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Australian Government

Fisheries Research and Development Corporation

18 August 2022 Senator the Hon. Murray Watt Minister for Agriculture, Fisheries and Forestry 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 2022.

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 FRDC's planned outcome (pages 9, 11) 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 2021–22 financial year. The annual report starts with the key achievements in 2021–22 (page iv), Chair and Managing Director's reports (pages 3–8), performance statement (page 11) and the year in review (pages 13–17). The financial statements and the Australian National Audit Office audit of FRDC financial statements (pages 89–120) (which returned an unmodified audit report) complete the FRDC performance statements. It is the opinion of the Board of FRDC that the statements accurately present FRDC's performance in the reporting period and comply with s39 (2) of the PGPA Act.

This report documents inputs (income and expenditure, pages v–vi) and outputs from research and development against the performance measures published in the 2021–22 Portfolio Budget Statements Budget Related Paper No. 1.1, Agriculture Portfolio and FRDC Annual Operational Plan (pages 11, 23–24, 26–57). 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 58–59).

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

Yours faithfully, Mr John Williams

R William



Fisheries Research and Development Corporation
Postal address: Locked Bag 222, Deakin West ACT 2600 Australia
Office location: Fisheries Research House, 25 Geils Court Deakin ACT
T: 02 6122 2100 E: frdc@frdc.com.au www.frdc.com.au



KEY ACHIEVEMENTS IN 2021–22

- Supported the launch of the National Fisheries Plan after providing support and information to the former Department of Agriculture, Water and the Environment and the Australian Fisheries Management Forum in the development of the plan.
- Established the new FRDC Extension Officer Network with officers in all seven jurisdictions.
- Developed and implemented an FRDC investment strategy for capacity, capability and culture change for the fisheries and aquaculture community.
- Progressed Australia's involvement in the United Nations Decade of Ocean Science and the Ocean Decade Australia in conjunction with the National Marine Science Committee.
- Initiated a memorandum of understanding (MOU) between the Indigenous Reference Group and the Indigenous Land and Sea Corporation.
- Launched the 'Adaptation of fisheries management handbook to climate change' and funded a follow-up project to deliver implementation training.
- Supported the Victorian abalone sector in responding to the latest outbreak of the abalone viral ganglioneuritis (AVG) virus in the Victorian Western Zone and the Sydney Rock Oyster growers in Port Stephens with the outbreak of QX disease.
- Facilitated resource stewardship through the next phase of Tuna Champions.
- Explored new ways to improve safety at sea through the Seafood Industry Safety Initiative and SeSAFE and the digitisation of Southern Rock Lobster Clean Green Program, all in partnership with the Australian Maritime Safety Authority.
- Through a MOU, FRDC partnered with Seafood Industry Australia to secure funding for a national digital seafood industry platform (AgUp) to support a capability and capacity building investment plan linked to Agriculture Workforce Plan recommendations relevant to the research and development corporations (RDCs) and harmonisation of retail sustainability requirements.
- Facilitated research and development (R&D) to support development of the tropical oyster aquaculture.
- Improved understanding on the impact of seismic activity on fisheries including trialling low noise solutions.
- Established the Institute for Marine and Antarctic Studies and Commonwealth Scientific and Industrial Research Organisation's (CSIRO) Salmonid Science Alliance and held a public meeting to showcase salmon science in Hobart in June 2022.
- Participated in the Ag2030 innovation agenda, Digital Foundations for Agriculture Strategy and the Australian AgriFood Data Exchange partnership, with our stakeholders and RDCs.
- Published papers and analysis of seafood traceability and labelling.
- Implemented the first actions from FRDC's Indigenous Reconciliation Statement of Intent.
- Held a successful World Fisheries Congress that showcased Australia's fishing and aquaculture science and, in particular, FRDC's partnerships.
- Became a member of the Marine Bioproducts Cooperative Research Centre (MB-CRC) significantly boosting seaweed research.
- Continued FRDC's accreditation as a Standards Development Organisation on the Australian Fish Names Standard and Australian Aquatic Plant Names Standard.
- Participated in the AgriFutures Supply Chain Resilience project.



