associated with some sectors of Australian seafood production. • Potential for some contribution to increased research capability and capacity with respect to understanding factors affecting fish welfare. • Potential contribution to increased security of the social licence for some sectors of Australian seafood production.

Conclusions

The findings and recommendations from project 2017-221 are likely to lead to greater awareness of issues associated with fish welfare from both a community interest viewpoint as well as from an industry perspective including both wild-catch and aquaculture sectors.

Funding for the small 2017-221 project over the two years totalled $0.15 million (present value terms) and, given the assumptions made, produced estimated total expected benefits of $0.48 million (present value terms). This gave a net present value of $0.33 million, a benefit-cost ratio of 3.28 to 1, an internal rate of return of 13.8 per cent and a modified internal rate of return of 9.4 per cent.

An impact assessment of the right conversations: Building industry engagement capacity

Project: 2017-133

Title: The right conversations: Building industry engagement capacity for socially supported fisheries and aquaculture

Research organisation: ENVision Environmental Consulting and KAL Analysis Pty Ltd

Principal investigators: Nicki Mazur and Kate Brooks

Period of funding: 15 December 2017 to 30 June 2018

FRDC program allocation: Adoption 100 per cent

Alignment with current R&D Plan

Outcomes: Growth for enduring prosperity 50 per cent, A culture that is inclusive and forward thinking 50 per cent

Enabling strategies: Build capability and capacity 100 per cent

What the report is about

Australian fishing grounds are an example of a common resource good that has multiple uses and users. Australian fishing grounds are therefore regulated by government to accommodate such multiple usages and to address any ensuing conflicts. The Australian fishing industry and the associated wider seafood industry are generally well supported by the Australian community due to the trust, in part, generated by government regulations in place and some knowledge of the associated best practices employed by the industry.

However, it has been recognised by the FRDC that the trust built has to be continuously renewed and expanded; the associated FRDC strategy has been evident by funding of past projects aimed at building and demonstrating industry capacity for engagement with both the community and a diverse set of stakeholders.

Some of the reasons limiting the extent of industry engagement with stakeholders/communities potentially included:

- the perceived lack of relevance of the need for engagement,
- engagement being perceived as marketing or product promotion,
- a lack of skills in engagement and when alternative engagement practices could be used,
- a lack of knowledge of the effectiveness of engagement strategies.

In summary, the investment in project 2017-133 in building capacity was to strengthen the representation of the interests of the industry to government, interest groups, the community and to consumers. The investment was considered to be required to address a priority activity for the commercial industry (wild-catch and aquaculture), as well as other sectors such as recreational and Indigenous fishers.

Results/key findings

Outcomes	• As a result of project 2017-133 and its recommendations, the FRDC Human Dimensions Research subprogram subsequently has invested in two further projects to address the recommendations, and the FRDC has directly invested in a third project, as follows (Emily Ogier, pers. comm., 2021). • The FRDC investments in this subprogram include: – project 2018-201 FRDC Community Engagement Strategy Evaluation Framework (this project has just been finalised). – project 2019-074 Engagement for success: Evaluation of engagement events to inform industry management strategies. • This project is applying the monitoring and evaluation framework developed in project 2018-201 and developing resources to support designing and implementing best practice community engagement. • The FRDC investment is: – FRDC 2019-042 A framework for advancing social acceptance of the agriculture sector in Australia—A joint RDC initiative • The new engagement framework is expected to encompass industry organisations as well as the grass roots of fisheries industries. • The new framework is expected to raise the awareness, use and evaluation of best management engagement processes and practices to build community trust. • Potentially, this is expected to lead to a higher level of effective and informative industry engagement with community stakeholders including consumers, governments and environmental non-government organisations. • In turn, this outcome is expected to result in an increased level of community understanding, trust, and appreciation of the responsible management of Australian fishery operations.
Impacts	• A contribution by FRDC project 2017-133 to a potentially increased security of the social licence for some sectors of Australian seafood production. • Potentially, increased regional community wellbeing from maintained or increased spillover benefits from a reduction in risk of loss of social licence. • Potential for some contribution to increased industry capability and capacity with respect to use of best management engagement practices to build community trust.

Public versus private impacts

The major potential impact identified in this evaluation is related to a contribution to the increased level of social support for fisheries, and as such can be considered a public benefit. This benefit is also associated with a private benefit in that, as a result, the industry will gain due to an avoided loss of part of its current social licence to operate.

Other potential public benefit contributions that may be delivered would include any increased industry capability and capacity that could be built as a result of the project, as well as the avoided potential loss of regional community spill over benefits that may arise due to the maintenance of the social licence to fish as outlined above.

TRIPLE BOTTOM LINE CATEGORIES OF PRINCIPAL IMPACTS FROM PROJECT 2017-133

Economic	• Nil
Environmental	• Nil
Social	• A contribution by project 2017-133 to a potentially increased security of the social licence for some sectors of Australian seafood production. • Potentially, increased regional community wellbeing from maintained or increased spillover benefits from a reduction in risk of loss of social licence. • Potential for some contribution to increased industry capability and capacity with respect to use of best management engagement practices to build community trust.

Conclusions

The investment in this project has contributed to an increased awareness of the importance of best management engagement practices by industry to build community trust. The project has enabled the future development of a higher level of effective and informative industry engagement with community stakeholders including consumers, governments and environmental non-government organisations.

However, the delivery of this impact has required further investment in developing, communicating and testing a suitable framework for delivering engagement processes to industry (including at grass roots level). This further investment potentially will result in an increase in the use of effective engagement practices leading in turn to an increase in the level of community understanding and appreciation of the responsible management of Australian fishery operations.

Funding for the one-year project totalled just over $90,000 (present value terms) and, given the assumptions made, will have produced estimated total expected benefits of $259,000 (present value terms). This gave a net present value of $169,000, a benefit-cost ratio of 2.86 to 1, an internal rate of return of 12.5 per cent and a modified internal rate of return of 9.0 per cent.

An impact assessment of developing a new strategic plan for the Australian wild-harvest abalone industry

Project: 2017-124

Title: Developing a new five-year strategic plan for RD&E investment in the Australian wild-harvest abalone industry

RD&E: research, development and extension

Research organisation: Abalone Council of Australia, in conjunction with Ridge Partners

Principal investigator: Ewan Colquhoun, Ridge Partners

Period of funding: November 2017 to October 2018

FRDC program allocation: Industry 100 per cent

Alignment with current R&D Plan

Outcomes: Growth for enduring prosperity 80 per cent, A culture that is inclusive and forward thinking 20 per cent

Enabling strategies: n/a 100 per cent

What the report is about

This report presents the results of an impact assessment of FRDC investment in a project to address the development of a new five-year strategic plan for RD&E investment in the Australian wild-harvest abalone industry. The plan development was undertaken by the Abalone Council of Australia in conjunction with Ridge Partners.

Results/key findings

The major output from the project was a detailed strategic plan for the wild-harvest abalone industry. The plan is already having an impact on assisting the abalone industry and FRDC with addressing research investment, as well as with other strategies addressing innovation, cooperation and coordination along the various industry supply chains.

Outcomes/ potential outcomes	• Potential for change to more detailed and targeted future abalone RD&E investments. • Potential changes in domestic and export market competitiveness (e.g. via increased market research, improved product quality, additional market innovation, branding, and product development, and greater collaboration between and within supply chains). • Potential fisher and supply chain management improvements (e.g. increased adoption of industry best practice, stock enhancement, disease management, encouragement of long term and sustainable production, improved harvest strategies, improved fisher health and safety). • Potential for enhanced environmental management via: – greater understanding of the impacts of climate change with adjustment to fisheries management accordingly, – improved understanding of high-yield zones and consideration of enhancement options, – improved understanding of disease management, – exploration of third party accreditation, – targeting sustainability improvements with the aim of having all abalone stocks in the green 'sustainable' status (as to be reported by SAFS in 2020), – a greater emphasis on predictive indicators for stock management and harvest strategies, – a rebuild of the state reporting and compliance systems using modern electronic technologies; progress is expected as innovative and new in-water technologies were a priority for some state fishery managers (Ewan Colquhoun, pers. comm., 2020). • Development of more effective communication strategies with internal and external stakeholders. • Maintenance and enhancement of skills and capability of those involved in the Australian abalone industry (e.g. leadership succession, skills training). • An increase in positive engagement with Australian fisheries managers and Australian communities (e.g. reporting via SAFS); this outcome is most likely as sustainability improvement is perceived as a critical issue by the industry (Ewan Colquhoun, pers. comm., 2020).
Impacts/ potential impacts	• Improved future abalone RD&E resource allocation. • Increased profitability for Australian abalone fishers and their supply chains via increased or sustained market prices and lowered costs. • Improved environmental outcomes through improved abalone fisheries management. • Reduced risk of loss of social licence for the Australian abalone industry. • Enhanced industry skills including leadership capability.

Public versus private impacts

Most impacts identified in this evaluation are related to effective management of the Australian wild-catch abalone industry. Both direct and indirect private and public impacts have been, and are being, delivered by project 2017-124. Private impacts will include those derived by wild-catch abalone businesses and their supply chains. Some public impacts will also be delivered including those that protect and conserve the existing abalone habitats, as well as spillover to regional communities that benefit from enhanced profitability of abalone supply chains.

Impacts overseas

There are unlikely to be any direct impacts to overseas abalone producing industries as the investment directly targeted planning for the Australian abalone industry. However, collaboration with New Zealand on various issues may lead to some spillover benefits to New Zealand aligned industries.

TRIPLE BOTTOM LINE CATEGORIES OF PRINCIPAL IMPACTS FROM PROJECT 2017-124

Economic	• Potentially, improved future abalone research resource allocation. • Potentially, increased profitability for Australian abalone fishers and their supply chains via increased or sustained market prices and lowered costs.
Environmental	• Improved environmental management.
Social	• Reduced risk of loss of social licence for the Australian abalone industry. • Enhanced industry skills including enhanced leadership capability.

Conclusions

The overall finding of the project investment was that the strategic plan developed by the abalone wild-harvest industry is providing strong guidance for industry in how to increase productivity and profitability via innovation and improved management and marketing.

In addition, the plan will provide greater confidence in addressing industry RD&E priorities for future RD&E investment. Potential projects for research funding will be selected more in line with industry priorities and therefore the ensuing research outputs will have greater industry relevance and associated adoption. Overall, this can be interpreted as RD&E investment producing more useful outputs with less resource input.

Funding for the project over the two years totalled $0.08 million (present value terms) and produced estimated total expected benefits of $0.34 million (present value terms). This gave a net present value of $0.26 million, a benefit-cost ratio of 4.0 to 1, an internal rate of return of 48.2 per cent and a modified internal rate of return of 10.2 per cent.

An impact assessment of SAFS reports 2018

Project: 2017-100

Title: Status of Australian Fish Stocks (SAFS) reports 2018, and further development of the SAFS production and dissemination system

Research organisation: FRDC

Principal investigator: Carolyn Stewardson, FRDC

Period of funding: September 2017 to March 2019

FRDC program allocation: Environment 100 per cent

Alignment with current R&D Plan

Outcomes: Growth for enduring prosperity 100 per cent

Enabling strategies: Provide foundational information and support 100 per cent

What the report is about

This report presents the results of an impact assessment of the FRDC investment in a project to update the SAFS reports, and the further development of the SAFS production and dissemination system. The SAFS reports are a series of assessments of the biological sustainability of a broad range of wild-caught fish stocks. The assessments are made against a nationally agreed framework and examine whether the abundance of fish and the level of harvest from the stock are sustainable. The reports commenced being assembled in 2012 and have been produced every two years. The 2018 report examined 120 fish species, a high proportion of all species that are commercially fished in Australia.

Results/key findings

The major output from the project was the 2018 SAFS report that is available on the SAFS website (www.fish.gov.au). The report continues the biennial series of fish stock assessments to provide a time-series since 2012.

The overall finding was that Australia is effectively managing its fisheries sustainably. This finding will likely generate support for continued commercial fishing arrangements through improved targeting of future R&D investment, improved effectiveness of the management of fisheries in Australia, and a continuing positive image of fisheries environmental management both in Australia and overseas.

Prospective users of the improved synthesised information include the Australian and state fisheries agencies who manage Australian commercial fisheries and who were also involved in producing the 2018 SAFS assessment. Furthermore, domestically the 2018 SAFS communication impact has now been extended to pathways that promote consumer health impacts regarding fish via dieticians and home economics in schools.

Internationally, the summary information produced in the 2018 SAFS report has been used to inform Australia's progress against the United Nations Sustainable Development Goal 14.4.1, proportion of fish stocks within biologically sustainable levels.

Outcomes	• As of July 2018, SAFS summary information has been used to inform Australia's progress against the United Nations Sustainable Development Goal 14.4.1, proportion of fish stocks within biologically sustainable levels. The United Nations Sustainability Goals are the blueprint to achieve a better and more sustainable future for all (Carolyn Stewardson, pers. comm., 2020). • The project process continued to encourage improved information transfer between jurisdictions and researchers due to the high level of communication throughout the project; in turn, this will assist in future SAFS reports and individual jurisdictional reports. • Through synthesising reports across jurisdictions, the 2018 SAFS reports have continued to develop improved coverage and reliability of fish stock data as well as encouraging increased use of the data. • The project has resulted in improved priority setting for investment in future fisheries research. • There potentially has been increased communication and harmonisation of reporting between fisheries managers due to the process undertaken in compiling the SAFS reports. • The 2018 SAFS report has continued to maintain the confidence by the Australian community that Australian fish stocks are being well managed. • Prospective users of the 2018 SAFS report include Australian fisheries managers (e.g. for management, policy and communication purposes). • Other users of the report include environmental non-government organisations. • The project worked directly with health professional sector; for example receiving endorsements from the Dieticians Association of Australia http://www.fishfiles.com.au/experts/healthprofessionals/resources. • The project also worked directly with the education sector resulting in SAFS information and seafood sustainability messages in the Home Economics Institute of Australia textbook (Nutrition—The inside story, third edition, 2020).
Impacts	• Potentially increased efficiency in R&D resource allocation to at-risk fish species or cross jurisdictional species and environmentally limited stocks, as such stocks now can be better identified in a national context. • Increased effectiveness and harmonisation of state and Commonwealth Government reporting and management of fisheries. The improved information on fish stocks and their sustainability in a national context potentially will drive improved management decisions and policies by individual jurisdictions. • A potential increase in the future ecological sustainability of Australian fish stocks, due to increased knowledge sharing and management processes, and more targeted research investment. • An increase in knowledge and awareness of consumer health impacts from fish via dieticians and home economics pathways. • Continued Australian support for the current social licence to fish and continued sustainable commercial access to Australian fisheries, as well as for recreational and Indigenous purposes. • Contribution/endorsement of Australia's image world-wide as being an effective fisheries manager.

Public versus private impacts

The investment resulted in both private and public impacts. Public impacts include the contribution of the investment to environmental integrity, as well as the increased efficiency of research resources being used for at-risk and cross-jurisdictional species. Another public impact is the improved management of fisheries from cross-jurisdictional exchanges and learnings. The predominant private impact from the project is via the evidence presented that will contribute to the continued commercial access to fisheries; other social impacts include consumer health impacts and Australia's international reputation as an effective fisheries manager.

Impacts overseas

There are no major benefits to overseas parties from this project. There may be some minor benefits in terms of spill over to global reporting of fish stocks and setting an example to other nations on how to report fish stocks in a multi-jurisdictional environment.

TRIPLE BOTTOM LINE CATEGORIES OF PRINCIPAL IMPACTS FROM PROJECT 2017-100

Economic	• Potentially increased efficiency in R&D resource allocation to at-risk fish species or cross-jurisdictional species and environmentally limited stocks, as such stocks now can be better identified in a national context. • Increased effectiveness and harmonisation of state and Commonwealth Government reporting and management of fisheries. The improved information on fish stocks and their sustainability in a national context potentially will drive improved management decisions and policies by individual jurisdictions.
Environmental	• A potential increase in the future ecological sustainability of Australian fish stocks, due to increased knowledge sharing and management processes, and more targeted research investment.
Social	• Improved perception of sustainability of wild-catch fisheries to commercial buyers, non-government organisations, and the general community including fish consumers due to the independent scientific assessment, with an associated lowered risk to the social licence to fish. • An increase in knowledge and awareness of consumer health impacts from fish via dieticians and home economics pathways. • Contribution/endorsement of Australia's image world-wide as being an effective fisheries manager.

Conclusions

The overall finding of the investment in SAFS 2018 was that Australia is effectively managing its fisheries sustainably. This finding will likely generate support for continued commercial fishing arrangements through improved targeting of future R&D investment, improved effectiveness of fisheries management and a continuing positive image of fisheries environmental management in Australia and overseas.

Funding for the project over the two years totalled $2.30 million (present value terms) and produced estimated total expected benefits of $4.26 million (present value terms). This gave a net present value of $1.96 million, a benefit-cost ratio of 1.85 to 1, an internal rate of return of 61 per cent and a modified internal rate of return of 7.9 per cent. Confidence in both the combined coverage of impacts that were valued, and the assumptions made for their valuation, were both rated as medium.

An impact assessment of developing tools to inform management risk and improve recreational fishery monitoring

Project: 2013-201

Title: Developing tools to inform management risk and improve recreational fishery monitoring for a complex multi-sector, multi-jurisdiction fishery: the Western Victorian Snapper Stock

Research organisation: Victorian Fisheries Authority

Principal investigator: Paul Hamer, Victorian Fisheries Authority

Period of funding: July 2013 to May 2019

FRDC program allocation: Industry 60 per cent, Environment 40 per cent

Alignment with current R&D Plan

Outcomes: Growth for enduring prosperity 80 per cent, Fair and secure access to aquatic resources 20 per cent

Enabling strategies: Drive digitisation and advanced analytics 100 per cent

What the report is about

This report presents the results of an impact assessment of the FRDC investment in a project to develop a transparent approach to harvest strategy management decisions that provided for both biological sustainability and certainty of access. The project arose from the shared nature of a fisheries resource (Western Victorian Snapper Stock (WVSS)) that needed to address multi-sector fishing pressures (e.g. recreational and commercial) as well as being subject to multi-jurisdictional management arrangements (Victoria, South Australia and the Commonwealth). In addition, fluctuating recruitment of the fisheries resource increased the complexity of developing appropriate management arrangements that involved all sectors and jurisdictions.

Results/key findings

The major outputs from the project included:

- The potential for improved future monitoring of recreational boat fishing effort in Port Phillip Bay,
- Progress towards the future development of a 'harvest index' that is representative of variation in recreational harvest pressure across the fishery.
- Progress towards a management strategy evaluation model and its testing on relevant scenarios of recruitment, objectives and Harvest Control Rules.
- Progress towards an approach to the provision of quantitative predictions of the impacts of management options such as size and bag limit changes on recreational Snapper catches.
- A framework for guiding the cross-jurisdictional assessment and collaborative management of the WVSS across the Victorian, South Australian and Commonwealth jurisdictions, including a memorandum of understanding (MOU) to guide the collaboration of the Victorian and South Australian jurisdictions on stock assessment and management issues.

The project represents a significant contribution to more effective future coordination of WVSS management by the various state and Commonwealth fisheries agencies. Also, from the perspective of the Victorian Fisheries Authority, the project will potentially contribute to a reduced risk of a future reduction in Victorian recreational fisher experience due to improved monitoring and management of Snapper recreational fishing.

Outcomes	• The boat ramp camera surveillance system was successfully developed. It was estimated that the implementation of the ramp camera surveillance system would have a total annual cost of less than $14,000 including depreciation. • The boat ramp camera surveillance system has now been implemented as the system has continued since the project completion. In addition, cameras have also been installed at around 30 other boat ramps throughout the state with around 20 more to be installed in 2021 (Justin Bell, pers. comm., 2021). • The integration of the camera data with the creel data for other access points to create a harvest index will allow the development of a harvest index representative of variation in recreational harvest pressure across the fishery; this will be useful for WVSS assessments and any potential harvest management changes. • Given this major expansion of cameras, a large amount of data is necessary to replicate the calibration of each camera. The data are currently being collected and will continue to be collected as new cameras are being installed; there are still around 20 cameras to be installed (Justin Bell, pers. comm. 2021). • It is noted that due to band width and server limitations it is only possible to collect the images required for calibration from several ramps at a time, and this has to be done over several months incorporating all levels of 'busyness'. To date, data for about half of the cameras have been assembled (Justin Bell, pers. comm., 2021). • The SnapMSE (the management planning tool) has been adjusted to accommodate stakeholder input. The MSE results have been presented to the snapper management reference group that has been established to guide implementation of a recreational Snapper harvest strategy for the WVSS. • During the reporting period, the group met twice, which included the provision of the MSE and other results from this project. As more information on recreational harvest becomes available through the use of the boat ramp cameras it will be possible to re-parameterise the operating model of the MSE tool, and rerun a variety of scenarios to present to the group. This will be particularly interesting now that a large year class is about to enter the fishery as it is an opportunity to manage the future of the fishery with things beginning positively, rather than the usual situation where these things are implemented due to depleted stocks (Justin Bell, pers. comm., 2021). • It should be noted that the WVSS had the highest recruitment event recorded in ~30 years in 2018 so the Western Snapper stock will be relatively plentiful for the foreseeable future. In many respects, this has minimised the need to act rapidly with the results of this FRDC project. • The MSE model will become increasingly useful as the harvest strategy performance indicators are formalised; this is because it allows visualisation of how varying levels of fishing mortality will affect the stock, noting that SnapMat is used to inform fishing mortality.