2021–22 ACHIEVEMENTS THROUGH INVESTMENT

Five years at a glance

TABLE 1: INCOME

	2017–18	2018–19	2019–20	2020–21	2021–22
	\$m	\$m	\$m	\$m	\$m
Total income	36.00	39.56	33.03	32.92	36.55
Industry contributions	7.31	7.32	6.90	7.17	7.64
Project contributions	1.73	2.86	1.53	2.11	3.77
Total government contributions	22.71	23.48	22.08 ¹	23.21	24.04
Project contributions from other parties	2.02	3.42	0.82	0.19	0.89
Other income	2.23	2.48	1.70	0.24	0.21

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

TABLE 2: MATCHABLE INCOME

	2017–18	2018–19	2019–20	2020–21	2021–22
	\$m	\$m	\$m	\$m	\$m
Maximum matchable					
(government) contribution ¹	7.57	7.78	7.45	7.80	8.08
Actual government matching	7.57	7.78	7.19 ²	7.59	7.89

^{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 increased during the year largely driven by the aquaculture sector.

TABLE 3: FINANCIAL INDICATORS OF INVESTMENT AGAINST PROGRAMS

	2017–18		2019–20	2020–21	2021–22
	\$m	\$m	\$m	\$m	\$m
Total expenditure	31.39	35.22	34.44	33.53	35.84
Total of R&D projects	26.00	29.80	28.94	28.24	30.71
R&D Program 1 (Environment)	7.94	7.92	8.35	8.65	7.70
R&D Program 2 (Industry)	11.24	14.48	13.39	13.22	15.23
R&D Program 3 (Communities)	1.74	1.83	2.25	1.88	2.30
R&D Program 4 (People)	2.30	2.39	2.20	1.90	2.46
R&D Program 5 (Adoption)	2.78	3.19	2.75	2.59	3.02
Management and accountability	5.39	5.41	5.50	5.29	5.13

TABLE 4: NEW, ACTIVE AND COMPLETED PROJECTS

	2017–18	2018–19	2019–20	2020–21	2021–22
Number of approved new projects	167	145	118	80	95
Active projects under management					
during the year	493	491	440	407	405
Number of final reports completed	85	120	124	96	67

FRDC's balanced research investment approach

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. FRDC's investment approach ensures appropriate coverage of a range 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

	2021–22
	\$m
Total expenditure	35.84
Total of R&D projects	30.71
Outcome 1: Growth for enduring prosperity	13.53
Outcome 2: Best practices and production systems	8.81
Outcome 3: A culture that is inclusive and forward thinking	1.95
Outcome 4: Fair and secure access to aquatic resources	2.63
Outcome 5: Community trust, respect and value	3.79
Communications and adoption	0.63
Corporate costs	5.13

TABLE 6: APPLIED VERSUS BASIC RESEARCH

	2017–18	2018–19	2019–20	2020–21	2021–22	2021–22
	\$m	\$m	\$m	\$m	\$m	%
Applied	24.56	28.43	27.99	28.07	30.30	98.00
Basic	1.45	1.37	0.94	0.17	0.40	2.00

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
		\$	\$
Short (up to 18 months)	160	22,248,514	139,053
Medium (from 18 to 36 months)	124	54,181,695	436,949
Long (36 months and over)	121	72,706,640	600,881
Total	405	149,136,848	368,239

TABLE 8: PROJECT INVESTMENT BY RISK PROFILE

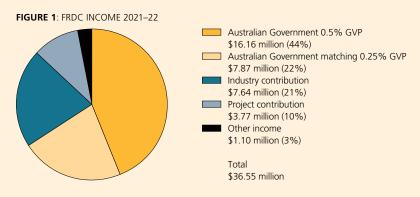
	2017–18	2018–19	2019–20	2020–21	2021–22	Total
	\$	\$	\$	\$	\$	%
Low	11,993,516	15,533,813	16,301,505	15,191,844	18,463,765	58.16
Medium	12,495,655	13,204,366	11,965,941	11,877,334	11,260,369	37.34
High	1,514,281	1,065,692	669,685	1,174,234	982,396	4.50
Total	26,003,453	29,803,871	28,937,131	28,243,412	30,706,530	100.00