Outcomes (continued)	• Also, SnapMat was used to assess bag and size limits for Black Bream in Gippsland Lakes and Sand Flathead (state-wide) as the input data are the same (e.g. creel survey data). Both of these species/stocks had concerns about the level of fishing mortality and the model was thus used to inform regulatory changes aimed at reducing fishing mortality to levels that should aid in recovery of the stocks (Justin Bell, pers. comm., 2021). • Data from the Victorian pre-recruit surveys have been shared with the South Australian Department of Primary Industries and Regions (PIRSA) to allow PIRSA to conduct a stock assessment of their proportion of the shared WVSS. The MOU between the states was formalised in 2020 with a total allowable catch (TAC) for South Australia (both commercial and recreational) allocated. This has meant that the Snapper fishery for South Australia has not been completely closed and there has been a transfer of effort to the region of the state that comprises the WVSS, within the TAC bounds of the MOU. Victoria currently conducts the stock assessment for the WVSS, incorporating catch information from South Australia (i.e. data sharing), Victoria and the Commonwealth, which is used to inform the SAFS (Justin Bell, pers. comm., 2021) • In addition, the Victorian Fisheries Authority has entered into a collaborative project with Marine Safety Victoria in which boat ramp cameras have been installed in many other locations throughout the state. The methods developed within this FRDC project (activity sensing cameras) will be used to greatly increase the amount of information being obtained for the WVSS by incorporating all of the fishing effort that encompasses this stock. It will also enable similar information to be gathered about a range of other important recreational fishing species. • The implementation of the camera technology developed in this project was seen as beneficial to Marine Safety Victoria who advise the public how busy boat ramps are, along with informing them of weather and safety at the time, in an effort to improve boating experience and safety. Thus, while the technology to estimate boat traffic effort was developed with fisheries sustainability in mind, it is now being used for experiential and safety purposes, along with generation of data for evaluating fisheries sustainability for both the WVSS and a range of other species (e.g. Black Bream, King George Whiting, Sand Flathead, among others) (Justin Bell, pers. comm., 2021). • One other outcome is that in order to get the MSE component of the project operational, a fully integrated population dynamic stock assessment model was created for the WVSS. This will be very valuable for assessment purposes in future, particularly if the stock looks to be depleting following the recent high recruitment. • SnapMat has proved very useful for changing size/bag limits in a range of fisheries and will continue to do so. The cameras will provide ongoing benefit, for the WVSS, other stocks, and boating in general. They have also been used by both the Fisheries Officers and Victorian Police for law enforcement purposes (Justin Bell, pers. comm., 2021).

Impacts	• More effective coordination of WVSS management (improved monitoring and management adjustments of Snapper recreational fishing) by the state fisheries agencies, resulting in a lowered future risk of a reduction in Victorian Snapper recreational fisher experience. • Enhanced sustainable management for a number of other recreational fish species. • Contribution to a more informed SAFS. • Contribution to increased capability and capacity with respect to fisheries management including catch assessment, population modelling, harvest control rules and policies, and joint fishery management activities and coordination where stocks are shared. • Improved law enforcement and enhanced safety for fishers.

Public versus private impacts

Most impacts identified in this evaluation are related predominantly to public impacts associated with Victorian recreational fishing for Snapper, as well as for some other species sought for recreational purposes. These impacts will include a contribution to the sustainability of recreational fisher experiences associated with both the Victorian and South Australian Snapper and some other recreational fisheries in Victoria.

Impacts overseas

The management methods pursued may provide a model that potentially could be used by other countries in assessing their recreational fisheries management.

TRIPLE BOTTOM LINE CATEGORIES OF PRINCIPAL IMPACTS FROM PROJECT 2013-201

Economic	• Reduced risk of a future reduction in Victoria's recreational fisher experience with improved monitoring and management of Snapper recreational fishing. • Enhanced sustainable management for a number of other recreational fish species.
Environmental	• Contribution to a more informed SAFS.
Social	• Contribution to increased capability and capacity with respect to fisheries management including catch assessment, population modelling, harvest control rules and policies, and joint fishery management activities and coordination where stocks are shared. • Improved fisheries law enforcement and enhanced safety for fishers.

Conclusions

The overall finding of the project investment was that the investment has delivered potential improvements to the management of Snapper and will enhance the future experience of recreational fishers in Port Phillip Bay. Such improvements in fishing experience would be due to the potential future implementation of future management options that have been delivered by the tools developed by the project.

Funding for the project over the six years totalled $0.91 million (present value terms) and produced estimated total expected benefits of $4.22 million (present value terms). This gave a net present value of $3.31 million, a benefit-cost ratio of 4.6 to 1, an internal rate of return of 19.1 per cent and a modified internal rate of return of 10.7 per cent. However, as a number of other potential impacts were not valued in monetary terms, the investment criteria as provided by the valued benefits are likely to be an underestimate of the total value of the project investment.

SERVICES

TRADE

FRDC continued to provide updates and advice to stakeholders regarding Australian seafood trade and market access via the FRDC website (https://www.frdc.com.au/services/australian-seafood-trade-and-market-access) including the Australian Government's Agricultural Trade and Market Access Cooperation Program.

Trade statistics

International trade and export are valuable activities for many in the Australian seafood industry. Due to COVID-19 and other trade disruptions, exports reduced by approximately 10 per cent from 2019–20 values. The FRDC trade database continues to be updated monthly, providing access to the latest import and exports trade data from the Australian Bureau of Statistics. The database can be filtered allowing in-depth analysis of import and export trends based on key attributes—country, state, product type. Export codes have been grouped together in logical blocks for ease of use.

Visit the portal at www.frdc.com.au/Services/Trade-data.

Trade Bursary Program

Stakeholder involvement in trade expos was again affected by the COVID-19 pandemic that has continued to impact FRDC trade bursaries due to rising health concerns and travel restrictions.

Seafood Trade Advisory Group and SafeFish

The FRDC-funded Seafood Trade Advisory Group (STAG) project continued to provide advice and updates on market conditions, primarily related to China, and the International Freight Assistance Mechanism (IFAM) program as the outbreak of COVID-19 and other disruptions continued to affect the Australian seafood industry. The STAG also provided information and data to assist industry participate in the IFAM process. Additionally, FRDC's SafeFish project (2018-004 SafeFish 2018 to 2021) continued to provide technical assistance regarding food safety related issues including for trade.

Free trade agreements

The seafood industry continues to engage in Australia's negotiations with other countries regarding free trade agreements which included the recent free trade agreement with the United Kingdom. The FRDC assisted through the coordination of input from fishing and aquaculture industry members through project 2019-195 Seafood Industry Engagement in the Australia—United Kingdom Free Trade Agreement.

STANDARDS

Standards organisation

The FRDC is approved by the Accreditation Board for Standards Development Organisations as a Standards Development Organisation AS/NZS ISO 9001:2015 for quality and undertakes internal and external audits annually with a recertification audit of its quality system each three years.

The FRDC carried out both an internal and an external three-year re-accreditation audit in October 2019. The Standards Development and Accreditation Committee approved the reaccreditation of the FRDC at their meeting on 6 February 2020.

The FRDC has continued to work with industry partners throughout the year looking at a number of potential options to create future fisheries-related standards. Over the coming year there will be more work to formalise and finalise the groundwork already completed by a number of research projects. Standards being developed include responsible fishing, science integrity standards, and fisheries management standards. Further information is available at www.seafoodstandards.com.au

Australian Standard for Fish Names AS 5300

The Fish Names Committee held online meetings on 14 October 2020 and 30 April 2021, with an additional out-of-session meeting on 21 July 2020.

Having the Australian Fish Names standard in place increases consumer confidence in the seafood they buy because no matter where they purchase their seafood, they know it will be called by the same name. Standard names also allow more efficient and effective management of food safety and reduces the potential for misleading and deceptive conduct as more accurate trade descriptors can be used. The Australian Fish Names Standard has a searchable online database at www.fishnames.com.au

FISH NAMES COMMITTEE MEMBERSHIP

Independent Chair	Gus Dannoun
Fisheries agencies appointee as nominated by the Australian Fisheries Management Forum	Jason Gibson
Expert member (Seafood marketing and fish and invertebrates taxonomy)	Don Tuma (resigned)
Expert member (hospitality)	Glenn Austin
Expert member (fish taxonomy)	Gordon Yearsley
Expert member (seafood processors)	Anthony Mercer
CSIRO fish taxonomy representative	Karen Gowlett-Holmes
Australian seafood industry appointee	Renee Pearce
Recreational fishing appointee	Russell Conway
Expert member (seafood imports)	Mark Boulter
Expert member (major supermarkets)	Hamish Allen
Expert member (seafood marketing)	Anni Conn
DAWE representative	Lisa McKenzie
Expert members (Master Fish Merchants' Association of Australia representatives)	Kerry Strangas/ Michael Kitchener

OBSERVERS AND NON-VOTING MEMBERS

Standards Development Organisation representative	Dr Patrick Hone
Standards Development Organisation representative	Carolyn Stewardson

PROJECT MANAGER AND ADMINISTRATION

Project Manager	Alan Snow
Co-Investigator	Meaghan Dodd

Australian Standard for Aquatic Plant Names AS 5301

The first version of AS 5301 the Australian Standard for Aquatic Plant Names was published in November 2020 (see www.aquaticplantnames.com.au). Plants from marine and freshwater environments are covered by this standard, irrespective of the country of origin. The Aquatic Plant Names Standard Reference Body held online meetings on 26 August 2020 and 27 April 2021. The final report 2017-212: Development and ongoing maintenance of an Australian Standard for aquatic plant names was released April 2021 (see 2017-212 available at frdc.com.au).

MEMBERSHIP OF THE AQUATIC PLANT NAMES

Independent Chair	Gus Yearsley
CSIRO and Codes for Australian Aquatic Biota (CAAB) database	Karen Gowlett-Holmes
Industry	James Ashmore
Industry	Pia Winberg
Industry	Russell Glover
Hospitality	Cassandra Austin
Academia	Alecia Bellgrove
Academia	John Huisman

OBSERVERS AND NON-VOTING MEMBERS

FRDC	Patrick Hone
FRDC	Nicole Stubing

PROJECT MANAGER AND ADMINISTRATION

Co-project Manager	Meaghan Dodd
Co-project Manager	Alan Snow

INFORMATION AND COMMUNICATIONS TECHNOLOGY

The aspirational nature of the FRDC's R&D Plan 2020–25 necessitates significant changes to internal systems to help support organisational business processes. The decision was made to review every component of the FRDC's systems to ensure that if changes are required they can be addressed as quickly as possible, to ensure that value derived from the changes is able to be delivered early and in a continuous manner. That meant upgrading the operating and platform infrastructure to receive security, reliability gains as well as access to new features.

FishNet

The FRDC's ICT team has updated the design and functionality of the online application portal FishNet. These changes help position FishNet as the primary interface for FRDC clients—i.e. a one-stop-shop to request funds, submit project reporting and peer reviews, request variations, and undertake project administration as well as updating their preferences on how FRDC communicates with them.

Cyber security

The ICT team has also been working on FRDC's cyber security posture. For this to be robust, it starts with people. Hence the ICT team has been running cyber security awareness training, regular communications with regards to ongoing threats and increased collaboration with the Australian Cyber Security Centre. Additionally, the FRDC's ICT team ensures that it is continuously reviewing information technology (IT) assets and attack surfaces, reviewing ability to detect and contain attacks as well as ability to react to, and recover from, attacks.

CORPORATE COMMUNICATIONS

During the past year, the FRDC communications team has continued to engage with stakeholders and its wider audience through media releases, digital communications, *FISH* magazine and newsletters by means of electronic direct mail (EDM). The organisation's social media pages have also continued to provide a touchstone for stakeholders, and a platform for FRDC to respond to enquiries and share news. The COVID-19 pandemic has meant less opportunity for communications collateral and events, although there has been greater engagement with stakeholders through virtual means. For example, the FRDC has supported and presented at several of the Sundowner Sessions hosted by the Queensland Seafood Marketing Association.

The launch of a new R&D Plan 2020–25 has provided opportunity for the communications team to revise its products in order to communicate the goals and activities associated with the plan. Several features have been added to editions of *FISH* magazine and EDMs to communicate the connection between activities and investments to the outcomes listed in the plan. The plan has also prompted a new corporate look which provides an interface to the organisation and the outside world. This includes new templates for e-mail newsletters, PowerPoint presentations, letter templates, business cards and corporate wear.

COVID-19 communications update

During 2020, the FRDC increased the frequency of its regular communication, modifying the schedule of *FISH* magazine from quarterly to include two shorter, timelier COVID-19 relevant editions. The content of the magazine was also tweaked to provide relevant information to FRDC stakeholders in relation to the cascading impacts of this challenging period, as well as illustrate the impacts on FRDC stakeholders through coverage in the magazine. To ensure the content the FRDC provides is timely and relevant to its audience, the FRDC has established a feedback page for stakeholders to use https://www.frdc.com.au/media-publications/fish/Feedback.

Message in a bottle

The FRDC's communications team started sending out a weekly e-newsletter "Message in a bottle" as the pandemic hit. The newsletter was started as a way of keeping stakeholders informed of opportunities and assistance available to them during these difficult times and has now evolved to span a wider range of topics. Evaluation of engagement is leading to greater refinement of the newsletter and a new look has been developed to align with the new corporate style.

Digital media and website redevelopment

A major endeavour over the last year has been the development of a new look for www.frdc.com.au. The project has involved extensive stakeholder consultation and research into the user experience to understand their needs and the reasons that people visit FRDC's website. The new website went live in August 2021 and uses extensive tagging to curate content and improve the search function. The home page and a new knowledge hub will highlight science communications material from FRDC's publications and researcher projects. All finalised FRDC project reports are available from the website—www.frdc.com.au.

Communications strategy and brand development

With limited capacity in the organisation, there is a need to refine FRDC's communication activities for greater impact; to consolidate and be more strategic, focusing only on those activities that achieve greater reach and engagement. The organisation has been going through a process of goal refinement, to help define and refine the organisation's brand. This has resulted in a clearer definition of the role of FRDC's communication activities and includes:

- to create awareness of FRDC's research and other activities among its stakeholders,
- for FRDC to be viewed as a trusted science organisation and a resource for science information related to fishing and aquaculture in Australia.

The FRDC communications team is increasing its use of metrics to monitor and evaluate the success of its communications activities.

Events

The World Fisheries Congress 2021 (WFC2021) is set to take place in Adelaide from 20 to 24 September 2021. As a major sponsor, the FRDC's communications team has promoted the congress in the organisation's publications and engaged with the WFC2021 communications working group.

Delegates have been invited to participate in an online program so the congress can continue to connect the global fisheries and aquaculture community to discuss the sustainable development of the world's oceans, lakes, estuaries and rivers.

Media issues

The year has seen a number of issues related to the sustainability of fishing and aquaculture gain widespread public attention and airing in the media both in Australia and globally. Over the past year FRDC has positioned itself as a source of independent science, as a provider of reliable information rather than an advocate for any particular viewpoint.

The FRDC engaged with the media throughout the year fielding enquiries and sending out media releases on a range of issues. Of these, the National Carp Control Plan has continued to be of interest to the media, along with shark depredation, trade issues, and threatened and endangered species.

In the latter half of the financial year two further issues gained widespread attention:

- *Seaspiracy* premiered in March 2021 quickly gaining significant traction. While the film does not specifically target fishing practices in Australia, many of the messages in the film have implications for consumers and public opinion in Australia and our domestic commercial fishing industry. Social media activity and a *Seaspiracy* petition indicate that the film continues to receive attention for its views. The film has also received significant pushback from scientific institutions and media for its inaccurate claims. In order to play a background role as an accurate source of scientific information, the FRDC compiled a table of claims (and corrections) from the film where there were either scientific inaccuracies or the need for clarification due to the unique Australian context.
- Author Richard Flanagan released his book *Toxic* in April 2021. The book makes claims about the harmful impact of Tasmania's Atlantic Salmon aquaculture industry. The book has generated significant media debate and, as above, has received significant pushback from scientists and industry regarding its claims. FRDC has partnered with CSIRO and the Institute for Marine and Antarctic Studies to ensure that research around the issue is available to inform the public debate which has ensued since the book's publication.

COLLABORATION

National research leadership

FRDC and its partners have been actively collaborating across the agri-system nationally and globally to investigate opportunities for shared impact. Some of the key achievements this year follow.

Partnering with Food Innovation Australia Ltd to determine a roadmap towards $200 billion by 2030

In a collaboration with Food Innovation Australia Ltd (FIAL), the FRDC delivered a facilitated process involving stakeholders from across fishing and aquaculture to develop a roadmap for growth of fishing and aquaculture. The process formed part of a larger initiative led by FIAL to 'capture the prize' of growing food and agribusiness to over $200 billion by 2030, focusing on 19 growth opportunities, and responding to 10 future trends impacting food production and consumption in Australia. The process is designed to encourage diverse actors across Australia's food and agribusiness sectors to work together towards shared desired outcomes, offering potential to boost competitiveness, stimulate employment and economic significance.

Development of a blueprint for growth of fishing and aquaculture in Australia

The FRDC has been supporting the development of a National Fisheries Plan by the Fisheries Branch of DAWE to guide fishing and aquaculture in Australia. Consultative work led by the FRDC to inform the draft document Fish Forever 2030 has assisted DAWE in its advancement of the National Fisheries Plan.

Partnering to drive ocean sustainability

The FRDC collaborated with other Australian contributors to develop targets supporting the High-Level Panel for Sustainable Ocean Policy, launched in December 2020. The policy is underpinned by bold, yet pragmatic actions to transform how we use and protect the ocean.

The FRDC also has a key leadership role on the National Marine Science Committee, and continues to work with a diverse collective to see Australia deliver transformational marine science during the United Nations Decade of Ocean Science.

Partnership in the Global Ag-Tech Ecosystem (GATE)

The FRDC has partnered in a collaborative research and technology initiative specifically designed to develop ag-tech ideas (see page 59).

Working together to create Australia's first net-zero footprint region

The FRDC became a partner of the Bega Circularity project in March 2021, which is an ambitious initiative to try and make the Bega Valley in New South Wales, Australia's first net-zero footprint region. The initiative aims to turn the economy of the valley into a circular one, where materials are continually used and re-used, creating value from waste streams and minimising the need for continual resource inputs. This is in stark contrast to the more common linear approach of 'take, make and dispose'.

The FRDC has engaged in this initiative to learn, offer access to knowledge from the FRDC's R&D on the use of waste streams and regenerative activities, and to support a community intent on finding out what can be achieved when working together to tackle a big problem.

The project team, which includes Rabobank, KPMG, Bega Valley Shire Council, Charles Sturt University, NSW Circular, The South Coast Dairy Group, Bega Cheese and the Bega Beef Co-op have been working to clarify what success looks like, identify pathways to move forward, and seek partners and investment.

Australian Fisheries Management Forum

The Australian Fisheries Management Forum (AFMF) is an informal network for sharing information between the state and federal government agencies involved in managing fisheries and aquaculture in Australia. The FRDC continues to work actively with AFMF to promote a collaborative, coordinated and science-driven approach. At its last meeting in May 2021, the FRDC tabled six out of 11 agenda items, demonstrating the active role played by the FRDC in advancing a national discussion on the future of fishing and aquaculture in Australia.

The Tasmanian Salmonid Science Alliance

During early 2021 FRDC facilitated the development of the Salmonid Science Alliance to respond to the demand from stakeholders and the community for independent and trusted science that can inform planning and discussion about sustainable salmonid aquaculture in Tasmania. The alliance involves CSIRO, IMAS and the University of Tasmania (UTAS), who are all committed to establishing a long-term research partnership.

The objectives of the alliance are to:

- coordinate and support enduring and independent science transparency and communications across IMAS, UTAS, and FRDC in relation to research on Salmonid farming in Tasmania,
- scope and support an integrative research program to support sustainable management of Salmonid aquaculture in Tasmania.

A key initiative of the alliance is to develop a salmonid aquaculture portal that brings all the research together in a format that meets the needs of stakeholders and the community. This portal is being developed through 2021 and planned for launch in 2022.

Joint CRRDC activities

Leadership role chairing CRRDC CEO's Committee

The FRDC has maintained an active role in leadership of the Council of Rural RDCs (CRRDC), with the Corporation's Managing Director acting as Executive and Chair of the CRRDC CEO's Committee until 30 April 2021. The CRRDC provides a structure through which the rural RDCs can work together on matters of common interest and importance. The aim of the CRRDC is to enable the RDCs to generate additional value, over and above what can be achieved through individual action. The CRRDC operates on behalf of the RDCs and enables them to develop, share and communicate common positions, platforms and messages.

The CRRDC impact report

In 2007 the CRRDC established a program to assess the impact of R&D funded by the RDCs, the purpose of which is to:

- assess and report on the overall returns to rural industries from the portfolio of investments in R&D by RDCs,
- assess and report on the non-market benefits (including public and spillover benefits) arising from the portfolio of investments in R&D by RDCs,
- inform government and the public about the nature of those non-market (i.e. public and spillover) benefits from rural R&D that are conditional on public contributions to the RDCs.

The FRDC is currently contributing to a CRRDC Impact working Group, which provided inputs in 2020 to refine key shared performance indicators and have been collating data for the production of the 2021 Cross-RDC Impact Assessment Program Summary Report.

Agricultural Innovation Australia

Agricultural Innovation Australia (AIA), a new company targeting transformational innovation across agriculture, was formed in October 2020. All 15 RDCs, including FRDC, are founding members.

AIA was established to catalyse public and private sector investment, and enhanced collaboration, in solving the biggest cross-sectoral challenges in Australian agriculture. As a single point of contact for cross-industry strategies, AIA will make it easier for investors from around the world to navigate and partner with the Australian agricultural system.

The RDCs contribute subscription fees and will benefit from enhanced collaboration and more effective leveraging of funding, knowledge and resources. The scope of its strategies will cover the agriculture, fisheries and forestry value chains.