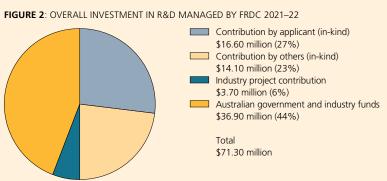
Summary of industry contributions

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

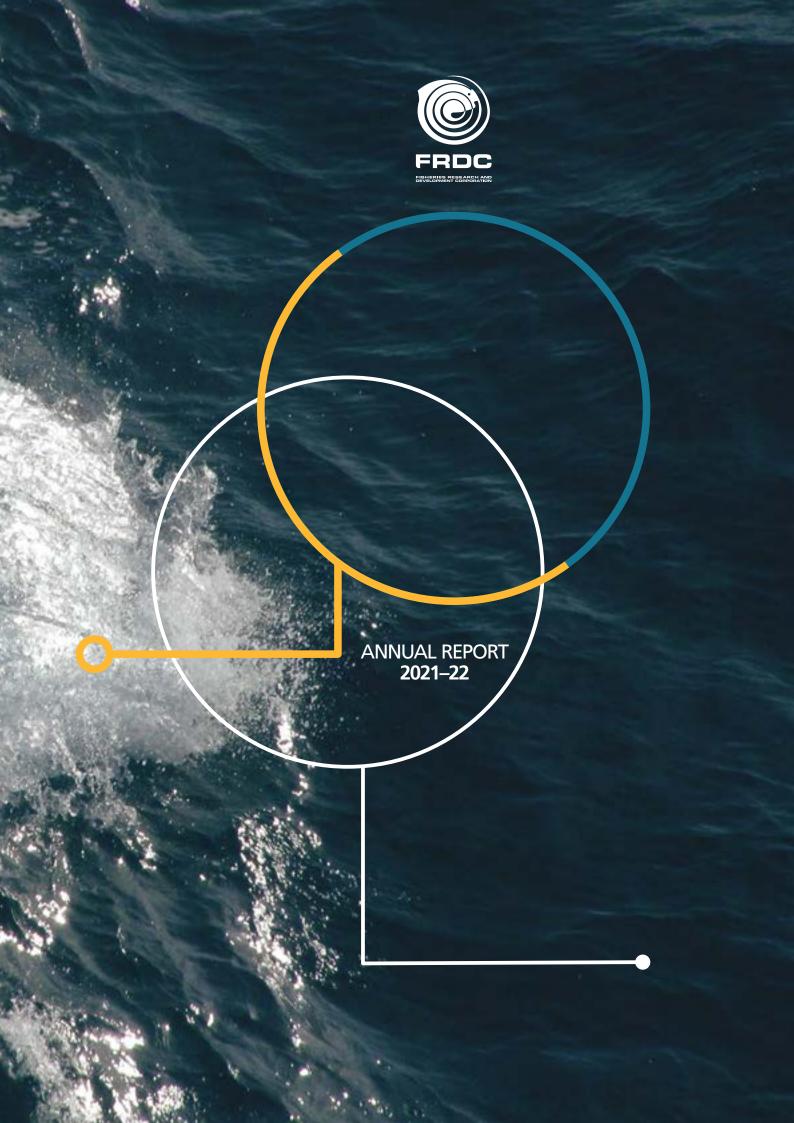
	Α	В	C	D	E	F
Jurisdiction—	Maximum	Actual	Percentage	Distribution	•	Return on
by year	matchable	industry	of	of FRDC	cc	ntribution
	contribution	contributions	matchable	spend		(D/B)
	-	amounts	-			
	[note 1]	[note 2,3]		[note 4,8]		[note 5,6]
	\$	\$	%	\$	2021–22	5 years
Commonwealth	1,455,720	1,262,416	87	4,384,685	3.47	3.04
New South Wales	458,085	435,596	95	2,940,584	6.75	6.94
Northern Territory	238,947	222,937	93	1,459,125	6.54	5.33
Queensland	484,072	500,000	103	4,225,028	8.45	7.36
South Australia	967,965	811,557	84	4,414,375	5.44	5.04
Tasmania	3,141,835	2,718,903	87	6,352,076	2.34	2.89
Victoria	275,098	180,333	66	2,335,396	12.95	10.11
Western Australia	1,060,668	1,512,609	143	4,595,260	3.04	2.60
Total	8,082,390	7,644,351	95	30,706,530	4.02	3.94
Australian farmed						
prawns [note 7]	437,418	272,382	62	639,682	2.35	2.16

- 1. Maximum matchable contribution is the maximum amount that the Australian Government will match industry contributions in accordance with 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 2021–22 and the previous four years.
- 6. The total distribution of spend includes \$36,500 (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 PIRD Act and the Fishing Levy Regulations. This levy is paid to FRDC by the Department of Agriculture, Fisheries and Forestry under a special appropriation as per the PIRD Act.
- 8. Column D includes industry collaborative project contributions provided as co-investment to FRDC projects.













CHAIR'S REPORT

I am pleased and privileged to present the Fisheries Research and Development Corporation (FRDC) Annual Report 2021–22 on behalf of the Board.

It has been a productive year in terms of research outputs, capability expansion of FRDC's team and engagement with Commonwealth, state and territory governments, fishing and aquaculture partners and our representative organisations. It is also pleasing that in the latter half of the year, we have been able to hold Board meetings in Port Stephens (April) and Darwin (June), enabling directors to engage face-to-face with a broad range of stakeholders. Where possible, we will continue to travel around Australia to undertake these types of engagement activities with future FRDC Board meetings.

FRDC has achieved another clean financial audit for 2021–22 that is testimony to the Board's oversight and governance on all financial aspects of FRDC business. The Finance and Audit committee has provided independent leadership, advice and robust analysis to ensure FRDC's financial and risk performance is recognised by the Commonwealth as having an advanced risk maturity, the highest level that can be obtained for Commonwealth entities.

On 1 September 2021, the Hon. David Littleproud MP, former Minister for Agriculture and Northern Australia, appointed five new directors and reappointed two directors to the FRDC Board. FRDC welcomed the new directors Dr Chris Calogeras, Suzanne (Suzi) Hullick, Boris Musa, Alex Ogg and Dr Lyndal Thorburn, all of whom joined directors from the previous Board, Professor Colin Buxton and Dr Saranne Cooke.

I would like to thank outgoing directors Dr Kathryn (Kate) Brooks, Katina (Katie) Hodson-Thomas, Mark King, John Lloyd and Dr Lesley MacLeod for their hard work and service throughout their tenure.

Following the Federal election in May, the Board wrote to FRDC's new minister, Senator the Hon. Murray Watt, Minister for Agriculture, Fisheries and Forestry, and Minister for Emergency Management. The Board highlighted the importance of partnerships to FRDC across Indigenous, commercial wild catch, aquaculture and recreational fishing noting it is well placed to deliver world-leading science to advance the new Government's election commitments.

FRDC-funded research is generating many positive opportunities for fishing and aquaculture to flourish in the future. For example, regarding climate change mitigation, researchers have identified that the active cultivation of the red seaweed *Asparagopsis* could reduce methane emissions by 90 per cent or more, when fed as a dietary supplement to cattle. We are also helping with accelerating the decarbonisation of Australia's seafood sector by forging new global partnerships through investment in research and scaled adoption of alternative fuel and renewable energy solutions. Aquatic ecosystems cannot be fenced like terrestrial systems making biosecurity risks for diseases and pests more pervasive. FRDC has been working with the Department of Agriculture, Fisheries and Forestry (DAFF) on the next AquaPlan that sets out improvements to the shared responsibilities of biosecurity outcomes. In addition, we recognise the need to build a strong and capable workforce across fishing and aquaculture that is resilient to change and we are commissioning a significant program of investment to deliver this outcome.

FRDC's Board has worked closely with the Commonwealth, state and territory governments on a number of critical areas to ensure the regional development corporations (RDCs) continue to succeed into the future and demonstrate value to the levy payer and taxpayer. This year saw Minister Littleproud publish the new:

- National Agricultural Innovation Policy Statement that includes the four National Rural Research Priorities.
- Digital Foundations for Agriculture Strategy that sets out the steps to implement the fourth National Rural Research Priority "Mature adopter, developer and exporter of digital agriculture".

The Board has ensured FRDC and our stakeholders were engaged in the consultation of these documents, and FRDC investments are well placed to deliver both the policy statement and digital strategy.