Further information is available from aginnovationaustralia.com.au

Growing innovation and digital transformation across agriculture

The Australian Government's Ag2030 Innovation Agenda and Digital Foundations for Agriculture Strategy seek to drive productivity growth, sustainability and resilience across Australia's agriculture, forestry and fisheries industries, in pursuit of an ambitious goal of growing agriculture to $100 billion by 2030.

The FRDC has actively participated in the development of the Australian Government's Ag2030 innovation agenda and Digital Foundations for Agriculture Strategy, which align strongly with the strategic intent of the Corporation's R&D Plan 2020–25.

The FRDC partners to accelerate commercialisation through grow$^{AG.}$

Details about the grow$^{AG.}$ collaboration can be seen on page 55 under Enabling strategy I·.

Mapping Community Trust project—second year results

The FRDC is a partner in the Community Trust in Rural Industries collaborative project, run by AgriFutures and funded by the rural RDCs. The project aims to explore the issues around community trust by looking at risk, threat, or opportunities that exist for building better trust between the community and primary production. Year one results show that Australians indicated broad agreement that rural industries manage their role as environmental stewards of the land and sea effectively, although there was some concern about specific issues such as the impacts of runoff from rural industries on coastal environments, and about sustainable management of oceans and the use of appropriate amounts of water. There was strong agreement, however, that environmental management is a shared responsibility across all Australian rural industries.

The national data showed that rural industries were viewed as broadly responsive to community concerns, but there was less agreement (and high levels of uncertainty) about the extent to which rural industries are prepared to change their practices in response to community concerns.

The project also clearly demonstrated that Australians value products produced by rural industries. The great majority of participants in the national survey agreed that the products of farmers, fishers and foresters play an important and central role in the lives of Australians.

These finding present opportunities for the relevant sectors to make improvements and address issues within their industry.

Australian Agrifood Data Exchange.

The FRDC is collaborating on developing the Australian Agrifood Data Exchange. Led by KPMG and Meat & Livestock Australia, the initiative seeks to make the most of technology across supply chains to maintain Australian agriculture's domestic and global competitiveness. The overall goal is to provide a means so data can be shared, reused and combined.

Further details about the Australian Agrifood Data Exchange can be found on page 54 under Enabling Strategy I.

Helping fishing, farming and forestry to thrive regardless of a changing climate

Climate change and variability is likely to be a significant source of uncertainty and disruption for fishing, farming and forestry into the future. Through historical investment RDCs have supported sectors and industry to understand risks and adapt, but the pace of change has been too slow to date. For this reason, the RDCs have collaborated with innovation facilitation groups including Meld Studios, Climate Kic, and Asymmetric Innovation to develop a new climate initiative to enable agriculture, fishing and forestry in Australia to thrive, regardless of pressures from a variable and changing climate.

Over the last 12 months, the FRDC has worked within a multi-disciplinary team to develop a credible and novel investment plan for AIA. The process was underpinned by human-centred design thinking, involving several stages of engagement and co-design with producers and other stakeholders to identify the right problems to solve, and inform selection of the appropriate solutions to do so. The process created a space to collectively develop a vision of what a transformation investment plan could look like in relation to the challenges and opportunities associated with climate change.

RDCs working together with the new innovation and drought hubs

The Australian Government has established eight Drought Resilience Adoption and Innovation Hubs nationally to connect researchers, primary producers and community groups with an aim to enhance drought resilient practices at regional scales. The FRDC has been engaging with hub leads through the CRRDC to share information about current climate and drought-related R&D activities and to explore opportunities for co-design and enhanced coordination identify opportunities for collaboration. The FRDC will continue to engage hubs individually to maintain shared situational awareness and identify opportunity to deliver shared impact.

National Seafood Industry Safety Initiative

The National Seafood Industry Safety Initiative (SISI) was developed to deliver improved workplace health and safety space of the Australian seafood industry via a cross-stakeholder partnership that addresses gaps and/or inefficiencies that impact on safety.

The scope of the activities for the initiative are focused on the commercial wild-harvest and commercial aquaculture sectors, with the overarching goal of working towards zero fatalities and reduction in workplace safety incidences.

A number of associated projects underpin and help deliver the Initiative. Key supporting activities include SeSAFE which aims to provide a platform of safety education material and Seafood Industry Australia's 'Our Pledge,' that commits to "value our people, look after them and keep them safe".

MANAGEMENT AND ACCOUNTABILITY

Management and accountability

Management and accountability activities focus on continually improving how the FRDC operates and manages its organisation. A large part of the activities undertaken align and respond to legislative and financial requirements. These also align with the corporate governance section starting on page ##.

The FRDC strategic planning and reporting documents (comprising R&D Plan, AOP and annual report) were completed and presented for approval within their legislated time frames. These documents aim to identify the key issues that face stakeholders across fishing and aquaculture, outline strategies to respond to issues identified, and report on progress in the implementation of those strategies.

Principal inputs

During 2020–21, the FRDC's expenditure on corporate costs was $4.6 million or around 14 per cent of total FRDC expenditure.

Performance indicators

Since the management and accountability outputs contribute to the planned outcome of the FRDC's R&D programs, they are crucial to the FRDC's effectiveness and efficiency. These outputs are outlined below.

Performance indicators	Target	Achievement
Projects focus on the FRDC Board's assessment of priority research and development issues.	Ninety-five per cent are a priority.	Achieved. Projects align with strategic priorities set out in the AOP and partner plans.
Projects are assessed as meeting high standards/ peer review requirements for improvements in performance and likely adoption.	Ninety-five per cent are a high priority.	Achieved.
Maintain ISO 9001:2015 accreditation.	FRDC maintains certification.	Achieved, see page 83.
Submit planning and reporting documents in accordance with legislative and Australian Government requirements and timeframes.	One hundred per cent met government requirements.	Achieved, all documents submitted in accordance with requirements.
Implement best practice governance arrangements to promote transparency, good business performance and unqualified audits.	Achieve unqualified audit result.	Achieved, see audit report pages 114–115.
Demonstrate the benefits of R&D investments by positive benefit cost analysis results.	Benefit analysis undertaken on one investment area.	Achieved. Average benefit cost analysis results, see pages 65–79.

Staffing

The FRDC is governed by a board of directors (see page 104) appointed for their expertise and is led by a managing director who manages the day-to-day operations of the organisation.

In 2020–21, the FRDC employed 20 people (four staff are part time) across its operations with an average staffing level of 18.3. FRDC's staff are one of its most important resources, and are key to the Corporation's ongoing success.

ALL ONGOING EMPLOYEES CURRENT REPORTING PERIOD (2020–21)*

	Male			Female			Total
	Full time	Part time	Total male	Full time	Part time	Total female	
Australian Capital Territory	2	0	2	1	0	1	3
Total	**2**	**0**	**2**	**1**	**0**	**1**	**3**

* There were no ongoing employees in New South Wales, the Northern Territory, Queensland, South Australia, Tasmania, Victoria or Western Australia.

ALL NON-ONGOING EMPLOYEES CURRENT REPORTING PERIOD (2020–21)*

	Male			Female			Total
	Full time	Part time	Total male	Full time	Part time	Total female	
Australian Capital Territory	4	0	4	4	3	7	11
New South Wales	0	0	0	1	0	1	1
South Australia	2	0	2	2	1	3	5
Total	**6**	**0**	**6**	**7**	**4**	**11**	**17**

* There were no non-ongoing employees in the Northern Territory, Queensland, Tasmania, Victoria or Western Australia.

ALL ONGOING EMPLOYEES PREVIOUS REPORTING PERIOD (2019–20)*

	Male			Female			Total
	Full time	Part time	Total male	Full time	Part time	Total female	
Australian Capital Territory	4	0	4	2	0	2	6
Total	**4**	**0**	**4**	**2**	**0**	**2**	**6**

* There were no ongoing employees in New South Wales, the Northern Territory, Queensland, South Australia, Tasmania, Victoria or Western Australia.

ALL NON-ONGOING EMPLOYEES PREVIOUS REPORTING PERIOD (2019–20)*

	Male			Female			Total
	Full time	Part time	Total male	Full time	Part time	Total female	
Australian Capital Territory	2	0	2	3	3	6	8
New South Wales	0	0	0	1	0	1	1
Northern Territory	1	0	1	0	0	0	0
South Australia	2	0	2	1	1	2	4
Total	**5**	**0**	**5**	**5**	**4**	**9**	**14**

* There were no non-ongoing employees in Queensland, Tasmania, Victoria or Western Australia.

Equal employment opportunity

The FRDC promotes a work environment that is free from discrimination on the basis of race, colour, sex, sexual preference, age, physical or mental disability, marital status, family responsibilities, pregnancy, religion, political opinion, national extraction or social origin, or on the basis that an individual either is, or is not, a member of a union of employees, or of a particular union of employees.

The FRDC has a policy of equal employment opportunity. Merit-based principles are applied in recruitment and promotion to ensure discrimination does not occur.

Industrial democracy

The FRDC's staff members work as a team in which all contribute freely. This process is strongly reinforced by the FRDC's total quality management philosophy and the attendant emphasis on continual improvement. Staff members are provided with the opportunity at regular meetings to raise issues and discuss options to resolve how they are handled.

Disability and accessibility

The FRDC's employment policies and procedures align with the *Disability Discrimination Act 1992* in the broader context of the National Disability Strategy 2010–2020. The FRDC's recruitment and staff development practices seek to eliminate disadvantage that may be contributed to by disabilities. Consultation with people with a disability and when required, with appropriate specialist organisations, is a component of the FRDC's policies and practices, recognising the effect of a disability differs widely between individuals and that often a little thought makes a big difference in meeting a person's needs.

Final report requirements

Under the *Disability Discrimination Act 1992*, Australian Government agencies are required to ensure information and services are provided in a non-discriminatory accessible manner—the FRDC aims to make all project reports meet these requirements. Where information is not accessible, the FRDC ensures that it is made available in a suitable format.

Behaviour

Corporate governance practices are evolving rapidly, both in Australia and overseas. The FRDC is proactive in adopting better practices, including those governing ethical behaviour, into its own processes. The FRDC has a code of conduct that is appropriate to its structure and activities. New directors and staff are briefed and sign off agreeing to comply with the code during induction training.

Records management

The National Archives of Australia undertakes an annual assessment (Check-up PLUS) looking at maturity and performance in information and data management. Check-up PLUS is structured to align with the National Archives' Information Management Standard. The survey assesses agencies maturity and performance in information and data management, in line with the Digital Continuity 2020 Policy.

A total of 169 agencies completed the 2020 Check-up PLUS survey. The FRDC scored an overall maturity score of 4.47 out of 5, an increase from 2019. This is 1.07 above the Australian Government average of 3.40.

	FRDC scores	Rank (out of 169 agencies)	Position
Governance Index	4.42	8	Top third of agencies
Information creation/generation index	5.00	1	Top third of agencies
Interoperability index	4.44	22	Top third of agencies
Storing information digitally index	4.50	32	Top third of agencies
Disposing index	3.57	49	Top third of agencies
Digital operations index	5.00	1	Top third of agencies
Overall index	**4.47**	**10**	**Top third of agencies**

Risk management

There was no incidence of fraud detected at the FRDC during the year.

Risk management is incorporated into FRDC's activities in accordance with its risk management policy, which is integrated into its quality management system and internal audit program. The risk management framework includes the fraud control plan, providing the minimum standard for managing the risk and incidents of fraud, and adopting best practice as per the Commonwealth Government Fraud Control Framework, produced by the Attorney-General's Department, which seeks to minimise the likelihood and impact of fraud.

All staff participated in an internal risk workshop 11 May 2021, which was used to update the FRDC's risk framework. Additionally, the Board reviews the highest-ranked strategic risks at every meeting.

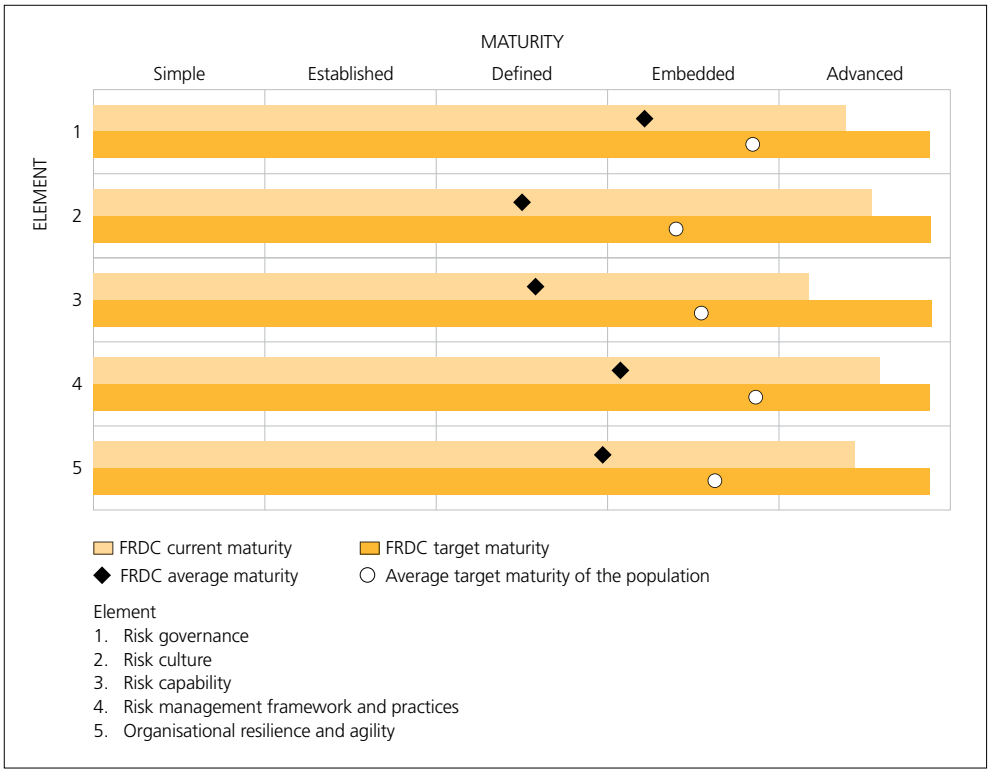
COVID-19 risks

Following the outbreak of COVID-19, the FRDC undertook a risk review looking at the impacts of the pandemic. A COVID-19 risks matrix was identified and is updated regularly. Key risks identified were to staff, delivery of R&D and financial impacts (both on stakeholders and the Corporation).

Comcover Risk Management and Benchmarking Survey

The FRDC completed the Comcover Risk Management and Benchmarking Survey—which is conducted annually—and achieved a risk maturity of advanced; noting that the average maturity level of all survey participants was defined.

FIGURE 4: COMPARISON OF CURRENT AND TARGET MATURITY STATES ACHIEVED ACROSS ELEMENTS 1–5 FOR FRDC RELATIVE TO THE COMMUNITY OF PRACTICE



Agreements and contracts

Each year the FRDC engages companies, research institutions and government agencies to undertake R&D activities. The process for applying for funding is outlined on the FRDC's website. The FRDC engages each organisation using a contract or consultancy agreement that outlines the requirements and responsibilities associated with undertaking work for the FRDC. This includes obligations around government policy and standards such as privacy, fraud, and work health and safety. A list of all active projects, including projects approved is available on the website—www.frdc.com.au

Industry contributions

At the core of FRDC's finances is maintaining solid partnerships with those contributing stakeholders, namely the state and territory fisheries agencies and individual industry sectors. The FRDC currently has 12 IPAs.

These partnerships offer both parties a number of advantages. For industry, they provide more involvement in determining and undertaking R&D. For the FRDC they provide a more certain flow of industry funds and ultimately a greater understanding of the fishing industry.

An overview of state and territory contributions against the maximum matchable contribution is shown in Table 9: Industry contributions, maximum matchable contributions by the Australian Government and return on investment (page v).

Consultancy services and selection of suppliers

During the year, the FRDC engaged 12 consultancies which were valued at $10,000 or more (see tables that follow).

When selecting suppliers of goods and services, the FRDC follows its procurement policy and procedure which seeks to achieve value for money and to deal fairly and impartially with its suppliers. Obtaining value for money does not necessarily require the cheapest supplier to be selected. Other factors considered are urgency, quality, ethical conduct of the supplier, and whole-of-life costs.

The FRDC policies and procedures aim to adopt the better practice principles contained in the Commonwealth Procurement Rules, and are available from the FRDC website.

CONSULTANCY SERVICES

Consultancy	Description	Amount GST inclusive
		$
IT Payroll Solutions	Provision of contract staff	383,159
Hays Recruitment	Agency contracted staff	13,606
Mercer	Workforce plan	63,514
Yardstick Advisory	Internal auditors	53,922
Ashurst Lawyers	Legal advisory services	58,787
Dot Zone	IT provider	36,438
Versecorp Pty Ltd	IT provider	105,212
The Nielsen Company Australia	Provides market data services	16,500
Coretext	Production of *FISH* magazine	209,028

CONSULTANCY SERVICES AS REQUIRED UNDER SECTION 311A OF THE *COMMONWEALTH ELECTORAL ACT 1918*

Consultancy	Description	Amount GST inclusive
		$
Making Data Easy	Stakeholder data analytics and e-mail services	5,498
Lee Armson	Stakeholder data analytics and e-mail services	30,388
Intuitive Solutions	Market research	70,400

Cost recovery policy

	2020–21
	$
Cost recovery expenses to the Commonwealth for levy collection charges	17,738

Legal Services Directions Expenditure Report

The FRDC submitted a Legal Services Directions Expenditure report on 13 August 2021.

Ministerial directions

During the year the FRDC received no ministerial directions or notifications.

The PIRD Act provides that the Portfolio Minister may give direction to the Corporation with respect to the performance of its functions and the exercise of its powers. In addition, the Finance Minister, under the PGPA Act, may notify the Board of any general Australian Government policies that apply to the FRDC.

Government policy

The FRDC has adopted relevant Australian Government policy requirements:

- Australian Government Cost Recovery Policy,
- Australian Government Commonwealth Procurement Rules,
- Australian Government Commonwealth Property Management Framework,
- Commonwealth Fraud Control Guidelines 2011,
- Australian Government's Public Sector Workplace Relations Policy 2020,
- Foreign Exchange (Forex) Risk Management.

See the compliance index starting on page 166.

Protective Security Policy Framework

The FRDC has worked consistently during the year to align FRDC practices with the Protective Security Policy Framework. It has implemented a number of physical and system changes to meet the requirements of the framework, which include installing both physical security and information technology improvements. The FRDC continues to work on improving its security policies and procedures with regards to security risk management.

Work health and safety

The FRDC is committed to providing a safe and healthy environment for all staff, contractors and visitors to its workplace. The Corporation recognises that its people are its greatest asset and its most valuable resource. The FRDC's ultimate goal is that its workplace is free of injury, illness and disease. The FRDC complies with its legislative obligations under the *Work Health and Safety Act 2011* (WHS Act) and takes all reasonably practicable steps to ensure a safe working environment. Regular maintenance of equipment and testing of electrical cables is also undertaken.

The FRDC's Workplace Health and Safety Policy and procedure has been developed in accordance with the requirements under the WHS Act in consultation with FRDC's employees. The FRDC also recognises that continued reviewing and improvement of its health and safety management system makes good sense legally, morally and from a business perspective.

PART 4 OF THE *WORK HEALTH AND SAFETY ACT 2011*

Statistics of any notifiable incidents of which the entity becomes aware during the year that arose out of the conduct of businesses or undertakings by the entity.	• No injuries occurred on FRDC premises during 2020–21.
Initiatives taken during the year to ensure the health, safety and welfare of workers who carry out work for the entity.	• Consultation of WHS issues includes all staff. • Agreed health and safety management arrangements policy and procedures.
Health and safety outcomes (including the impact on injury rates of workers) achieved as a result of initiatives mentioned under paragraph (a) or previous initiatives.	• Health and safety awareness and incidents are a standing item for all staff meetings. • Occupational rehabilitation physiotherapist provides ergonomic assessments to all new staff in their immediate working environment, and when requested. • Staff provided with access to influenza vaccinations. • Workplace safety training. • Annual fire safety and warden training, and six-monthly checks of fire safety equipment. • Annual testing and tagging of electrical appliances. • Qualified first aid officers and fire warden. • Assessment of risks in line with the risk framework annual review.
Investigations conducted during the year that relate to businesses or undertakings conducted by the entity, including details of notices given to the entity during the year under part 10 of the Act.	• Increased awareness of roles and responsibilities in WHS including responsibilities of managers. • No requests were received from staff and no undertakings were given by the FRDC. • No directions or notices were given to the FRDC.

Notifiable incidents	2016–17	2017–18	2018–19	2019–20	2020–21
Deaths	0	0	0	0	0
Dangerous occurrences	0	0	0	0	0
Serious personal injury	0	0	0	0	0
Incapacity	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**

Comcare Australia is responsible for worker's compensation insurance coverage within the FRDC. The insurance premiums are levied each year based on the level of salaries and wages costs and experience in claims made by employees.

Quality system

The FRDC is a certified AS/NZS ISO 9001:2015 organisation for quality, and undertakes internal and external audits annually with a recertification audit of its quality system each three years. The FRDC carried out a surveillance audit in 2020 to maintain its accreditation and was successful.

Judicial reviews and administrative tribunals

There were no judicial or administrative tribunal decisions during the year.

Freedom of information

During 2020–21, the FRDC received no requests pursuant to the *Freedom of Information Act 1982* (FOI Act). The FRDC is required to comply with the FOI Act.

In many cases it may not be necessary to request the information under the FOI Act—the FRDC may simply provide it when asked. At all times, however, individuals have the option of applying under the FOI Act.