FRDC supports the Governments' efforts to increase stakeholder transparency, remove duplication and drive commercialisation through a strengthened accountability framework that comprises:

- The Statutory Funding Agreement (containing the five interlinked performance principles of stakeholder engagement; research, development and extension (RD&E) activities; collaboration; governance; and monitoring and evaluation).
- The new:
 - Guidelines for Statutory Funding Agreements (outlines the key performance indicators (KPIs) for the five mandatory outcomes and implementation channels).
 - RDC Knowledge Transfer and Commercialisation Guide.
 - Best Practice Guide to Stakeholder Consultation.

FRDC has also worked closely with a number of cross-industry agriculture organisations to tackle broader agriculture issues, these include:

- Agricultural Innovation Australia (AIA) a not-for-profit, public company established by the RDCs to facilitate new investment and collaboration in cross-industry agricultural issues of national importance.
- AgriFutures Australia's Emerging National Issues Forum involving representatives from each RDC, DAFF and the National Farmers' Federation that explores and collaborates on emerging national rural issues; invests in research, leadership, innovation and learning on whole-of-agriculture opportunities.
- evoke^{AG} was developed to attract investment and commercialisation and identify partners from Australia's private sector and around the world.
- Grow^{AG} is a collaboration between the former Department of Agriculture, Water and Environment (DAWE)
 and Australia's 15 RDCs. It is the gateway to Australia's agrifood innovation system, formalising a shared
 vision to showcase world-leading agricultural research, unique technologies and commercialisation
 opportunities in one, easy-to-use location.
- The Drought and Innovation Hubs are part of the Australian Government's \$5 billion Future Drought Fund.
 They were established to provide networks for researchers, primary producers, community groups and
 others to work collaboratively to enhance drought resilient practices in regions. This approach is making
 agricultural research, including FRDC's, both accessible and increasing innovation and commercialisation
 opportunities.
- The Blue Economy Cooperative Research Centre seeks to enable innovative, commercially viable and sustainable offshore developments and new capabilities that will see significant increases in renewable energy output, seafood production and jobs that will transform the future of Australia's traditional blue economy industries.

Another key government engagement activity that came to fruition this year was the release of the National Fisheries Plan. This plan provides a shared vision and strategic framework for Australian governments and stakeholders to enhance collaboration and drive sustainable growth of the Australian fishing, aquaculture and seafood community. It was informed by months of stakeholder consultation, as well as existing strategies. It is pleasing that this plan builds on FRDC's Fish Forever 2030 vision and FRDC's R&D Plan 2020–25. It highlights recreational fishing benefits and focuses on improving resource access security while also emphasising the impacts of climate change and priorities for research.

All of these initiatives and partnerships would not be possible without the strong support and vision of governments, so we take this opportunity to thank the former Minister Littleproud and state and territory ministers. We are pleased to continue our close relationships with governments and agencies, and we very much look forward to working with Senator the Hon. Murray Watt, Minister for Agriculture, Fisheries and Forestry, in the years ahead.

It is also pertinent to thank the teams working in our representative organisations, Australian Recreational and Sport Fishing Industry Confederation Inc. (Recfish Australia), Commonwealth Fisheries Association Inc. and Seafood Industry Australia as well as those involved in our industry partnerships, Research Advisory Committees, and researchers, without whom FRDC could not function so effectively.

In closing, I would also pay tribute to FRDC's staff, collaborators and my fellow directors for their commitment and support in another extraordinary year.

John Williams Chair



MANAGING DIRECTOR'S REPORT

Our 2021–22 Annual Report is a testament to another 12 months of outstanding work and commitment to delivering innovative research responses, to a broad range of issues and opportunities facing Indigenous, commercial and recreational fishing and aquaculture. Please take the time to read this annual report and we would very much welcome feedback on how we can improve FRDC's performance.

To ensure stakeholders are better informed, in March this year FRDC published its first annual digital performance report which aims to help communicate the outcomes of our research and shape our investments throughout the life of our current R&D Plan. The interim performance report is on FRDC's website and is a dynamic, six-monthly document that provides a snapshot of our work during the period. As such, it focuses on our investments since the start of the financial year (July 2021 to February 2022). This annual report should be read in conjunction with the digital performance report.