More information on freedom of information see Appendix E on page 159 or the FRDC website to view the FOI Disclosure Log https://www.frdc.com.au/About/Freedom-of-information/Disclosure-Log.

CORPORATE GOVERNANCE

Corporate governance

Governance refers to processes by which organisations are directed and controlled—including, characteristics such as authority, accountability, stewardship and leadership. Corporate governance is concerned with structures and processes for decision making, and with controls and behaviour within organisations that support effective accountability for performance outcomes.

The FRDC's general governance arrangements are established by legislation and government policies and reporting requirements. In addition to the requirements of the PIRD Act, which includes an annual operational plan, R&D plan and an annual report, the Corporation also operates under the provisions of the PGPA Act which applies high standards of accountability for statutory authorities.

The Board and staff are strongly committed to ensuring good corporate governance. In doing so, the focus is on policies, structures, delegations, processes, controls, behaviours and transparency. To support the FRDC's high level of commitment to these principles, a full list of FRDC policies and copies of the financial statements are available from the FRDC website—www.frdc.com.au

The Board

The FRDC Board sets the overarching direction and strategy for the organisation. It has ensured that the necessary governance (policies), systems and procedures are in place to enable the organisation to invest in priority areas and specific R&D activities.

The Board comprises eight directors who are appointed in accordance with sections 17 and 77 of the PIRD Act. Directors are selected on the basis of their expertise in a variety of fields including commodity production and processing, conservation, science, economics, and business and financial management. All directors, except the Managing Director, are appointed for three years on a part-time basis.

At the commencement of a term all directors undergo a formal induction including a workshop run by the Australian Institute of Company Directors. In addition, to ensure the Board has a strong understanding and connection to the fishing industry and its stakeholders, it meets face-to-face outside Canberra wherever possible (ideally at least three times a year in regions key to the fishing industry) or via digital means. This provides directors with the opportunity to discuss relevant issues with industry stakeholders, as well as see first-hand, the fishing industry in action.

The Board plays a fundamental role in guiding the organisation and providing the FRDC management with strong leadership. It oversees corporate governance, ensuring the FRDC has a good framework of policies and procedures, playing a strong role in the approval and oversight of financial matters including the approval of high-risk projects.

A key action during the year was updating the Delegation Policy. This was undertaken to ensure that FRDC management are focused on those matters it is best suited to manage, and was aligned to the new Workforce Plan. In addition, the Board approved FRDC's Annual Operational Plan and funds for investment programmatically against both current commitments (existing contracted projects), and new investment delegating FRDC management to oversee the investment in line with stakeholder priorities, the AOP and the R&D Plan. The Board continued to provide the necessary governance, oversight and approval for projects that are high risk. The objective is to provide a more flexible and nimble approach to investment, whereby the FRDC can assess applications at any time throughout the year.

Details of the directors who held office during the year are shown on the following pages.









TOP TO BOTTOM, LEFT TO RIGHT:
MR JOHN WILLIAMS (CHAIR), PROFESSOR COLIN BUXTON (DEPUTY CHAIR),
DR KATE BROOKS, DR SARANNE COOKE, MS KATIE HODSON-THOMAS,
MR MARK KING, MR JOHN LLOYD, DR LESLEY MacLEOD,
DR PATRICK HONE (MANAGING DIRECTOR).

Directors' biographies

Mr John Williams: Chair

Appointed Chair from 10 March 2020.

John Williams was elected to Federal Parliament in 2007 as Senator for New South Wales and was sworn in on 26 August 2008. John was born in Jamestown South Australia but has lived most of his life in the Inverell district in the New England region of New South Wales. Prior to entering politics, he had been a truck driver, shearer, farmer and a small business owner.

With this background, John understands regional Australia and the issues small business operators deal with every day. John is a strong advocate for the reduction of red tape in small business to allow businesses to not only survive and compete but to grow and prosper. His vision is for regional Australia to obtain adequate funding to maintain rural communities and facilities and maintain the way of life so many people enjoy.

Emeritus Professor Colin Buxton: Director (Deputy Chair)

Appointed Director from 1 September 2015 to 31 August 2018, reappointed 10 October 2018.

Colin Buxton is an independent director and principal consultant at Colin Buxton & Associates. In 2014 he retired as Director of the Fisheries, Aquaculture and Coasts Centre at the Institute for Marine and Antarctic Studies at the University of Tasmania (UTAS), where he is now an Adjunct Professor. Colin has held senior management positions at the Port Elizabeth Museum, Rhodes University and the Australian Maritime College, as well as being the inaugural director of the Tasmanian Aquaculture and Fisheries Institute at UTAS.

A graduate of the Australian Institute of Company Directors, he has served of the boards of several organisations including the Aquaculture Cooperative Research Centre (CRC), Finfish CRC and Seafood CRC, Southern Rock Lobster Ltd (Chair) and the Tasmanian Environment Protection Authority. He is also Chair of the National Fisheries Advisory Council and serves on the Tasmanian Marine Farming Review Panel. Colin has a broad knowledge and experience in coastal marine environments, fisheries and aquaculture and is a frequent consultant and advisor to government and industry in Australia, Africa and the United States. A graduate of the University of Cape Town (Masters *cum laude*) and Rhodes University (PhD), he is internationally recognised and has published widely on his work on the life histories and effects of exploitation on reef fishes. Much of his research has been focused on understanding the role of Marine Protected Areas as a conservation and fisheries management tool.

Dr Kate Brooks: Director

Appointed Director from 10 October 2018.

Kate Brooks is an experienced non-executive director and panel advisory member in the coastal, marine and fisheries management sectors. This is augmented by an established career as a consulting sociologist, working almost exclusively in the fishing and seafood industry and related areas, since 2007. She is an internationally recognised social researcher publishing in the areas of marine and natural resource management and reputational risk, and collaborating with clients across Australia, New Zealand, Canada, Dubai, Europe and the United Kingdom. Her application of intellectual rigour and curiosity to strategic planning, implementation and extension of research is focused on delivering strategically sustainable development and growth for industry in the context of creating supportive community environments.

Kate has worked with the seafood industry since 2000. She holds a Master's degree (social impact assessment), and a PhD (social capital) in sociology, both with the focus on supporting and developing industry and community benefit. Since 2000, she has played a key role in bringing the social dimension to triple bottom line approaches in the management of fisheries and the seafood industry as a whole, and sits on a number of advisory boards and panels in New South Wales and is a non-executive director of OzFish Unlimited. Kate is also a graduate and member of the Australian Institute of Company Directors.

Dr Saranne Cooke: Director

Appointed Director from 10 October 2018.

Saranne Cooke is a professional director and chair with experience on a variety of boards across the education, health, sport, financial and not-for-profit sectors. Saranne is Deputy Chancellor of Charles Sturt University, a Racing NSW Board Member, a HESTA Trustee Board member, a director of the Western NSW Primary Health Network, the Royal Flying Doctor Service (South Eastern) and a director of Leading Age Services Australia.

Dr Cooke has held a number of senior roles within the energy, financial, education and manufacturing industries. She completed her doctorate researching board governance across the ASX 200 companies. She also holds a Bachelor of Commerce, Master of Business (Marketing), and a Master of Commercial Law. Saranne is a Fellow of the Australian Institute of Company Directors, a Fellow Certified Practising Accountant, a Fellow of the Australian Marketing Institute, a Certified Practising Marketer and a member of the Golden Key International Honour Society.

Ms Katie Hodson-Thomas: Director

Appointed Director from 10 October 2018.

Katie Hodson-Thomas represented the Western Australian metropolitan electorate of Carine from 1996 to 2008. During her time in parliament, she served as a Parliamentary Secretary to the Minister for Health; held shadow portfolio responsibilities for transport, tourism, small business, environment, and road safety; and was Deputy Chair of the Community Development and Justice Standing Committee. After retiring from parliament, she joined several membership-based industry associations holding senior positions. Prior to joining FTI Consulting in 2012 she ran her own consultancy practice specialising in government relations. Katie was elected as the first female independent Chair of Western Australian Fishing Industry Council at the 2017 Annual General Meeting; is a member of the Western Australian Gaming and Wagering Commission and the Gaming Community Trust; and has served as a Justice of the Peace since 1997.

Mr Mark King: Director

Appointed Director from 10 October 2018.

Mark King is a third-generation dried fruit grower and has a 100 hectare family farm growing sultanas and currants at Pomona, which is irrigated from the Darling River. Pomona is located in the far south-west corner of New South Wales, and is 50 kilometres from South Australia and close to the Victorian border. Mark grew up on the Darling River and has witnessed the many changes to river health and irrigation demands. He is a former councillor and Deputy Mayor of the Wentworth Shire Council and was a former chair of the lower Murray–Darling Catchment Management Authority from 2000 to 2012.

During this time, he had undertaken many projects that explored river and fish health in the Darling and Murray Rivers. Mark is now the current Chair of Dried Fruits Australia, which is the peak industry body, and has held this position for nine years. He is also a current board member of the National Farmers' Federation. Mark has had experience with industry and a range of government boards and authorities. He ventured into aquaculture in 2012 growing Murray Cod, Silver Perch and Golden Perch within a dam system. With aquaculture growing in the surrounding area (Sunraysia), Mark sees this as a sustainable way to meet the growing demand for fish, without affecting wild fish numbers.

Mr John Lloyd: Director

Appointed Director from 10 October 2018.

John Lloyd is the former CEO of Horticulture Innovation Australia/HAL leading both organisations over a nine-year period of significant growth, change and transition. He is a current director of Agribusiness Australia and Menari Business Solutions Pty Ltd. Recently relocating to Orange New South Wales, he and his family run a small agricultural enterprise at Borenore. John is a director on boards of both Charles Sturt University and Meat & Livestock Australia.

John's career has spanned most parts of the Australian agribusiness sector with senior leadership positions including Managing Director Case IH/New Holland ANZ; General Manager Commercial Incitec Pivot; and General Manager Merchandise Wesfarmers Dalgety. More recently John has led a significant restructure of the research corporation for the $10 billion horticulture sector, creating new funding models that have catered for its longer-term strategic issues as well as accessing broader and non-traditional sources of investment. These issues include Asian export markets, biosecurity, health and nutrition, pollination, major pests, intensive farming systems and urban greening. John has a Bachelor of Applied Science from the University of NSW as well as an MBA from Macquarie University.

Dr Lesley MacLeod: Director

Appointed Director from 1 September 2015.

Lesley MacLeod is the former CEO of Dairy Innovation Australia and a former board member of Murray Dairy, Barley Australia and MBQIP Ltd. Lesley is currently a director on the Agriculture Victoria Services board. Educated in Edinburgh, Scotland she has a first-class honours degree in marine biology and PhD from Heriot-Watt University. Following a 12-year research career in Edinburgh and Adelaide focusing on grains research Lesley moved into industry in Victoria where she gained over 20 years' experience in senior agribusiness management for Australian and multinational companies. Lesley has a focus on research management, innovation and commercialisation and has established of a number of national R&D programs and not-for-profit companies. She has a Diploma in Business Management and is a graduate of the Australian Institute of Company Directors.

Dr Patrick Hone: Managing Director

Appointed Managing Director from 21 April 2005.

Patrick Hone is Managing Director of the FRDC and a member of the National Marine Science Committee. Patrick has extensive knowledge of all sectors of the fishing and aquaculture industries. He has more than 20 years working for the FRDC and has played a key role in the planning, management and funding of fishing and aquaculture related research, development and extension in Australia. In recent years Patrick has become one of Australia's leading spokespeople on the role of marine science.

Patrick has a PhD from Adelaide University, and previously worked for the South Australian Research and Development Institute (SARDI) on a wide range of aquaculture research for Southern Bluefin Tuna, Pacific Oysters, mussels, Yellowtail Kingfish and abalone.

Attendance at Board meetings held during the year

The tables below and on the following page show attendance at Board and committee meetings held during the year. The Chair approved all absences from Board meetings in accordance with section 71(2) of the PIRD Act.

TABLE 10: ATTENDANCE BY DIRECTORS AT BOARD MEETINGS

Note: All meetings were conducted as videoconferences.

Date	16/07/2020	19/08/2020	18/09/2020	26/11/2020	04/03/2021	05/05/2021	8/06/2021	23/06/2021
Mr John Williams (Chair)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dr Patrick Hone (Managing Director)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Professor Colin Buxton (Deputy Chair)	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dr Kate Brooks	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dr Saranne Cooke	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Ms Katina (Katie) Hodson-Thomas	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mr Mark King	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Mr John Lloyd	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Dr Lesley MacLeod	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Cheryl Cole (General Manager Finance and Business)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Board committees

The Board's Finance, Audit and Risk Management (FARM) Committee comprises at least two non-executive directors. The FARM committee provides financial oversight for the FRDC reporting back to the Board, as well ensures effective communication to the external and internal auditors. The committee also oversees the FRDC Risk Management Framework.

The Board FARM Committee Charter (Policy) is available on the FRDC website at https://www.frdc.com.au/en/about/corporate-documents/corporate-policies.

Table 11, overleaf provides information about the FARM committee members, their qualifications, knowledge, skills or experience, their attendance during 2020–21 and their remuneration paid as a member of the committee.

TABLE 11: FRDC FARM COMMITTEE MEMBERSHIP 2020–21
Note: All meetings were conducted as videoconferences.

Member	Qualifications, knowledge, skills or experience (include formal and informal as relevant)	Number of FARM Committee meetings attended	Total annual remuneration paid as a member of the FARM Committee
			$ (GST inclusive)
Dr Saranne Cooke (Committee Chair)	See biography, page 107.	5 (of 5)	Nil
Mr John Lloyd	See biography, page 108.	5 (of 5)	Nil
Dr Lesley MacLeod	See biography, page 108.	5 (of 5)	Nil
Dr Kate Brooks (commenced April 2021)	See biography, page 106.	2 (of 2)	Nil

Attendance as observers	Number of FARM Committee meetings attended
Mr John Williams (Board Chair)	4 (of 5)
Dr Patrick Hone (Managing Director)	5 (of 5)
Cheryl Cole (General Manager Finance and Business)	5 (of 5)

The Board's People and Culture Committee comprises at least two non-executive directors. It has oversight and responsibility relating to the people, remuneration and culture.

The Board's People and Culture Committee Policy is available on the FRDC website at https://www.frdc.com.au/en/about/corporate-documents/corporate-policies.

TABLE 12: ATTENDANCE BY DIRECTORS AT THE PEOPLE AND CULTURE COMMITTEE
Note: All meetings were conducted as videoconferences.

Member	25/11/2020	13/04/2021	21/06/2021
Mr Mark King (Committee Chair)	Yes	Yes	Yes
Ms Katina (Katie) Hodson-Thomas	Yes	Yes	Yes
Mr John Williams	Yes	Yes	Yes
Dr Patrick Hone	Yes	Yes	Yes

The Board had one working group during year which ceased 3 August 2020. The Investment Mechanism Working Group provided oversight with the development of the new 2020–25 R&D Plan.

TABLE 13: ATTENDANCE BY DIRECTORS AT THE INVESTMENT MECHANISM WORKING GROUP
Note: The meeting was conducted as a videoconference.

Member	03/08/2020
John Lloyd (Chair)	Yes
Dr Kate Brooks	Yes
Professor Colin Buxton	Yes
Dr Patrick Hone	Yes

Record of meetings

Minutes of each meeting are kept and agreed to by the Board. The Managing Director prepares a letter to the Minister on behalf of the Chair after Board meetings, highlighting significant events and items. The same occurs if a significant event occurs between Board meetings.

Directors' interests and related entity transactions

The FRDC's policy on directors' interests, complies with section 27 and 29 and Rule 13–16B of the PGPA Act. The policy centres on the principle that a director must disclose an interest whenever he/she considers there is a potential conflict of interests.

A standing notice (register) about directors' interests is updated at each Board meeting. All declarations of interests, and their consideration by the Board, are recorded in the minutes.

Importantly, where the director has declared a 'material personal interest' in a matter that relates to the affairs of the FRDC, in addition to the duty of disclosing that interest, the director must not be present while the Board is discussing that matter and, importantly, must not vote on the matter unless one of a number of specific exceptions applies.

Indemnities and insurance premiums for officers

The Corporation holds directors' and officers' liability insurance cover through Comcover. During the year, no indemnity-related claims were made.

When appropriate, the FRDC may take out insurance policies to mitigate insurable risk.

Remuneration policy

Remuneration of non-executive directors is determined by the Remuneration Tribunal.

Remuneration of the Managing Director and staff is determined by an FRDC policy set by the Board. The amount of individual remuneration of the Executive Director and staff is based on advice by Mercer Human Resources Consulting Pty Ltd. The amount is also influenced by performance measured against individual performance agreements and by the size of the program support component within the total FRDC budget, from which salaries are paid.

PIRD ACT REQUIREMENTS

Year	2020–21
	$
Remuneration and allowances to non-executive directors	353,525
Selection Committee expenses and liabilities	38,521

Liabilities to staff

The FRDC provides for liabilities to its staff by ensuring its financial assets (cash, receivables and investments) are always greater than its employee provisions. Compliance with this policy is evidenced in the Statement of Financial Position in the Corporation's monthly financial statements.

2020–21 AUDITOR-GENERALS' REPORT

Australian National Audit Office

INDEPENDENT AUDITOR'S REPORT

To the Minister for Agriculture, Water and the Environment

Opinion

In my opinion, the financial statements of the Fisheries Research and Development Corporation ('the Entity') for the year ended 30 June 2021:

(a) comply with Australian Accounting Standards – Reduced Disclosure Requirements and the *Public Governance, Performance and Accountability (Financial Reporting) Rule 2015*; and

(b) present fairly the financial position of the Entity as at 30 June 2021 and its financial performance and cash flows for the year then ended.

The financial statements of the Entity, which I have audited, comprise the following statements as at 30 June 2021 and for the year then ended:

- Statement by the Accountable Authority (Chair and Chair Finance, Audit and Risk Management Committee), Managing Director and Chief Financial Officer;
- Statement of Comprehensive Income;
- Statement of Financial Position;
- Statement of Changes in Equity;
- Cash Flow Statement; and
- Notes to the financial statements, comprising a summary of significant accounting policies and other explanatory information.

Basis for opinion

I conducted my audit in accordance with the Australian National Audit Office Auditing Standards, which incorporate the Australian Auditing Standards. My responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report. I am independent of the Entity in accordance with the relevant ethical requirements for financial statement audits conducted by the Auditor-General and his delegates. These include the relevant independence requirements of the Accounting Professional and Ethical Standards Board's APES 110 *Code of Ethics for Professional Accountants (including Independence Standards)* (the Code) to the extent that they are not in conflict with the *Auditor-General Act 1997*. I have also fulfilled my other responsibilities in accordance with the Code. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Accountable Authority's responsibility for the financial statements

As the Accountable Authority of the Entity, the Directors are responsible under the *Public Governance, Performance and Accountability Act 2013* (the Act) for the preparation and fair presentation of annual financial statements that comply with Australian Accounting Standards – Reduced Disclosure Requirements and the rules made under the Act. The Directors are also responsible for such internal control as the Directors determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Directors are responsible for assessing the ability of the Entity to continue as a going concern, taking into account whether the Entity's operations will cease as a result of an administrative restructure or for any other reason. The Directors are also responsible for disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the assessment indicates that it is not appropriate.

Auditor's responsibilities for the audit of the financial statements

My objective is to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with the Australian National Audit Office Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with the Australian National Audit Office Auditing Standards, I exercise professional judgement and maintain professional scepticism throughout the audit. I also:

- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Entity's internal control;
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Accountable Authority;
- conclude on the appropriateness of the Accountable Authority's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Entity's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Entity to cease to continue as a going concern; and
- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

I communicate with the Accountable Authority regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

Australian National Audit Office

Jodi George

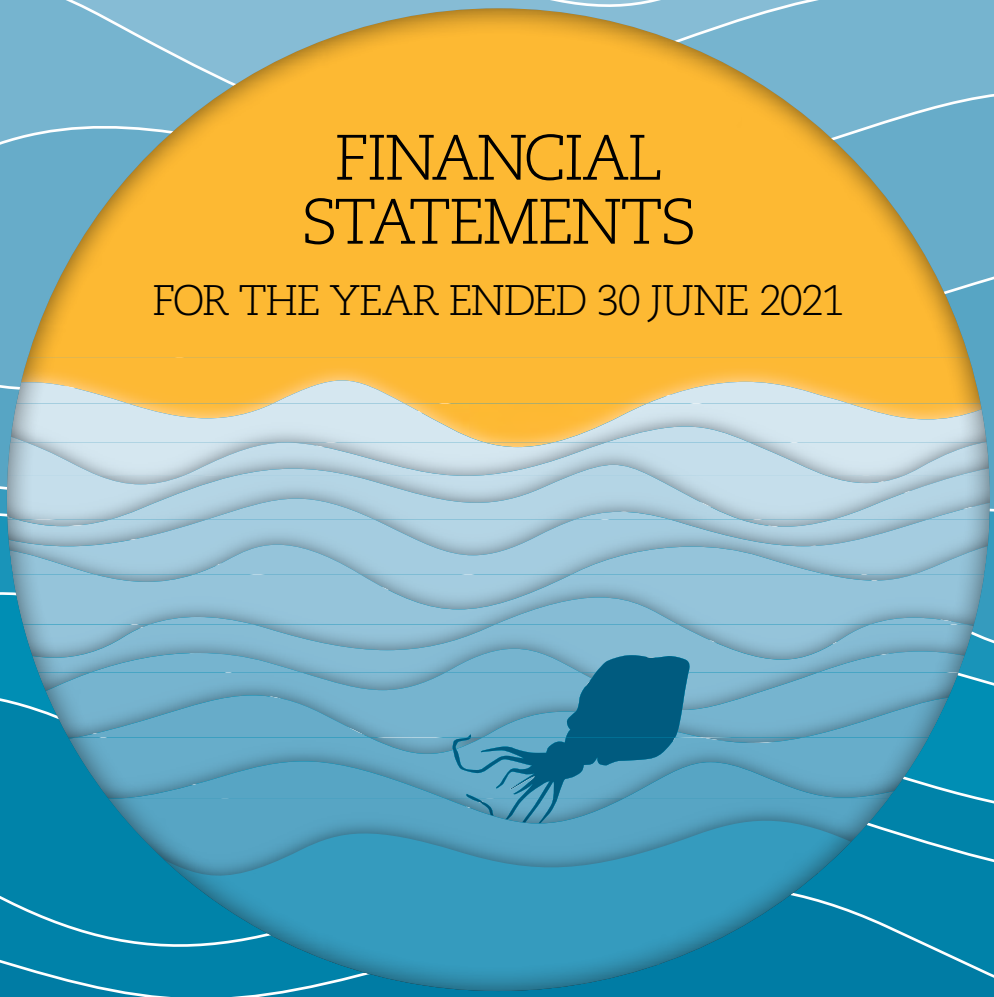
Senior Executive Director
Delegate of the Auditor-General

Canberra

18 August 2021

FINANCIAL STATEMENTS

FOR THE YEAR ENDED 30 JUNE 2021



CONTENTS

STATEMENT BY THE ACCOUNTABLE AUTHORITY (CHAIR AND CHAIR FINANCE, AUDIT AND RISK MANAGEMENT COMMITTEE), MANAGING DIRECTOR AND CHIEF FINANCIAL OFFICER

In our opinion, the attached financial statements for the period ended 30 June 2021 comply with subsection 42(2) of the *Public Governance, Performance and Accountability Act 2013* (PGPA Act), and are based on properly maintained financial records as per subsection 41(2) of the PGPA Act.

In our opinion, at the date of this statement, there are reasonable grounds to believe that the FRDC will be able to pay its debts as and when they fall due.

This statement is made in accordance with a resolution of the directors.

Signed 18-August-2021
Mr John Williams Date
Chair
Accountable Authority

Signed 18-August-2021
Dr Saranne Cooke Date
Chair Finance, Audit and Risk Management Committee

Signed 18-August-2021
Dr Patrick Hone Date
Managing Director

Signed 18-August-2021
Ms Cheryl Cole Date
Chief Financial Officer

Statement of Comprehensive Income

FOR THE PERIOD ENDED 30 JUNE 2021

	Notes	2020–21 $	2019–20 $	Original PBS budget 2020–21 $
NET COST OF SERVICES				
Expenses				
Employee benefits	1.1A	**3,192,246**	3,036,925	3,119,000
Suppliers	1.1B	**1,106,650**	1,512,070	1,322,000
Projects	1.1C	**28,243,412**	28,937,131	27,572,000
Depreciation and amortisation	2.2A	**341,387**	364,297	323,000
Finance costs	1.1D	**8,277**	10,018	–
Write-down and impairment of assets	1.1E	**6,820**	5,001	–
Other expenses	1.1F	**629,347**	575,246	780,000
Total expenses		**33,528,139**	34,440,688	33,116,000
Own-source income				
Own-source revenue				
Revenue from contracts with customers	1.2A	**191,520**	817,717	–
Interest	1.2B	**93,213**	302,329	200,000
Contributions	1.2C	**9,280,433**	8,424,865	9,173,000
Other revenue	1.2D	**150,530**	1,403,353	2,010,000
Total own-source revenue		**9,715,696**	10,948,264	11,383,000
Total own-source income		**9,715,696**	10,948,264	11,383,000
Net cost of services		**23,812,443**	23,492,424	21,733,000
Revenue from the Australian Government	1.2E	**23,210,498**	22,083,577	21,778,000
(Deficit)/Surplus on continuing operations		**(601,945)**	(1,408,847)	45,000
OTHER COMPREHENSIVE INCOME				
Items not subject to subsequent reclassification to net cost of services				
Changes in asset revaluation reserves	2.2A	**35,214**	115,315	–
Total other comprehensive income		**35,214**	115,315	–
Total comprehensive income (loss)/income		**(566,731)**	(1,293,532)	45,000

The above statement should be read in conjunction with the accompanying notes.

Statement of Financial Position

AS AT 30 JUNE 2021

	Notes	2020–21 $	2019–20 $	Original PBS budget 2020–21 $
ASSETS				
Financial assets				
Cash and cash equivalents	2.1A	**25,182,254**	26,411,348	27,090,000
Trade and other receivables	2.1B	**4,760,593**	2,306,370	1,597,000
Total financial assets		**29,942,847**	28,717,718	28,687,000
Non-financial assets[1]				
Buildings	2.2A	**670,188**	834,433	835,000
Plant and equipment	2.2A	**121,200**	129,400	143,000
Computer software	2.2A	**488,140**	601,095	661,000
Other non-financial assets	2.2B	**–**	14,070	14,000
Total non-financial assets		**1,279,528**	1,578,998	1,653,000
Total assets		**31,222,375**	30,296,716	30,340,000
LIABILITIES				
Payables				
Suppliers	2.3A	**169,068**	193,836	204,000
Projects	2.3B	**2,954,056**	1,414,377	1,414,000
Other payables	2.3C	**6,588**	–	–
Total payables		**3,129,712**	1,608,213	1,618,000
Interest bearing liabilities				
Leases	2.4A	**694,555**	847,595	849,000
Total interest bearing liabilities		**694,555**	847,595	849,000
Provisions				
Employee provisions	3.1A	**819,369**	695,438	683,000
Total provisions		**819,369**	695,438	683,000
Total liabilities		**4,643,636**	3,151,246	3,150,000
Net assets		**26,578,739**	27,145,470	27,190,000
EQUITY				
Asset revaluation reserve		**561,765**	526,551	526,000
Retained earnings		**26,016,974**	26,618,919	26,664,000
Total equity		**26,578,739**	27,145,470	27,190,000

1. Right-of-use assets are included in the following line item—Buildings.

The above statement should be read in conjunction with the accompanying notes.

Statement of Changes in Equity

FOR THE PERIOD ENDED 30 JUNE 2021

	2020–21	2019–20	Original PBS budget 2020–21
	$	$	$
RETAINED EARNINGS			
Opening balance			
Balance carried forward from previous period	**26,618,919**	28,259,516	26,619,000
Adjustment on initial application of AASB 15/AASB 1058/AASB 16	–	(231,750)	–
Adjusted opening balance	**26,618,919**	28,027,766	26,619,000
Comprehensive income			
(Deficit)/surplus for the period	**(601,945)**	(1,408,847)	45,000
Total comprehensive (loss)/income	**(601,945)**	(1,408,847)	45,000
Closing balance as at 30 June	**26,016,974**	26,618,919	26,664,000
ASSET REVALUATION RESERVE			
Opening balance			
Balance carried forward from previous period	**526,551**	411,236	526,000
Opening balance	**526,551**	411,236	526,000
Comprehensive income			
Other comprehensive income	**35,214**	115,315	–
Total comprehensive income	**35,214**	115,315	–
Closing balance as at 30 June	**561,765**	526,551	526,000
TOTAL EQUITY			
Opening balance			
Balance carried forward from previous period	**27,145,470**	28,670,752	27,145,000
Adjustment on initial application of AASB 15/AASB 1058/AASB 16	–	(231,750)	–
Adjusted opening balance	**27,145,470**	28,439,002	27,145,000
Comprehensive income			
(Deficit)/surplus for the period	**(601,945)**	(1,408,847)	45,000
Other comprehensive income/(loss)	**35,214**	115,315	–
Total comprehensive (loss)/income	**(566,731)**	(1,293,532)	45,000
Closing balance as at 30 June	**26,578,739**	27,145,470	27,190,000

The above statement should be read in conjunction with the accompanying notes.

Cash Flow Statement

FOR THE PERIOD ENDED 30 JUNE 2021

	Notes	2020–21 $	2019–20 $	Original PBS budget 2020–21 $
OPERATING ACTIVITIES				
Cash received				
Receipts from the Australian Government		**22,389,086**	24,215,784	23,122,000
Contributions		**8,794,352**	10,563,053	10,534,000
Grants		**1,978,011**	59,798	–
Interest		**93,052**	322,680	200,000
Net GST received		**2,013,746**	2,524,007	–
Other		**165,583**	1,543,688	–
Total cash received		**35,433,830**	39,229,010	33,856,000
Cash used				
Employees		**(3,061,727)**	(3,361,332)	(3,131,000)
Suppliers		**(1,213,920)**	(2,534,291)	(612,000)
Projects expenditure		**(31,506,085)**	(30,627,253)	(27,572,000)
Interest payments on lease liabilities		**(8,277)**	(10,018)	–
Other		**(692,282)**	(632,771)	(1,480,000)
Total cash used		**(36,482,291)**	(37,165,665)	(32,795,000)
Net cash (used by)/from operating activities		**(1,048,461)**	2,063,345	1,061,000
INVESTING ACTIVITIES				
Cash used				
Purchase of property, plant and equipment		**–**	–	(50,000)
Purchase of intangibles		**(27,593)**	(43,556)	(200,000)
Total cash used		**(27,593)**	(43,556)	(250,000)
Net cash (used by) investing activities		**(27,593)**	(43,556)	(250,000)
FINANCING ACTIVITIES				
Cash used				
Principal payments of lease liabilities		**(153,040)**	(161,884)	(132,000)
Total cash used		**(153,040)**	(161,884)	(132,000)
Net cash (used by) financing activities		**(153,040)**	(161,884)	(132,000)
Net (decrease)/increase in cash held		**(1,229,094)**	1,857,905	679,000
Cash and cash equivalents at the beginning of the reporting period		**26,411,348**	24,553,443	26,411,000
Cash and cash equivalents at the end of the reporting period	2.1A	**25,182,254**	26,411,348	27,090,000

The above statement should be read in conjunction with the accompanying notes.

OVERVIEW

Objectives of the FRDC

The FRDC is an Australian Government controlled entity. It is a not-for-profit entity established as a statutory corporation on 2 July 1991 under the provisions of the *Primary Industries Research and Development Act 1989* (PIRD Act). The FRDC's mission is to act as a national thought leader, facilitating knowledge creation, collaboration and innovation to shape the future of fishing and aquaculture in Australia for the benefit of the Australian people. To achieve this, the FRDC plans, invests in and manages research and development for fishing and aquaculture, and the wider community, and ensures that the resulting knowledge and innovation is adopted for impact. The FRDC also undertakes monitoring of key indicators of change across fishing and aquaculture. This helps in the evaluation of impact that results from the FRDC's investments. Information collected is also of use to decision makers, to understand and respond to emerging issues.

The FRDC's strong relationships with sectors, managers and researchers are fundamental to enable the needs of key stakeholders to be identified and addressed.

The FRDC is structured to meet the following outcome:

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

The continued existence of the FRDC in its present form, and with its present outcome, is dependent on Australian Government policy, and on continuing funding from the Australian Government for the FRDC's outcome.

The basis of preparation

The financial statements are general purpose financial statements, and are required by section 42 of the *Public Governance, Performance and Accountability Act 2013*.

The financial statements have been prepared in accordance with:

a) *Public Governance, Performance and Accountability (Financial Reporting) Rule 2015 (FRR)*, and

b) Australian Accounting Standards and Interpretations—Reduced Disclosure Requirements issued by the Australian Accounting Standards Board (AASB) that apply for the reporting period.

The financial statements have been prepared on an accrual basis, and in accordance with the historical cost convention, except for certain assets and liabilities at fair value. Except where stated, no allowance is made for the effect of changing prices on the results or the financial position. The financial statements are presented in Australian dollars.

New Australian Accounting Standards

Adoption of new Australian Accounting Standard requirements

No accounting standard has been adopted earlier than the application date as stated in the standard.

The new standards, revised standards, interpretations and amending standards that were issued prior to the signing of the statements by the: Board Chair; Finance, Audit and Risk Management Committee Chair; Managing Director; and Chief Financial Officer; and are applicable to the current reporting period, did not have a material impact, and are not expected to have a future material impact, on the FRDC's financial statements.

Taxation

The FRDC is exempt from all forms of taxation except Fringe Benefits Tax (FBT) and the Goods and Services Tax (GST).

Comparative

Comparative figures have been adjusted so they conform with changes in the presentation of these financial statements at Note 2.1B: Trade and other receivables.

Events after the reporting period

Departmental

No reportable events have occurred after the Statement of Financial Position date.

FRDC budgetary explanation of major variances

The following information provides a comparison of the original budget as presented in the 2020–21 Portfolio Budget Statements (PBS) to the 2020–21 final outcome as presented in accordance with Australian Accounting Standards—reduced disclosure requirements for the FRDC. The budget is not audited. Explanations of major variances are provided below.

Major variance and explanations from original budget to actual result for 2020–21

Statement of Comprehensive Income

Supplier expenses were lower than budget due to reduced ICT and external providers engaged.

Project contractual commitments originally forecast can vary due to the timing of completion of project deliverables. Project deliverables are subject to significant variation due to research delays. In 2020–21 project expenses were higher than budget, largely driven by the timing of achieved project deliverables.

Other expenses were lower than budget due to reduced communications external provider costs that were originally forecast.

Other revenue originally forecast allowed for additional increased project contributions, the contributions were received and classified applying the Accounting Standard AASB 15 *Revenue from Contracts with Customers*, and are disclosed in project contract liabilities.

Revenue from Australian Government were higher than budget due to the 2020–21 Australian Gross Value Production (AGVP) Determination from the Department of Agriculture, Water and the Environment, which was higher than originally forecast.

The original PBS budget has been reclassified under AASB 1055 *Budgetary Reporting* (6 and 12) to represent the actual result for the following line items:

- Contributions were increased $1.1 million to include the industry levy contributions for the Australian Fisheries Management Authority R&D levies, and the Australian Prawn Farmers Association levies.
- Revenue from Australian Government has been reduced by $1.1 million to remove the industry levy contributions for the Australian Fisheries Management Authority R&D levies, and the Australian Prawn Farmers Association prawn levies.

The changes in the asset revaluation reserves were higher due to the annual revaluation of fixed assets.

Statement of Financial Position

Cash and cash equivalents were lower due to an increase in cash used, mainly driven by contractual project commitment expenditure, where the spend was higher than originally forecast.

Trade and other receivables may vary due to the timing of the Department of Agriculture, Water and the Environment AGVP Determination, which can result in increases to aged debtors at financial year end. The increase for 2020–21 is largely due to revenue from Australian Government final AGVP and state industry contribution invoices at the end of the financial year.

Building and interest bearing liabilities decreased as a result of the current lease term for the Adelaide office expiring on 30 March 2021 and was not renewed as at 30 June 2021.

Intangibles varied due to the intangible costs and extent of works were lower than forecast.

Project payables were higher than budget due to the application of the Accounting Standard AASB 15 *Revenue from Contracts with Customers*, resulting in the increase to project liabilities. At the time of preparing the budget, this increase was not anticipated.

Employee provisions were higher than budget due to higher employee leave balances than forecast and changes in leave provision parameters.

Retained earnings decreased due to the decrease in net income as a result from higher project expenditure.

Statement of Cash Flows

The variance between actual and forecast cash and cash equivalents for the period is explained in the Statement of Comprehensive Income and Statement of Financial Position.

Financial performance

Note 1.1: Expenses

Note 1.1A: Employee benefits

	2020–21	2019–20
	$	$
Wages and salaries	**2,439,316**	2,174,828
Superannuation		
Defined contribution plans	**168,007**	186,191
Defined benefit plans	**312,536**	364,549
Leave and other entitlements	**272,387**	311,357
Total employee benefits	**3,192,246**	3,036,925

Accounting policy

Accounting policies for employee related expenses are contained in the People and relationships section Note 3.1A.

Note 1.1B: Suppliers

	2020–21	2019–20
	$	$
Goods and services supplied or rendered		
Asset purchases less than $5,000	**53,053**	20,589
Audit fees	**36,000**	36,000
External service providers	**222,364**	483,853
Insurance	**38,976**	32,640
Information technology	**410,212**	503,612
Joint research and development corporation (RDC) activities	**20,506**	72,390
Legal	**26,997**	27,247
Office supplies	**10,926**	14,292
Postage and couriers	**1,328**	1,883
Property	**25,250**	22,424
Recruitment/director selection costs	**39,116**	–
Representation	**8,738**	31,728
Representative organisations consultation	**42,777**	46,699
Telecommunications	**31,329**	34,882
Training	**27,374**	79,031
Travel	**78,814**	70,178
Other	**10,313**	17,814
Total goods and services supplied or rendered	**1,084,073**	1,495,262
Other suppliers		
Workers compensation expenses	**6,907**	11,236
Operating lease rentals[1]	**15,670**	5,572
Total other suppliers	**22,577**	16,808
Total suppliers	**1,106,650**	1,512,070

1. **Operating lease**

   The FRDC has no short-term lease commitments as at 30 June 2021.

   Adelaide office

   The lease term for the office accommodation at Wine Australia, corner Botanic and Hackney Roads, Adelaide, South Australia, expired 30 March 2021, and remains on a month to month arrangement. A new lease will be finalised with the new lessor National Wine Centre Australia by August 2021.

Accounting policy

Short-term leases and leases of low-value assets

The FRDC has no right-of-use assets and lease liabilities for short-term leases or leases of low-value assets, that have a lease term of 12 months or less.

Note 1.1C: Projects

	2020–21	2019–20
	$	$
Australian Government entities (related parties)	**1,909,634**	2,979,893
State and territory governments	**7,068,334**	5,227,433
Universities and educational bodies	**10,921,752**	8,546,062
Cooperative research centres	**178,200**	–
Research and development corporations	**51,065**	175,622
Industry (commercial, recreational and Indigenous)	**5,967,315**	8,185,701
Overseas research entities	**12,689**	27,106
Private providers	**2,134,423**	3,795,314
Total projects	**28,243,412**	28,937,131

Accounting policy

The FRDC recognises project liabilities through project agreements that require research partners to perform services or provide facilities, or to meet eligibility criteria. In these cases, liabilities are recognised only to the extent that the services required have been performed, an invoice issued consistent with the contractual requirements, and the eligibility criteria have been satisfied by the research partner to the FRDC's satisfaction and approved invoice payment by the relevant delegate.

Project commitments

Project commitments comprise the future funding of approved projects that are contingent on the achievement of agreed deliverables over the life of those projects (project agreements are exchanged prior to release of the first payment on a project). Projects, where amounts were payable but were unpaid at the end of the period, have been brought to account as project payables. The FRDC contracts to fund projects in future years in advance of receipt of the income needed to fund them. FRDC manages this risk by having the project agreement allow for termination at its sole discretion for any reason. If the FRDC were to terminate a project agreement, it would only be liable to compensate the research partner for any reasonable costs in respect of unavoidable loss incurred by the research provider and directly attributable to the termination of the agreement, provided that the costs are fully substantiated to the FRDC.

	2020–21	2019–20
	$	$
Project commitments are payable as follows:		
Within 1 year (unpaid deliverables up to 30 June 2022)	**34,041,806**	36,613,413
Greater than 1 year (1 July 2022 onwards)	**21,829,635**	22,289,485
Total project commitments	**55,871,441**	58,902,897

Note: Project commitments are GST inclusive.

Note 1.1D: Finance costs

	2020–21	2019–20
	$	$
Finance leases[1]	8,277	10,018
Total finance costs	8,277	10,018

1. The above lease disclosures should be read in conjunction with the accompanying Notes 1.1B, 2.2A and 2.4A.

Note 1.1E: Write down and impairment of assets

	2020–21	2019–20
	$	$
Write down of intangible assets[1]	6,820	–
Write down of ASCo shareholding investment[1]	–	5,001
Total write down and impairment of assets	6,820	5,001

1. FRDC's software was written down at 30 June 2021 (refer Note 2.2: Non-financial assets).
2. FRDC's one-eighteenth share in Australian Seafood Co-Products Pty Ltd (ASCo) was written down to zero at 30 June 2020, due to the closure of the company.

Note 1.1F: Other expenses

	2020–21	2019–20
	$	$
Communications		
Annual report	24,020	25,321
Factsheets	–	11,922
Communications external provider	99,698	159,682
Media monitoring and releases	25,396	33,600
Other stakeholder consultation	5,079	25,500
FISH magazine	454,823	277,510
Sponsorship	10,500	8,446
Corporate merchandise	–	2,300
Photos and videos	735	368
Education materials and events	9,096	30,597
Total other expenses	629,347	575,246

Note 1.2: Own-source income and revenue from the Australian Government

Own-source revenue

Note 1.2A: Revenue from contracts with customers

	2020–21	2019–20
	$	$
Australian Government entities (related parties)—over time	191,520	817,717
Total revenue from contracts with customers	191,520	817,717

Accounting policy

The FRDC receives revenue from the Australian Government under which it manages a suite of research activities. These activities are listed at Note 3.4B. FRDC has specific funding agreements with the Australian Government that include enforceable rights and performance obligations. The FRDC initially recognises the funding received as a credit liability entry to recognise the contracted liability (refer Note 2.3B). Once the performance obligations have been satisfied as per the funding agreement milestones over time, it is then recognised as revenue from contracts with customers, unwinding the liability.

Note 1.2B: Interest

	2020–21	2019–20
	$	$
Deposits	93,213	302,329
Total interest	93,213	302,329

Accounting policy

Interest revenue is recognised using the effective interest method.