Financial performance

The key results are:

- Gross value of production (GVP) for 2021–22 was originally estimated as \$3.01 billion but has been revised
 up by the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) at the mid-year
 forecast to \$3.55 billion.
- FRDC revenue was at least \$2.8 million over the 2021–22 Annual Operational Plan (AOP) target.
- FRDC has again met its eligible expenditure target for 2021–22.
- R&D expenditure was less than forecast in the 2021–22 AOP which had planned for a \$5 million loss.
- The planned deficit will still occur but not to the extent that had been budgeted for in the AOP. This is due to an unexpected increase in GVP for 2021–22.
- Corporate costs were within budget (a saving of \$100,000).
- FRDC achieved an unmodified audit from Australian National Audit Office for the last financial year.

In summary, income is above target, FRDC will meet its eligible expenditure target, it will not make the \$5 million deficit that was forecast, and there were savings in administration and communications. Overall, a good result.

Digital transformation

FRDC is working with businesses and organisations involved in fishing and aquaculture supply chains to build trust and confidence in digital technologies and support the development of systems and tools that are fit for purpose. To help achieve this digital transformation, FRDC is a leading partner in the Australian AgriFood Data Exchange initiative. This initiative aims to develop secure and trusted digital infrastructure to transform operations in primary production and food supply chains. It has attracted more than \$3 million in funding from a diverse range of industry, government, research and technology partners.

FRDC was part of the Australia Agrifood Data Exchange demonstration day held in March 2022 which also included the Western Rock Lobster Council, Western Australia's Department of Primary Industries and Regional Development, and processors Geraldton Fishermen's Co-operative and Indian Ocean Rock Lobster in collaboration with Telstra and IBM.

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National Seafood Industry Leadership Program

Three cohorts of the National Seafood Industry Leadership Program (NSILP) finished in 2021–22 and congratulations to all those who completed this course. The fact that courses continued throughout COVID-19 is testament to the tenacity of each cohort. NSILP is a leadership program delivered through funding from FRDC and developed, managed and delivered by Affectus Pty Ltd. It is the only national, industry-specific leadership program for the Australian seafood industry and was designed in consultation to meet the needs of seafood industry people. FRDC has also provided bursaries to help people participate in this program.

Marine Bioproducts Cooperative Research Centre

In June 2021, the Australian Government announced funding of \$59 million over 10 years, officially launching the Marine Bioproducts Cooperative Research Centre (MB-CRC). When this funding is combined with contributions from industry partners, the MB-CRC is a \$270 million initiative. It has about 70 partners who represent a broad cross-section of industry, including some of Australia's major agribusinesses, small and medium enterprises and two global chemical industry giants, along with some of the country's leading scientists and researchers.

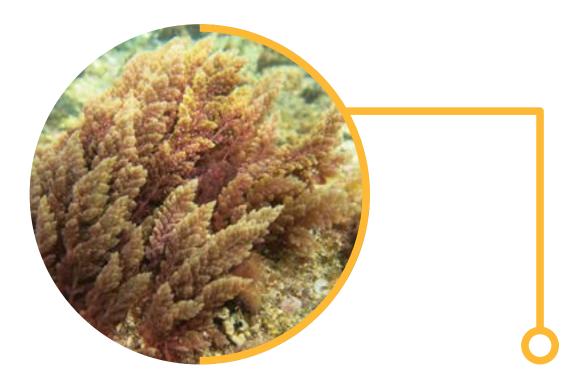
FRDC signed on as a partner, bringing three seaweed-related research projects it has underway into the MB-CRC program. Two projects are investigating the use of seaweeds in water treatment processes, with the third project investigating year-round seaweed propagation. This move has consolidated and coordinated Australian seaweed-related research under the auspices of the MB-CRC to make the best use of available resources and share knowledge.

SafeFish

Following on from the first successful decade of SafeFish, FRDC began a new SafeFish project (2021-018 led by Dr Alison Turnbull) in July 2021. SafeFish is an innovative project that has delivered continually on its goal to provide robust food safety research and advice to industry and regulators to boost Australia's reputation for producing safe and high-quality seafood. SafeFish forms partnerships with industry, government, and scientists to improve responses to current and emerging issues within the seafood industry.