Note 1.2C: Contributions

	2020–21	2019–20
	$	$
Fisheries		
Australian Prawn Farmers Association	292,421	161,555
Australian Fisheries Management Authority	937,483	826,902
New South Wales	526,005	584,581
Northern Territory	212,189	217,807
Queensland	730,000	683,776
South Australia	1,437,361	1,148,332
Tasmania	2,287,523	2,728,387
Victoria	317,471	281,108
Western Australia	2,539,980	1,792,417
Total contributions	9,280,433	8,424,865

Accounting policy

Contributions are recognised when:

a) the FRDC obtains control of the contribution or the right to receive the contribution,

b) it is probable that the economic benefits comprising the contribution will flow to the FRDC, and

c) the amount of the contribution can be reliably measured.

Note 1.2D: Other revenue

	2020–21	2019–20
	$	$
Project funds received	**47,586**	1,213,991
Project refunds of prior years expenditure	**102,944**	189,072
Other	**–**	290
Total other revenue	**150,530**	1,403,353

Accounting policy

Project funds received are recognised when they are entitled to be received by the FRDC.

Project refunds from research partners are brought to account when received.

Note 1.2E: Revenue from the Australian Government

	2020–21	2019–20
	$	$
Department of Agriculture, Water and the Environment		
Corporate Commonwealth entity payment item of 0.50% of AGVP[1]	**15,613,565**	14,893,460
Matching of industry contributions[2]	**7,596,933**	7,190,117
Total revenue from the Australian Government	**23,210,498**	22,083,577

1. AGVP is the average gross value of fisheries production for the current year and the two preceding financial years. The Australian Government's contribution of 0.50% of AGVP is made on the grounds that the FRDC exercises a stewardship role in relation to fisheries resources on behalf of the Australian community.
2. Matching of industry contributions (up to 0.25% of AGVP) by the Australian Government.

Accounting policy

Revenue from the Australian Government

Revenues from the Australian Government are recognised when they are entitled to be received by the FRDC.

Funding received or receivable from non-corporate Commonwealth entities (appropriated to the non-corporate Commonwealth entity as a corporate Commonwealth entity payment item for payment to this entity) is recognised as revenue from Government by the corporate Commonwealth entity unless the funding is in the nature of an equity injection or a loan.

Financial position

Note 2.1: Financial assets

Note 2.1A: Cash and cash equivalents

	2020–21	2019–20
	$	$
Cash on hand or at call	5,182,254	6,411,348
Cash on deposit:		
Fixed term deposit—original term 3 months	15,000,000	–
Fixed term deposit—original term 2 months	5,000,000	15,000,000
Fixed term deposit—original term 1 month	–	5,000,000
Total cash and cash equivalents	25,182,254	26,411,348

Accounting policy

Cash is recognised at its nominal amount. Cash and cash equivalents includes:

a) cash on hand, and

b) demand deposits in bank accounts with an original maturity of three months or less that are readily convertible to known amounts of cash and subject to insignificant risk of changes in value.

Note 2.1B: Trade and other receivables

	2020–21	2019–20
	$	$
Goods and services receivables		
Goods and services[1]	**2,195,298**	712,968
Total goods and services receivables	**2,195,298**	712,968
Department of Agriculture, Water and the Environment		
Receivables	**2,442,562**	1,429,630
Total receivables from Department of Agriculture, Water and the Environment	**2,442,562**	1,429,630
Other receivables		
GST receivable from the Australian Taxation Office	**120,600**	156,484
FBT receivable from the Australian Taxation Office[1]	**1,973**	2,148
Interest receivable from the Commonwealth Bank[1]	**161**	5,140
Total other receivables	**122,733**	163,772
Total trade and other receivables	**4,760,593**	2,306,370
Trade and other receivables are expected to be recovered		
No more than 12 months	**4,760,593**	2,306,370
Total trade and other receivables	**4,760,593**	2,306,370
Trade and other receivables aged as follows		
Not overdue[2]	**4,232,593**	2,239,601
Overdue by		
0 to 30 days	**528,000**	–
31 to 60 days	**–**	66,769
Total trade and other receivables	**4,760,593**	2,306,370

1. Goods and services in relation to FBT receivable and interest receivable were reclassified in the comparative year, and are now disclosed in other receivables.
2. Credit terms for goods and services are within 30 days (2019–20: 30 days).

Accounting policy

Financial assets

Trade receivables, loans and other receivables that are held for the purpose of collecting the contractual cash flows where the cash flows are solely payments of principal and interest, that are not provided at below-market interest rates, are subsequently measured at amortised cost using the effective interest method adjusted for any loss allowance.

Note 2.2: Non-financial assets

Note 2.2A: Reconciliation of the opening and closing balances of property, plant and equipment and intangibles

Reconciliation of the opening and closing balances of property, plant and equipment and intangibles				
	Buildings[1]	Plant and equipment	Intangibles (computer software)	Total
	$	$	$	$
As at 1 July 2020				
Gross book value	1,009,479	129,400	1,315,630	2,454,509
Accumulated depreciation and amortisation	(175,046)	–	(714,535)	(889,581)
Total as at 1 July 2020	834,433	129,400	601,095	1,564,928
Additions				
Internally developed	–	–	27,593	27,593
Revaluations recognised in other comprehensive income[2]	–	35,214	–	35,214
Write down recognised in net cost of services[3]	–	–	(6,820)	(6,820)
Depreciation and amortisation	–	(43,414)	(133,728)	(177,142)
Depreciation on right-of-use assets	(164,245)	–	–	(164,245)
Total as at 30 June 2021	670,188	121,200	488,140	1,279,528
Total as at 30 June 2021 represented by				
Gross book value	1,009,479	121,200	1,321,362	2,452,041
Accumulated depreciation and amortisation	(339,291)	–	(833,222)	(1,172,513)
Total as at 30 June 2021	670,188	121,200	488,140	1,279,528
Carrying amount of right-of-use assets	670,188	–	–	670,188

1. Right-of-use assets (Building leases)
   Canberra office
   The lease for the office accommodation at 25 Geils Court, Deakin, Australian Capital Territory expires 31 July 2023, with a 3 year right of renewal until 31 July 2026. Lease payments are subject to a 3 per cent annual increase in accordance with the lease agreement.

   Adelaide office
   The lease term for the office accommodation at Wine Australia, corner Botanic and Hackney Roads, Adelaide, South Australia, expired 30 March 2021, and remains on a month to month arrangement. A new lease will be finalised with the new lessor National Wine Centre Australia by August 2021.
2. Revaluations of non-financial assets
   As at 30 June 2021, Jones Lang LaSalle Public Sector Valuations conducted a revaluation of plant and equipment. A revaluation increment of $35,214 for 2020–21 (2019–20: increment of $115,315) was applied to the asset revaluation reserve by asset class and included in the equity section of the Statement of Financial Position.
3. FRDC software was written down at 30 June 2021 (refer Note 1.1E).

   No indicators of impairment were found for plant and equipment or intangibles.

   No plant and equipment is expected to be sold or disposed of within the next 12 months.

Accounting policy

Assets are recorded at cost on acquisition except as stated below. The cost of acquisition includes the fair value of assets transferred in exchange and liabilities undertaken. Financial assets are initially measured at their fair value plus transaction costs where appropriate.

Assets acquired at no cost, or for nominal consideration, are initially recognised as assets and income at their fair value at the date of acquisition, unless acquired as a consequence of restructuring of administrative arrangements. In the latter case, assets are initially recognised as contributions by owners at the amounts at which they were recognised in the transferor's accounts immediately prior to the restructuring.

Asset recognition threshold

Purchases of property, plant and equipment are recognised initially at cost in the Statement of Financial Position, except for purchases costing less than $5,000 that are expensed in the year of acquisition (other than where they form part of a group of similar items where the value is greater than $5,000).

Lease right-of-use (ROU) assets

Leased ROU assets are capitalised at the commencement date of the lease and comprise of the initial lease liability amount, initial direct costs incurred when entering into the lease less any lease incentives received. These assets are accounted for by Commonwealth lessees as separate asset classes to corresponding assets owned outright, but included in the same column as where the corresponding underlying assets would be presented if they were owned.

On initial adoption of AASB 16 the FRDC has adjusted the ROU assets at the date of initial application by the amount of any provision for onerous leases recognised immediately before the date of initial application. Following initial application, an impairment review is undertaken for any ROU lease asset that shows indicators of impairment and an impairment loss is recognised against any ROU lease asset that is impaired. Lease ROU assets continue to be measured at cost after initial recognition in Commonwealth agency, general government sector (GGS) and whole of government financial statements.

Revaluations

Following initial recognition at cost, property, plant and equipment (excluding ROU assets) are carried at fair value less subsequent accumulated depreciation and accumulated impairment losses. Valuations are conducted with sufficient frequency to ensure that the carrying amounts of assets do not differ materially from the assets' fair values as at the reporting date. The regularity of independent valuations depend on the volatility of movements in market values for the relevant assets.

Revaluation adjustments are made on a class basis. Any revaluation increment is credited to equity under the heading of asset revaluation reserve except to the extent that it reverses a previous revaluation decrement of the same asset class that was previously recognised in the surplus/deficit. Revaluation decrements for a class of assets are recognised directly in the surplus/deficit except to the extent that they reversed a previous revaluation increment for that class.

Any accumulated depreciation as at the revaluation date is eliminated against the gross carrying amount of the asset, and the asset restated to the revalued amount.

Depreciation

Depreciable property, plant and equipment assets are written off to their estimated residual values over their estimated useful lives to the FRDC using, in all cases, the straight-line method of depreciation.

Depreciation rates (useful lives), residual values and methods are reviewed at each reporting date and necessary adjustments are recognised in the current, or current and future reporting periods, as appropriate.

Depreciation rates applying to each class of depreciable asset are based on the following useful lives:

	2020–21	2019–20
Buildings (including ROU assets)	**Lease term**	Lease term
Leasehold improvements	**Lease term**	Lease term
Plant and equipment	**up to 5 years**	up to 5 years

Impairment

All assets were assessed for impairment at 30 June 2021. Where indications of impairment exist, the asset's recoverable amount is estimated and an impairment adjustment made if the asset's recoverable amount is less than its carrying amount.

The recoverable amount of an asset is the higher of its fair value less costs of disposal and its value in use. Value in use is the present value of the future cash flows expected to be derived from the asset. Where the future economic benefit of an asset is not primarily dependent on the asset's ability to generate future cash flows, and the asset would be replaced if the entity were deprived of the asset, its value in use is taken to be its depreciated replacement cost.

Derecognition

An item of property, plant and equipment is derecognised upon disposal, or when no further future economic benefits are expected from its use or disposal.

Intangibles

The FRDC's intangibles comprise internally developed software and purchased software for internal use. These assets are carried at cost less accumulated amortisation and accumulated impairment losses.

Software is amortised on a straight-line basis over its anticipated useful life. The useful lives of the FRDC's software is 10 years (2019–20: 10 years).

All software assets were assessed for indications of impairment as at 30 June 2021.

Note 2.2B: Other non-financial assets

	2020–21	2019–20
	$	$
Prepayments	–	14,070
Total other non-financial assets	–	14,070

No indicators of impairment were found for other non-financial assets.

Note 2.3: Payables

Note 2.3A: Suppliers and other payables

	2020–21	2019–20
	$	$
Trade creditors and accruals	104,504	122,158
FBT payable	1,328	1,866
PAYG payable	63,236	69,812
Total suppliers and other payables	**169,068**	193,836

Settlement is usually made within 30 days.

Note 2.3B: Projects

	2020–21	2019–20
	$	$
State and territory government expense	–	535,609
Universities and educational bodies	46,230	–
Industry (commercial, recreational and Indigenous)	5,500	–
Contract liability[1]	2,795,559	817,548
Other	106,767	61,220
Total projects	**2,954,056**	1,414,377

1. The contract liability is associated with funding provided for research and development activities under Funding Agreements with the Department of Agriculture, Water and the Environment and NSW Department of Primary Industries as detailed below.

Department of Agriculture, Water and the Environment

- Assist with data generation to support Australian Pesticides and Veterinary Medicines Authority application
- Development of on-farm biosecurity plan implementation support programs for aquaculture industry
- AQUAPLAN Development Workshop Publication
- Aquatic Animal Health Training Scheme 2019–2022
- Compilation of Information for the Marine Mammal Protection Act Comparability Finding Process
- Indigenous Engagement Strategy
- Finfish—Ectoparasites—Ag Vet 6—4-G1AHKTN.

The FRDC recognised a contract liability in 2019–20 totalling: $261,621 (2019–20 $291,548).

NSW Department of Primary Industries

- NSW seafood product development program
- Research project to investigate and develop a framework to establish Aboriginal commercial fishing, aquaculture and other related businesses in NSW
- Research and development for Harvest Strategies in NSW.

The FRDC recognised a contract liability in 2020–21 totalling: $799,900 (2019–20 $526,000).

Australian Maritime Safety Authority

- Seafood Industry Safety Initiative (SISI) funding support.

The FRDC recognised a contract liability in 2020–21 totalling: $690,000 (2019–20 $Nil).

Great Barrier Reef Marine Park Authority

- Habitat ecological risk assessment for eco-regions with high trawl footprints, in southern Queensland.

The FRDC recognised a contract liability in 2020–21 totalling: $300,000 (2019–20 $Nil)

Accounting policy

Project payables are recognised at their nominal amounts, being the amounts at which the liabilities will be settled. They relate to payments approved on achievement of agreed deliverables, but which were unpaid at the end of the reporting period. Settlement is usually made within 30 days.

As per AASB 15 *Revenue from Contracts with Customers*, contract liabilities are recognised at their nominal amounts, being the amounts at which the liabilities are not yet settled. They relate to payments received for funding provided for research and development activities, of which specific performance obligations were not met at the end of the reporting period.

Note 2.3C: Other payables

	2020–21	2019–20
	$	$
Other	6,588	–
Total other payables	**6,588**	–

Note 2.4: Interest bearing liabilities

Note 2.4A: Leases

	2020–21	2019–20
	$	$
Lease liabilities[1]	694,555	847,595
Total leases	**694,555**	847,595

1. Total cash outflow for leases for the year ended 30 June 2021 was $153,040 plus finance costs of $8,277.

	2020–21	2019–20
	$	$
Maturity analysis—contractual undiscounted cash flows		
Within 1 year	132,166	161,318
Between 1 to 5 years	581,948	714,114
Total leases	**714,114**	875,432

The FRDC in its capacity as lessee has leased office accommodation located at 25 Geils Court, Deakin, Australian Capital Territory, which expires 31 July 2023, and has a 3 year right of renewal until 31 July 2026. Lease payments are paid on a monthly basis and subject to a 3 per cent annual increase in accordance with the lease agreement.

The above lease disclosures should be read in conjunction with the accompanying Notes 1.1B, 1.1D, 2.2A and 2.4A.

Accounting policy

For all new contracts entered into, the FRDC considers whether the contract is, or contains a lease. A lease is defined as 'a contract, or part of a contract, that conveys the right to use an asset (the underlying asset) for a period of time in exchange for consideration'.

Once it has been determined that a contract is, or contains a lease, the lease liability is initially measured at the present value of the lease payments unpaid at the commencement date, discounted using the interest rate implicit in the lease, if that rate is readily determinable, or the department's incremental borrowing rate.

Subsequent to initial measurement, the liability will be reduced for payments made and increased for interest. It is remeasured to reflect any reassessment or modification to the lease. When the lease liability is remeasured, the corresponding adjustment is reflected in the right-of-use asset or profit and loss depending on the nature of the reassessment or modification.

People and relationships

Note 3.1: Employee provisions

Note 3.1A: Employee provisions

	2020–21	2019–20
	$	$
Leave	**819,369**	695,438
Total employee provisions	**819,369**	695,438
Employee provisions that could be settled		
No more than 12 months	**689,122**	615,674
More than 12 months	**130,247**	79,764
Total employee provisions	**819,369**	695,438

Accounting policy

Liabilities for short-term employee benefits and termination benefits expected within 12 months of the end of reporting period are measured at their nominal amounts. Other long-term employee benefits are measured as net total of the present value of the defined benefit obligation at the end of the reporting period minus the fair value at the end of the reporting period of plan assets (if any) out of which the obligations are to be settled directly.

Leave

The liability for employee benefits includes provision for annual leave and long service leave. The leave liabilities are calculated on the basis of employees' remuneration at the estimated salary rates that will be applied at the time the leave is taken, including the entity's employer superannuation contribution rates to the extent that the leave is likely to be taken during service rather than paid out on termination. The estimate of the present value of the liability takes into account attrition rates and pay increases through promotion and inflation.

Superannuation

The FRDC's staff are members of the Public Sector Superannuation Scheme (PSS), or the PSS accumulation plan (PSSap), or other superannuation funds held outside the Australian Government.

The PSS is a defined benefit scheme for the Australian Government. The PSSap and any other superannuation funds are defined contribution schemes.

The liability for defined benefits is recognised in the financial statements of the Australian Government and is settled by the Australian Government in due course. This liability is reported in the Department of Finance's administered schedules and notes.

The FRDC makes employer contributions to the employee's defined benefit superannuation scheme at rates determined by an actuary to be sufficient to meet the current cost to the Australian Government. The entity accounts for the contributions as if they were contributions to defined contribution plans.

Note 3.2: Key management personnel remuneration

Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of the FRDC, directly or indirectly, including any director of the board (whether executive or otherwise) of the FRDC. The FRDC has determined the key management personnel to be the non-executive directors, the Managing Director and senior general managers. Key management personnel remuneration is reported in the table below:

	2020–21	2019–20
	$	$
Short-term employee benefits (salary plus annual leave expense)	**1,548,977**	1,518,401
Post-employment benefits (superannuation)	**245,057**	243,247
Other long-term employee benefits (accrued long service leave)	**47,599**	44,265
Total key management personnel remuneration expenses[1]	**1,841,634**	1,805,913

1. The total number of key management personnel that are included in the above table is 15 (2019–20: 14). They are made up of:
   - one non-executive director (Chair)
   - seven non-executive directors
   - one Managing Director
   - four senior general managers
   - one senior general manager (retired 7 July 2020)
   - one senior general manager (resigned 31 May 2021).

Note 3.3: Annual total remuneration ranges (including superannuation) paid to key management personnel

	2020–21	2019–20
Nil to $39,999	**1**	2
$40,000 to $69,999	**8**	7
$180,000 to $239,999	**5**	3
$280,000 to $309,999	**0**	1
$360,000 to $389,999	**1**	1
Total number of key management personnel	**15**	14

Note 3.4: Related party disclosures

Related party relationships

The FRDC is an Australian Government controlled entity. Related parties to this entity are non-executive directors, the Managing Director, and senior general managers and other Australian Government entities.

The non-executive directors and the Managing Director of the FRDC during the year were:	
Mr John Williams	Chair (Member People and Culture Committee)
Dr Kathryn Brooks	Director (Member Finance, Audit and Risk Management Committee)
Professor Colin D. Buxton	Director (Deputy Chair)
Dr Saranne Cooke	Director (Chair Finance, Audit and Risk Management Committee—commenced 1 September 2020) (Member Finance, Audit and Risk Management Committee)
Ms Katina Hodson-Thomas	Director (Member People and Culture Committee)
Dr Patrick Hone	Managing Director (Member Investment Mechanisms Working Group)
Mr Mark King	Director (Chair People and Culture Committee)
Mr John Lloyd	Director (Member Finance, Audit and Risk Management Committee)
Dr Lesley MacLeod	Director (Member Finance, Audit and Risk Management Committee) (Chair Finance, Audit and Risk Management Committee—ceased 31 August 2020)

Note 3.4A: Transactions with director-related entities

The FRDC's practice is to disclose all transactions with an entity with whom a director has an association. This means that where directors have disclosed a material personal interest, all the transactions with that entity will be disclosed. Typically, the FRDC will not transact with all the entities for which a director has made such a declaration. The transactions that are not with related parties as defined by AASB 124 *Related Party Disclosures*, are identified below with an asterisk (*).

The FRDC's 'Board governance policy' provides guidance to directors on how the FRDC deals with material personal interests. Where a director has an association with an entity where a conflict has the potential to arise, in addition to the duty to disclose that association, the director absents him/herself from both the discussion and the decision-making process.

Given the breadth of Australian Government activities, related parties may transact with the government sector in the same capacity as ordinary citizens. Such transactions include the payment or refund of taxes, receipt of a Medicare rebate or higher education loans. These transactions have not been separately disclosed in this note.

The directors disclosed material personal interests during the directors' related period.

Director	Organisation and position held	Nature of interest
Dr K. Brooks	OzFish Unlimited *Non-Executive Director* 1 July 2020 to current	Research projects or work undertaken by the organisation
	Kal Analysis Pty Ltd *Director* 1 July 2020 to 30 June 2021	Research projects or work undertaken by the organisation
	School of Humanities and Social Sciences, Faculty of Arts and Education Deakin University *Adjunct Associate Professor* 1 July 2020 to current	Research projects or work undertaken by the organisation
Professor C.D. Buxton	Southern Rock Lobster Ltd *Chair* 1 July 2020 to current	Research projects or work undertaken by the organisation
	Institute for Marine and Antarctic Studies University of Tasmania * *Adjunct Professor* 1 July 2020 to current	Research projects or work undertaken by the organisation
Dr P. Hone	Council of Rural Research and Development Corporations *Member of the Executive and CEO's Committee* 1 July 2020 to 30 April 2021	Research projects or work undertaken by the organisation

The following transactions occurred during the directors' related period with these entities.

Transactions with related entities	2020–21		2019–20	
	Expenditure	Income	Expenditure	Income
OzFish Unlimited	–	–	2,454	–
Kal Analysis Pty Ltd	–	–	38,566	–
School of Humanities and Social Sciences, Faculty of Arts and Education Deakin University	**87,885**	–	345,652	–
Southern Rock Lobster Ltd	**264,000**	–	191,290	852
Institute for Marine and Antarctic Studies University of Tasmania	**6,235,271**	–	3,840,665	–
Council of Rural Research and Development Corporations	**22,159**	–	51,940	–

All transactions were conducted under normal terms and conditions and include GST.

Note 3.4B: Other related party disclosures

Department of Agriculture, Water and the Environment

The FRDC has a Research & Development Funding Head Agreement with the Department of Agriculture, Water and the Environment under which it manages the suite of activities detailed below:

- Assist with data generation to support Australian Pesticides and Veterinary Medicines Authority application
- National Carp Control Program
- Development of on-farm biosecurity plan implementation support programs for the aquaculture industry
- AQUAPLAN Development Workshop Publication
- Aquatic Animal Health Training Scheme 2019–2022
- Compilation of Information for the Marine Mammal Protection Act Comparability Finding Process
- Indigenous Engagement Strategy
- Finfish—Ectoparasites—Ag Vet 6—4-G1AHKTN
- Rural R&D for Profit: Growing a profitable, innovative and collaborative Australian Yellowtail Kingfish aquaculture industry: bringing 'white' fish to the market.

The FRDC has received new funding from the Department of Agriculture, Water and the Environment in 2020–21 totalling: $310,271 (2019–20: $877,515).

Agricultural Innovation Australia

The FRDC is one of 15 members of the Agricultural Innovation Australia (AIA), a company limited by guarantee. The constitution of AIA prohibits the distribution of any assets and income to its members. FRDC has no ownership or controlling interest in AIA that would require recognition or disclosure within FRDC's financial statements. In 2020–21, FRDC paid membership fees of $65,000 to AIA.

Financial instruments and fair value measurement

Note 4.1: Financial instruments

Note 4.1A: Categories of financial instruments

	2020–21	2019–20
	$	$
Financial assets at amortised cost		
Cash and cash equivalents	**25,182,254**	26,411,348
Trade and other receivables	**2,197,431**	720,256
Total financial assets at amortised cost	**27,379,685**	27,131,604
Total financial assets	**27,379,685**	27,131,604
Financial liabilities		
Financial liabilities measured at amortised cost		
Suppliers and other payables	**104,504**	122,158
Projects	**2,954,056**	1,414,377
Total financial liabilities measured at amortised cost	**3,058,560**	1,536,535
Total financial liabilities	**3,058,560**	1,536,535

Accounting policy

Financial assets

As per AASB 9 *Financial Instruments*, the FRDC classifies its financial assets in the following category:

- financial assets measured at amortised cost.

The classification depends on both the entity's business model for managing the financial assets and contractual cash flow characteristics at the time of initial recognition. Financial assets are recognised when the entity becomes a party to the contract and, as a consequence, has a legal right to receive or a legal obligation to pay cash and derecognised when the contractual rights to the cash flows from the financial asset expire or are transferred upon trade date.

Comparatives have not been restated on initial application.

Financial assets at amortised cost

Financial assets included in this category need to meet two criteria:

1. the financial asset is held in order to collect the contractual cash flows, and
2. the cash flows are solely payments of principal and interest (SPPI) on the principal outstanding amount.

Amortised cost is determined using the effective interest method.

Effective interest method

Income is recognised on an effective interest rate basis for financial assets that are recognised at amortised cost.

Impairment of financial assets

Financial assets are assessed for impairment at the end of each reporting period based on expected credit losses, using the general approach which measures the loss allowance based on an amount equal to lifetime expected credit losses where risk has significantly increased, or an amount equal to 12-month expected credit losses if risk has not increased.

The simplified approach for trade, contract and lease receivables is used. This approach always measures the loss allowance as the amount equal to the lifetime expected credit losses.

A write-off constitutes a derecognition event where the write-off directly reduces the gross carrying amount of the financial asset.

Financial liabilities

Financial liabilities are classified as either financial liabilities 'at fair value through profit or loss' or other financial liabilities.

Financial liabilities are recognised and derecognised upon 'trade date'.

Financial liabilities at amortised cost

Financial liabilities, including borrowings, are initially measured at fair value, net of transaction costs. These liabilities are subsequently measured at amortised cost using the effective interest method, with interest expense recognised on an effective interest basis.

Supplier and other payables are recognised at amortised cost. Liabilities are recognised to the extent that the goods or services have been received (and irrespective of having been invoiced).

Note 4.1B: Net gain or loss from financial assets

	2020–21	2019–20
	$	$
Financial assets at amortised cost		
Interest revenue (Note 1.2B)	**93,213**	302,329
Net gains on financial assets at amortised cost	**93,213**	302,329

There are no gains or losses on financial liabilities.

Note 4.2: Fair value measurement

Accounting policy

FRDC engaged Jones Lang LaSalle Public Sector Valuations (JLL) to conduct an asset revaluation of all non-financial assets as at 30 June 2021. An annual assessment is undertaken to determine whether the carrying amount of the assets is materially different from the fair value. Comprehensive valuations are carried out at least once every three years. JLL has provided written assurance to the FRDC that the models developed are in compliance with AASB 13.

The methods utilised to determine and substantiate the unobservable inputs are derived and evaluated as follows.

Physical depreciation and obsolescence—assets that do not transact with enough frequency or transparency to develop objective opinions of value from observable market evidence that have been measured using the depreciated replacement cost approach. Under the depreciated replacement cost approach, the estimated cost to replace the asset is calculated and then adjusted to take into account physical depreciation and obsolescence. Physical depreciation and obsolescence has been determined based on professional judgement regarding physical, economic and external obsolescence factors relevant to the asset under consideration. For all leasehold improvement assets, the consumed economic benefit/asset obsolescence deduction is determined based on the term of the associated lease.

FRDC's policy is to recognise transfers into, and transfers out of, fair value hierarchy levels as at the end of the reporting period.

Note 4.2A: Fair value measurement

	Fair value measurements at the end of the reporting period	
	2020–21	2019–20
	$	$
Non-financial assets		
Leasehold improvements	**107,600**	111,450
Plant and equipment	**13,600**	17,950
Total non-financial assets	**121,200**	129,400

The FRDC did not measure any non-financial assets at fair value on a non-recurring basis as at 30 June 2021.

As at 30 June 2021, Jones Lang LaSalle Public Sector Valuations conducted a revaluation of plant and equipment. The table above summarises the results of the valuation at fair value. A revaluation increment was applied to the asset revaluation reserve by asset class and included in the equity section of the Statement of Financial Position. Refer Note 2.2A.

Other information

Note 5.1: Current/non-current distinction for assets and liabilities

Note 5.1A: Current/non-current distinction for assets and liabilities

	2020–21	2019–20
	$	$
Assets expected to be recovered in:		
No more than 12 months		
Cash and cash equivalents	25,182,254	26,411,348
Trade and other receivables	4,760,593	2,306,370
Other non-financial assets	–	14,070
Total no more than 12 months	29,942,847	28,731,788
More than 12 months		
Buildings	670,188	834,433
Plant and equipment	121,200	129,400
Computer software	488,140	601,095
Total more than 12 months	1,279,528	1,564,928
Total assets	31,222,375	30,296,716
Liabilities expected to be settled in:		
No more than 12 months		
Suppliers	169,068	193,836
Projects	2,954,056	1,414,377
Other payables	6,588	–
Leases	132,166	161,318
Employee provisions	689,122	615,674
Total no more than 12 months	3,951,000	2,385,205
More than 12 months		
Leases	562,389	686,277
Employee provisions	130,247	79,764
Total more than 12 months	692,636	766,041
Total liabilities	4,643,636	3,151,246

Information about remuneration for key management personnel

			Short-term benefits	Post-employment benefits	Other long-term benefits	Total remuneration
Name	Position title	Base salary	Annual leave accrued (4 weeks)	Superannuation contributions	Long service leave	
		$	$	$	$	$
Mr John Williams	Chair	60,980		5,793		66,773
Professor Colin Buxton	Deputy Chair	36,590		3,476		40,066
Dr Kathryn Brooks	Non-executive director	36,590		3,476		40,066
Dr Saranne Cooke	Non-executive director	36,590		3,476		40,066
Mr Mark King	Non-executive director	36,590		3,476		40,066
Mr John Lloyd	Non-executive director	36,590		3,476		40,066
Ms Katina Hodson-Thomas	Non-executive director	36,590		3,476		40,066
Dr Lesley MacLeod	Non-executive director	36,590		3,476		40,066
Dr Patrick Hone	Managing Director	313,853	28,571	59,004	12,857	414,286
Mr John Wilson	General Manager Business (retired 7 July 2021)	5,092	431	855	194	6,573
Mr Crispian Ashby	General Manager Investment	193,477	17,886	36,320	8,049	255,732
Mr Peter Horvat	General Manager Communications (resigned 31 May 2021)	157,473	14,937	29,520	6,457	208,388
Ms Cheryl Cole	General Manager Finance and Business	162,605	14,846	31,078	6,681	215,209
Mr Kyaw Kyaw Soe Hlaing	General Manager ICT and Digitalisation (commenced as key management personnel 1 January 2021)	155,941	14,846	24,888	6,681	202,356
Mr Matt Barwick	General Manager Strategy and Innovation (commenced as key management personnel 1 January 2021)	137,064	14,846	33,265	6,681	191,856

FRDC does not have any other senior executive staff or highly paid staff.

APPENDICES

A TO F

APPENDIX A:
The FRDC's principal revenue base

As stipulated in the PIRD Act, and shown in Figure xx, the FRDC's primary revenue source is based on:

A. Australian Government providing unmatched funds equivalent to 0.50 per cent of the average gross value of Australian fisheries production (AGVP) for the current year plus the two preceding years.

B. Fishers and aquaculturists providing contributions via government.

C. Australian Government matching this amount up to a maximum of 0.25 per cent of AGVP.

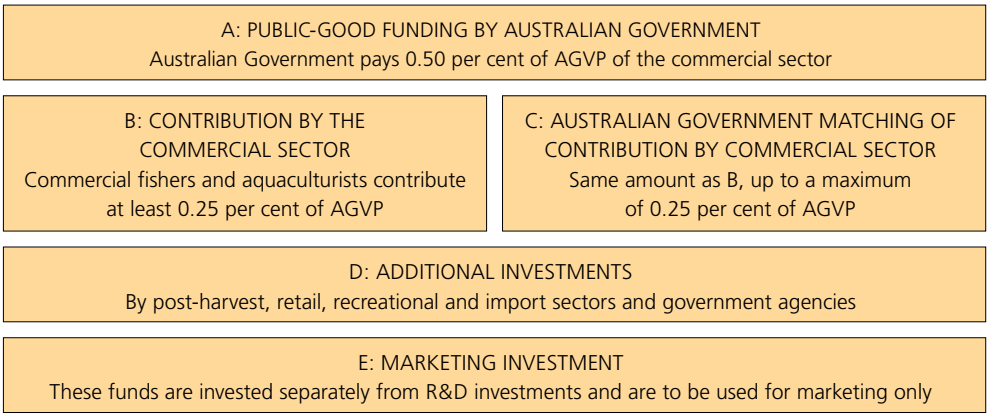
D. Funds received from R&D providers, both as cash and in-kind contributions through projects that have been successful for funding.

E. Marketing funds collected from the sectors through a statutory levy (or if approved voluntary contributions). Marketing funds are not eligible to be matched by the Commonwealth.

There is no legislative impediment to fishers and aquaculturists contributing to the FRDC above the maximum level at which the Australian Government will provide a matching contribution. Industry contributions for the past financial year and trends for the past five years are shown on page v.

Details of all FRDC revenue (including investments, royalties, and sales of products, information and services) are in the financial statements starting on page 117.

FIGURE 5: PROPORTIONS OF THE FRDC'S PRINCIPAL REVENUE BASE



Rationale for the FRDC's revenue base

The high component of public good in the operating environment of the fishing industry, has significance for the FRDC's revenue base. The Australian Government's contribution of 0.50 per cent of AGVP is made on the grounds that the Australian Government exercises a stewardship role in relation to fisheries resources on behalf of the Australian community.

Fishing and aquaculture contributes to the FRDC on the basis that R&D will be targeted to its needs and will deliver economic and social benefits. The Australian Government matches industry contributions on the basis that the beneficiaries of research should pay approximately in proportion to the benefits received, but the government should contribute to spill over benefits to the wider community.

B

APPENDIX B: The FRDC's legislative foundation and the exercise of ministerial powers

The FRDC was formed as a statutory corporation on 2 July 1991 under the provisions of the PIRD Act. It also operates under the provisions of the PGPA Act, which applies high standards of accountability while providing for the independence required by the Corporation's role as a statutory authority.

The FRDC's objects, deriving from section 3 of the PIRD Act and shown in Appendix C, are incorporated in the FRDC's vision and planned outcomes. As reflected in Figure 3 on pages 16–17, the FRDC's five R&D programs mirror the industry development, natural resources sustainability and people development themes of, respectively, sub-sections 3(a), (b) and (c) of the Act. This alignment has brought simplicity and robustness to the FRDC's R&D planning, implementation and reporting, and to many of the organisations with which it does business. Importantly, the alignment ensures the R&D outputs resulting from the FRDC's investments fully address the legislative objects.

More information about the FRDC's legislative foundations can be found in Appendix C.

Enabling legislation

The FRDC's enabling legislation is the *Primary Industries Research and Development Act 1989* (PIRD Act).

The FRDC Board is responsible to the Minister for Agriculture and Northern Australia and, through him, to the Parliament of Australia.

The objects, functions and statutory powers of R&D corporations are specified in the PIRD Act, the text of which is available via the FRDC website.

In the interests of clarity, the following statements of the FRDC's objects, functions and statutory powers mirror the wording of the PIRD Act but are specific to the FRDC and its business environment. Similarly, the statements of the FRDC's functions and statutory powers have been made shorter and simpler than the wording of the Act.

Objects

The objects of the FRDC, deriving from section 3 of the PIRD Act, are to:

(a) make provision for the funding and administration of research and development relating to primary industries with a view to:

  (i) increasing the economic, environmental and social benefits to members of primary industries and to the community in general by improving the production, processing, storage, transport or marketing of the products of primary industries, and

  (ii) achieving the sustainable use and sustainable management of natural resources, and

  (iii) making more effective use of the resources and skills of the community in general and the scientific community in particular, and

  (iv) supporting the development of scientific and technical capacity, and

  (v) developing the adoptive capacity of primary producers, and

  (vi) improving accountability for expenditure on research and development activities in relation to primary industries, and

(b) make provision for the funding and administration of marketing relating to products of primary industries.

Functions

The functions of the FRDC, deriving from section 11 of the PIRD Act, are to:

- investigate and evaluate the requirements for fisheries research and development and, on that basis, prepare a five-year R&D plan, review it annually and revise it if required,
- prepare an annual operational plan for each financial year,
- coordinate or fund the carrying out of R&D activities that are consistent with the annual operational plan,
- monitor and evaluate fisheries R&D activities that are funded and report on them to the Parliament; the Minister for Agriculture and Northern Australia, statutory levy payers and the FRDC representative organisations, and
- facilitate the dissemination, adoption and commercialisation of the results of fisheries R&D.

Statutory powers

Subject to the PIRD Act, the FRDC is empowered under section 12 of the Act to do all things necessary or convenient to be done for, or in connection with, the performance of its functions, which may include:

- entering into agreements for the carrying out of R&D activities by other persons,
- entering into agreements for the carrying out of R&D activities by the FRDC and other persons,
- making applications, including joint applications for patents,
- dealing with patents vested in the FRDC and other persons,
- making charges for work done, services rendered, and goods and information supplied by it,
- accepting gifts, grants, bequests and devices made to it, and acting as trustee of money and other property vested in it on trust,
- acquiring, holding and disposing of real and personal property,
- joining in the formation of a company, and doing anything incidental to any of its powers.

The description of ministerial powers that follows has been drawn from several sections of the PIRD Act and has been condensed from the original in the interests of clarity.

Ministerial powers

Ministerial powers under the enabling legislation may be exercised by the Minister for Agriculture and Northern Australia. They relate to:

- directing the FRDC in writing as to the performance of its functions and the exercise of its powers,
- approving the R&D plan and the annual operational plan,
- requesting and approving variation to the R&D plan and the annual operational plan,
- requesting the establishment of a selection committee and determining certain conditions relating to the selection committee,
- appointing the presiding member and members of a committee for the selection of directors,
- determining the number of directors,
- determining the terms and conditions of appointment of directors (other than the Managing Director) in relation to matters not provided for by the PIRD Act,
- appointing the Chairperson,
- appointing directors, other than the Chairperson and Managing Director, from persons nominated by a selection committee,
- declaring one or more specified organisations to be representative organisations in relation to the FRDC,
- determining the gross value of production of the fishing industry for the purposes of establishing the maximum payments by the Australian Government to the FRDC,
- establishing written guidelines covering the payment by the FRDC to an eligible industry body, or member of an eligible industry body, for expenses reasonably incurred in connection with consultation with the FRDC,
- causing, at least once in each financial year, a coordination meeting to be held of all R&D corporations,
- granting leave of absence to the Chairperson, and
- terminating the appointment of the Chairperson or a director other than the Managing Director.

Additional powers under the PGPA Act relating to corporate governance and reporting are available from the Minister for Agriculture and Northern Australia.

Exercise of ministerial powers are described on page 153.

C

APPENDIX C: Principal legislative requirements for reporting

This annual report complies with the requirements of Commonwealth legislation. The principal reporting requirements, and some of their consequences for the FRDC, are outlined in this appendix. The Acts are:

- *Primary Industries Research and Development Act 1989* (PIRD Act),
- *Public Governance, Performance and Accountability Act 2013* (PGPA Act),
- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Section 16A).

PGPA Act requirements

The PGPA Act is one of the principal pieces of legislation that specifies the content and standards of presentation of statutory authorities' annual reports for parliamentary scrutiny.

Part 2–3 of the Act: Planning, Performance and Accountability consolidates government policy for planning and performance reporting with budgets and actuals for both financial and non-financial measures. Section 46 of the PGPA Act requires the FRDC's directors to prepare an annual report in accordance with PGPA Rules, and to give it to the responsible minister by 15 October.

PIRD Act requirements

The PIRD Act also specifies matters that must be reported. In particular, section 28 states:

(1) The annual report prepared by the directors of an R&D Corporation and given to the Minister under section 46 of the PGPA Act for a period must include:

(a) particulars of:

(i) the R&D activities that it coordinated or funded, wholly or partly, during the period, and

(ia) if a levy attached to the Corporation had a marketing component during the period—the marketing activities that it coordinated or funded, wholly or partly, during the period, and

(ii) the amount that it spent during the period in relation to each of those activities, and

(iib) the impact of those activities on the primary industry or class of primary industries in respect of which the Corporation was established, and

(iii) revisions of its R&D plan approved by the Minister during the period, and

(iv) the entering into of agreements under sections 13 and 14 during the period and its activities during the period in relation to agreements entered into under that section during or prior to the period, and

(v) its activities during the period in relation to applying for patents for inventions, commercially exploiting patented inventions and granting licences under patented inventions, and

(vi) the activities of any companies in which the Corporation has an interest, and

(vii) any activities relating to the formation of a company, and

(viii) significant acquisitions and dispositions of real property by it during the period, and

(b) an assessment of the extent to which its operations during the period have:

(i) achieved its objectives as stated in its R&D plan, and

(ii) implemented the annual operational plan applicable to the period, and

(c) an assessment of the extent to which the Corporation has, during the period, contributed to the attainment of the objects of this Act as set out in section 3, and

(d) in respect of the grain industry or such other primary industry or class of primary industries as is prescribed in the regulations, particulars of sources and expenditure of funds, including:

(i) commodity, cross commodity and regional classifications, and

(ii) funds derived from transfer of assets, debts, liabilities and obligations under section 144.

EPBC Act requirements

Section 516A requires annual reports for Commonwealth entities to report against the criteria set out in that section of the Act.

Part 21—Reporting—Division 1—Annual reports

Section 516A: Annual reports to deal with environmental matters

(6) A report described in subsection (1), (4) or (5) relating to a body or person (the reporter) for a period must:

(a) include a report on how the activities of, and the administration (if any) of legislation by, the reporter during the period accorded with the principles of ecologically sustainable development, and

(b) identify how the outcomes (if any) specified for the reporter in an Appropriations Act relating to the period contribute to ecologically sustainable development, and

(c) document the effect of the reporter's activities on the environment, and

(d) identify any measures the reporter is taking to minimise the impact of activities by the reporter on the environment, and

(e) identify the mechanisms (if any) for reviewing and increasing the effectiveness of those measures.

APPENDIX D: Government priorities

The FRDC works closely with the Minister for Agriculture and Northern Australia, Assistant Minister and DAWE to ensure it delivers results that are 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 Australian Government priorities. Government priorities are consistent with the FRDC's four legislated objects (section 3 of the PIRD Act) as shown in Figure 3: FRDC's framework for integrating legislative, government and industry priorities (pages 16–17).

The following tables summarise the total expenditure allocated against each set of priorities within the 2020–21 financial year. The allocation of funds is shown in both dollar and percentage terms for each investment theme—noting that totals may not equal 100 per cent as not all projects fit Australian Government priorities.

Government research priorities attributed to each R&D program

RURAL RESEARCH PRIORITIES

	$ m	%
Adoption of R&D	7.69	29.00
Advanced technology	3.27	12.33
Biosecurity	3.52	13.27
Soil, water and managing natural resources	12.03	45.36
Total	26.52	100.00

STRATEGIC RESEARCH PRIORITIES

	$ m	%
Advanced manufacturing	0.31	1.13
Cyber security	0.01	0.04
Energy	0.04	0.15
Environmental change	4.52	16.54
Food	13.62	49.85
Health	0.84	3.07
Resources	3.24	11.86
Soil and water	4.71	17.24
Transport	0.04	0.15
Total	27.32	100.00

Not all projects align to the priorities. Figures in these tables have been rounded, hence totals may not agree with component total R&D financial figures.

APPENDIX E:
Freedom of information statement

Australian Government agencies subject to the *Freedom of Information Act 1982* (FOI Act) are required to publish information for the public as part of the Information Publication Scheme (IPS). This requirement is in Part II of the FOI Act and each agency must display on its website a plan showing what information it publishes in accordance with the IPS requirements.

Further information on the FRDC's agency plan is available from the FRDC website—www.frdc.com.au/About-us/Freedom-of-information.

Role, structure and functions

The FRDC's role is described on page 14 of this annual report; its structure and functions and legislation under which it is established are described in Appendices A to C.

DOCUMENTS AVAILABLE FOR INSPECTION

R&D Plan (the FRDC's current strategic plan)	File, publication and website*
FRDC policies	Unpublished documents, list on website*
Annual operational plan	File, publication and website*
Project details	Database, files and website*
Project agreements	Files and generic copy on website*
Final reports and non-technical summaries	Publications and website*
R&D funding applications	Files
Annual report	File, publications and FRDC website*
FISH magazine	File, publications, iPad and FRDC website*
Administration	Files, unpublished documents
Mailing lists	Database

* The FRDC's website address is www.frdc.com.au

Some other information may be subject to assessment of access for such matters as commercial confidentiality or personal privacy in accordance with the FOI Act.

Access to documents

To seek access to FRDC documents, please contact the FRDC's FOI Officer: address, telephone and e-mail details are shown inside the back cover of this report. It may not be necessary to request the information under the FOI Act—the FRDC may simply provide it to you when you ask for it. At all times, however, you have the option of applying under the FOI Act.

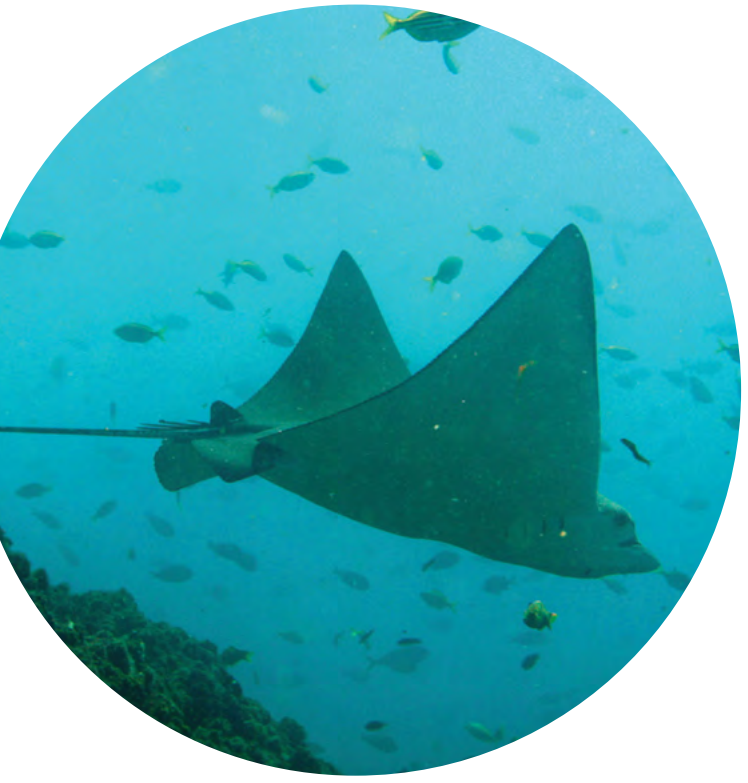
FEES AND CHARGES FOR FOI

Request	Charge
Application	No fee
Search and retrieval	$15 per hour (GST inclusive)
Decision making and consultation	First five hours free, after that $20 per hour (GST inclusive)
When a FOI request is not responded to within the statutory time limit	No fee
Internal review	No fee
Request for personal information	No fee

The standard FOI application fee is nil when making your application, however processing charges will apply.

Documents are usually made available for direct access at the FRDC's office in Canberra. They may also be provided, depending on your preference:

- by post (photocopies) to an address specified in your request, or
- at the Information Access Office (established by the Attorney-General) nearest where you live.



APPENDIX F:
Board Selection Committee Report

Establishment of the FRDC Board Selection Committee

On 15 February 2021, Ms Lindy Hyam was appointed as the FRDC's Board Selection Presiding Member by the Minister for Agriculture and Northern Australia, the Hon. David Littleproud MP. The term of appointment is until 30 November 2023. The FRDC Board Appointment Selection Committee was then established under the PIRD Act on 30 March 2021 to select and nominate qualified and suitable persons for appointment to seven non-executive director positions on the FRDC Board.

Selection Committee members, nominated by the Presiding Member in consultation with FRDC's representative organisations; Commonwealth Fisheries Association, National Aquaculture Council, Seafood Industry Australia, and RecFish Australia, have an excellent understanding of all sectors of the industry and the FRDC, while at the same time providing good experience and knowledge of Board requirements. Together they worked diligently in the interests of FRDC and its stakeholders.

The members of the Selection Committee, appointed by the Minister, the Hon. David Littleproud MP were:

- Mr Max Castle,
- Ms Annie Jarrett,
- Dr George Kailis,
- Ms Jo-Anne Ruscoe.

Ms Victoria Taylor, Executive Management Services, provided administrative and secretariat services to the Selection Committee throughout the process.

Selection process to 30 June 2021

The Selection Committee conducted a thorough process to identify the most potential from the field of available candidates. At the commencement of this process, Ms Hyam and the Selection Committee undertook relevant consultations with FRDC Chair, Mr John Williams, and the Managing Director, Dr Patrick Hone, about where the organisation was up to in terms of its new strategic plan, what it required in its new Board to continue its effective delivery, the challenges before the sector and FRDC, the performance of the current Board, required expertise and experience for the future, including any current gaps, and budgetary and procedural issues for the Selection Committee. Views were also sought from the representative organisations on the skills base, knowledge and expertise required for the new Board. In addition, the Presiding Member also consulted with officers of DAWE as to any sectoral policy issues and procedural requirements to be considered.

Applications were called through advertisements placed in newspapers that circulate nationally—*The Australian Financial Review* on 12 March 2021 and *The Weekend Australian* on 13–14 March 2021 as well as being advertised online through LinkedIn and Seek. The advertisement was also placed through Women on Boards, the FRDC representative organisation's member lists, on the FRDC website and circulated to its members and e-mailed to registrants on DAWE's Balance database with a search also undertaken of Board Links, as to possible suitable candidates. The FRDC representative organisations were also invited to nominate candidates for consideration by the Selection Committee. Applications closed on 9 April 2021. A total of 85 applications were received, of which 29 or 34 per cent were female applicants. Candidates came from all states and territories.

In developing the short list, the Selection Committee considered the selection criteria stated in section 131 of the PIRD Act, along with other criteria agreed to be important with the FRDC Chair including experience in Indigenous, geographic coverage of Northern Australia, gender diversity and retention of core capability for continuity purposes. The Selection Committee gave due consideration to the diversity, skills, and experience of the candidates, individually and as a nominated group.

Nominations for appointment

The Selection Committee agreed on the final list of nominations considered suitable for appointment possessing a mix of skills, knowledge and expertise that would provide an excellent resource to enable the FRDC to perform its role most effectively under the PIRD Act

The final nominations were provided to the Minister for Agriculture and Northern Australia the Hon. David Littleproud MP on 19 May 2021.

Expenses

The following table includes the Selection Committee's expenses for 2020–21.

Description	Net	GST	Total
	$	$	$
Advertising	14,267.63	1,426.76	15,694.40
Presiding Member's fee	16,750.00	Nil	16,750.00
Secretarial/administrative support	7,300.00	730.00	8,030.00
Internet charges	209.09	20.90	230.00
Total	**38,526.72**	**2,177.66**	**40,704.40**

ABBREVIATIONS AND ACRONYMS

AASB	Australian Accounting Standards Board
AGVP	average gross value of production
AIA	Agricultural Innovation Australia
AOP	annual operational plan
CEO	chief executive officer
COVID-19	Coronavirus disease
CRC	cooperative research centre
CRC-P	Cooperative Research Centre Project
CRRDC	Council of Rural Research and Development Corporations
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAWE	Australian Government Department of Agriculture, Water and the Environment
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
FBT	fringe benefits tax
FOI Act	*Freedom of Information Act 1982*
FRDC	Fisheries Research and Development Corporation
GGS	general government sector
GST	goods and services tax
GVP	gross value of production
ICT	information and communications technology
IMAS	Institute for Marine and Antarctic Studies
IPA	Industry Partnership Agreement
ISO	International Organization for Standardisation
m	million
MOU	memorandum of understanding
MP	member of parliament
MSE	management strategy evaluation
NSW	New South Wales
NSW DPI	New South Wales Department of Primary Industries
PAYG	pay as you go
PBS	Portfolio Budget Statements
PGPA Act	*Public Governance, Performance and Accountability Act 2013*
PhD	Doctor of Philosophy
PIRD Act	*Primary Industries Research and Development Act 1989*
R&D	research and development
RAC	Research Advisory Committee
RD&E	research, development and extension
RDC	research and development corporation
ROU	right-of-use
SAFS	Status of Australian Fish Stocks
SBT	Southern Bluefin Tuna
SDG	[United Nations] Sustainable Development Goal
WHS Act	*Work Health and Safety Act 2011*
WVSS	Western Victorian Snapper Stock

INDICES

COMPLIANCE AND ALPHABETICAL

COMPLIANCE INDEX

This index shows the page numbers on which the FRDC has reported on matters specified in Australian Government legislation and policies.

The requirements for annual reports acknowledges that agencies vary in role and size and there is discretion as to the extent of information to include in annual reports and the sequence in which it is presented. The Joint Committee on Publications has also observed that a departmental report will necessarily be different from that of a statutory authority; and a statutory authority, while accountable for its activities, has a degree of independence not shared by departments and its annual reports will thus have a greater freedom of expression and comment. The FRDC's reporting is, accordingly, appropriate to its legislative basis, functions and size.

TABLE 14: *PRIMARY INDUSTRIES RESEARCH AND DEVELOPMENT ACT 1989* (PIRD ACT)

Section	Title	Comply	Page
Section 10	R&D corporation is a body corporate etc.	Yes	153–155
Section 11	Functions	Yes	154
Section 12	Powers	Yes	154–155
Section 19	R&D plans	Yes	7, 19
Section 20	Approval of R&D plans	Yes	7
Section 21	Variation of R&D plans	Yes	7
Section 24	Consultation	Yes	7, 8, 21–22
Section 25	Annual operational plans	Yes	19–20
Section 27	Compliance with R&D plans and annual operational plans	Yes	94
Section 28	Annual report	Yes	94, 157
Section 29	Accountability to representative organisations	Yes	8, 15, 161
Section 33	Expenditure of money of R&D corporations	Yes	113–148
	Spending must be in accordance with funding agreement	Yes	6, 15, 18, 21
Section 33A	R&D money must not be spent on marketing	Yes	152, 156
Section 34	Commonwealth to be paid levy expenses from R&D corporation	Yes	99
Section 35	Commonwealth to be reimbursed for refunds of levy	Yes	99
Section 40	Separate accounting records	Yes	113–148
Section 47	Times and places of meetings	Yes	109–110
Section 53	Minutes	Yes	111
Section 76	Duties	Yes	104
Section 87	Employees	Yes	94–95, 149
Section 143	Minister may give directions	Yes	99

TABLE 15: SECTION 17BE: CONTENTS OF ANNUAL REPORT

The annual report for a corporate Commonwealth entity for a reporting period must include the following.

PGPA rule reference	Description	Comply	Page
17BE	Contents of annual report		
(a)	Details of the legislation establishing the body	Yes	153
(b)(i)	A summary of the objects and functions of the entity as set out in legislation	Yes	19–148
(b)(ii)	The purposes of the entity as included in the entity's corporate plan for the reporting period	Yes	14
(c)	The names of the persons holding the position of responsible Minister or responsible Ministers during the reporting period, and the titles of those responsible Ministers	Yes	14
(d)	Directions given to the entity by the Minister under an Act or instrument during the reporting period	Yes	99
(e)	Any government policy order that applied in relation to the entity during the reporting period under section 22 of the Act	Yes	99
(f)	Particulars of non-compliance with: (a) a direction given to the entity by the Minister under an Act or instrument during the reporting period, or (b) a government policy order that applied in relation to the entity during the reporting period under section 22 of the Act	n/a	—
(g)	Annual performance statements in accordance with paragraph 39(1)(b) of the Act and section 16F of the rule	Yes	vii–13, 113–148
(h), (i)	A statement of significant issues reported to the Minister under paragraph 19(1)(e) of the Act that relates to non-compliance with finance law and action taken to remedy non-compliance	n/a	—
(j)	Information on the accountable authority, or each member of the accountable authority, of the entity during the reporting period	Yes	119
(k)	Outline of the organisational structure of the entity (including any subsidiaries of the entity)	Yes	176
(ka)	Statistics on the entity's employees on an ongoing and non-ongoing basis, including the following: (a) statistics on full-time employees, (b) statistics on part-time employees, (c) statistics on gender, (d) statistics on staff location	Yes	94–95
(l)	Outline of the location (whether or not in Australia) of major activities or facilities of the entity	Yes	176–177

n/a: Not applicable.

PGPA rule reference	Description	Comply	Page
(m)	Information relating to the main corporate governance practices used by the entity during the reporting period	Yes	104
(n), (o)	For transactions with a related Commonwealth entity or related company where the value of the transaction, or if there is more than one transaction, the aggregate of those transactions, is more than $10,000 (inclusive of GST):		
	(a) the decision-making process undertaken by the accountable authority to approve the entity paying for a good or service from, or providing a grant to, the related Commonwealth entity or related company, and	(a) Yes	97, 154, 156
	(b) the value of the transaction, or if there is more than one transaction, the number of transactions and the aggregate of value of the transactions	(b) Yes	98–99
(p)	Any significant activities and changes that affected the operation or structure of the entity during the reporting period	Yes	vii, 5–13
(q)	Particulars of judicial decisions or decisions of administrative tribunals that may have a significant effect on the operations of the entity	Yes	101
(r)	Particulars of any reports on the entity given by:		
	(a) the Auditor-General (other than a report under section 43 of the Act), or	(a) Yes	114–115
	(b) a Parliamentary Committee, or	(b) n/a	—
	(c) the Commonwealth Ombudsman, or	(c) n/a	—
	(d) the Office of the Australian Information Commissioner	(d) n/a	—
(s)	An explanation of information not obtained from a subsidiary of the entity and the effect of not having the information on the annual report	n/a	—
(t)	Details of any indemnity that applied during the reporting period to the accountable authority, any member of the accountable authority or officer of the entity against a liability (including premiums paid, or agreed to be paid, for insurance against the authority, member or officer's liability for legal costs)	Yes	111
(taa)	The following information about the audit committee for the entity:		
	(a) a direct electronic address of the charter determining the functions of the audit committee,	(a) Yes	109
	(b) the name of each member of the audit committee,	(b) Yes	110
	(c) the qualifications, knowledge, skills or experience of each member of the audit committee,	(c) Yes	110
	(d) information about each member's attendance at meetings of the audit committee,	(d) Yes	110
	(e) the remuneration of each member of the audit committee	(e) Yes	110
(ta)	Information about executive remuneration	Yes	149

n/a: Not applicable.

TABLE 16: GOVERNMENT POLICY AND ASSOCIATED REPORTING REQUIREMENTS

Section	Comply/ adopt better practice	Page
Australian Government Cost Recovery Policy	Yes	99
Australian Government Foreign Exchange Risk Management Guidelines	Yes	99
Australian Government priorities • Rural Research Priorities • Strategic Research Priorities	Yes	158
Australian Government Commonwealth Procurement Rules	Yes	99
Australian Government Commonwealth Property Management Framework	Yes	99
Australian Government Protective Security Policy Framework (PSPF)	Yes	99
Australian Government's Public Sector Workplace Relations Policy 2020	Yes	99
Comcover Risk Benchmarking Survey	Yes	97
Commonwealth Disability Discrimination Act 1992 (National Disability Strategy 2010–2020)	Yes	95–96
Commonwealth Fraud Framework 2017	Yes	97
Environment Protection and Biodiversity Conservation Act 1999 (Section 16A)	Yes	28, 157
Freedom of Information Act 1982, quarterly and annual lodgements	Yes	101, 159–160
National Code of Practice for the Construction Industry and the Commonwealth's Implementation Guidelines	n/a	—
OLSC [Office of Legal Services Coordination] Legal Expenditure annual return	Yes	99
Work Health and Safety Act 2011	Yes	100

n/a: Not applicable.

ALPHABETICAL INDEX

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Publications and other information

The following information is available from the FRDC	Printed	Website
The R&D Plan (*Imagining the future of fishing and aquaculture: The FRDC's Research and Development Plan 2020–25*), which provides comprehensive information on the FRDC; its business environment; the outlook for the fishing industry and the natural resources on which it depends; and the way in which the FRDC plans, invests in and manages fisheries R&D.	No	Yes
This and the previous annual report.	Yes	Yes
R&D plans for Commonwealth, states, Northern Territory, regions and industry sectors.	No	Yes
FISH (published in March, June, September and December, and on other occasions for special themes), which provides information on FRDC activities, summarises final reports on completed R&D projects released during the previous quarter, and lists projects that have been newly funded.	Yes	Yes
Information on completed projects (final reports and other related products).	No	Yes
Hyperlinks to other websites containing full final reports and fisheries R&D strategies, and to other important websites.	—	Yes
R&D funding application details.	—	Yes
Coming events of significance for the industry.	Yes	Yes
Research databases.	—	Yes
FRDC organisation structure.	—	Yes

frdc.com.au

The FRDC's website (www.frdc.com.au) provides easy access to information and publications, including the items on this page.

About this report

This report describes the extent to which the FRDC implemented its approved AOP during the previous financial year. It meets the requirements for reporting legislated by the Australian Government and informs the FRDC's other stakeholders—especially those in the commercial, recreational and Indigenous sectors of the fishing industry and in the R&D community.

Fisheries Research and Development Corporation Annual Report, 2020–21

An electronic version is at the FRDC website — www.frdc.com.au, and
Australian Government Transparency Port — https://www.transparency.gov.au/annual-reports/fisheries-research-and-development-corporation/reporting-year/2020-21

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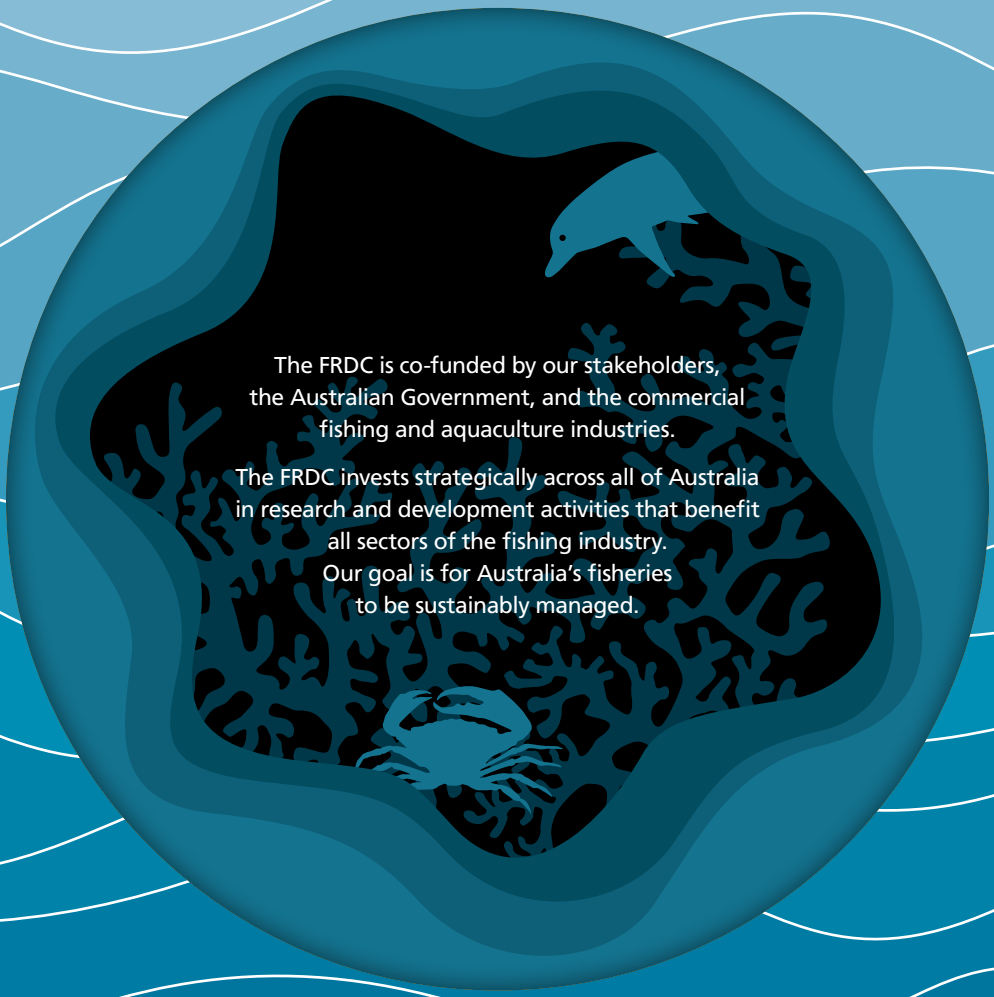

The FRDC is co-funded by our stakeholders, the Australian Government, and the commercial fishing and aquaculture industries.

The FRDC invests strategically across all of Australia in research and development activities that benefit all sectors of the fishing industry. Our goal is for Australia's fisheries to be sustainably managed.