National Marine Science Plan

It is pleasing to see how much has already been delivered in the first five years of the National Marine Science Plan and there are more projects in development. This plan has become even more significant since the United Nations Decade of Ocean Science 2021–2030 commenced with the aim of unlocking innovative ocean science solutions to sustain the planet.



Following are some examples of FRDC-funded science delivered in 2021–22.

Tuna Champions 2.0

FRDC invested in 'Tuna Champions 2.0: Bluefin and beyond' (project 2021-086 led by Associate Professor Sean Tracey, pictured), which will now include other species of tuna and recreationally-fished species such as sharks and rays. Tuna Champions is a grassroots education campaign supported by high-profile fishing personalities, celebrity chefs, sporting stars, charter operators and recreational fishers, and it has spread the word that Southern Bluefin Tuna is a resource worth nurturing and respecting.

Energy use and carbon emissions assessments

During the year an FRDC-funded study (project 2020-089 led by Robert Bell, pictured) analysed the energy use and greenhouse gases emitted by Australia's seafood sector, resulting in the first ever mapping of its carbon footprint. The study was completed in June 2022, and it measured the carbon emissions and energy use from the largest industries within the fishing and aquaculture sectors, which contribute 82 per cent of the total GVP for these sectors. The remaining 18 per cent of fisheries account for a small percentage of total emissions. A 'toolbox' of resources to help smaller operators begin measuring and managing emissions was also an outcome of the project.

Seafood traceability and labelling

Discussion papers on seafood traceability and labelling (project 2020-093 led by Meaghan Dodd) were finalised during 2021–22. The first paper defines traceability; explains why it is important; identifies barriers to adoption; documents laws, standards and guidelines; describes traceability elements, systems and technologies; and suggests recommended actions and associated risks going forward. The second discussion paper provides an update on the issues, challenges and relevant laws, and suggests options and risks in food labelling. It is a living document which attempts to reflect a very dynamic food labelling environment. These papers are very important and will be used as first version working documents, with further updates to occur every 12–18 months.

'Wave to Plate' establishing a market for Tasmanian cultural fisheries

In March 2022, an agreement was signed at a ceremony on Aboriginal land at Murrayfield on Bruny Island, to enable the Land and Sea Aboriginal Corporation of Tasmania to fish 40 state-owned abalone quota units under a three-year lease.

One of the drivers for this agreement was research funded by FRDC (project 2016-204 led by Dr Emma Lee). The first part of her project 'Wave to Plate' laid the groundwork for the establishment of cultural fisheries in Tasmania. It ensured that Aboriginal Elders and their knowledge is respected, and that sea country is sustainably managed for future generations. The second part of 'Wave to Plate' involved testing the appetite in Tasmania for cultural fisheries at a restaurant at Eaglehawk Neck. This project addressed FRDC's Indigenous sector strategy to improve understanding and engagement that 'best supports individual and community economic development'.



Workforce plan implementation

Over the past year FRDC has expanded its capability with the implementation of the second year of our Workforce Plan 2020–23, effectively doubling our team from 20 to 40 people.

We created a new Strategy and Innovation team led by Matt Barwick which includes Jennifer Marshall as the Cross Functional Facilitator and Jamin Forbes the new Strategic Partnerships Manager.

Under the stewardship of Kyaw Kyaw Soe Hlaing as General Manager Information Communications Technology (ICT) and Digitalisation, our capacity to build our digital and information technology proficiency has increased with a restructure of the team. Dennis Payne was appointed as ICT Manager and additional day-to-day IT support is provided by specialist contractors.

The stakeholder engagement team has been re-built with a new general manager to commence in early August 2022 and the appointment of Sue Rana as Corporate Affairs Manager and expansion of the communications support resources.

The most significant change is with our extension and adoption capability. We have created the new position, Transformational Extension and Adoption Manager and appointed Jamie Allnutt. Jamie manages a team of seven new extension officers who have been recruited to work directly with fishing and aquaculture stakeholders to extend R&D outputs and incorporate input from these stakeholders, into our R&D priorities.

This time next year I will also be keen to report on the new Indigenous graduate role that FRDC has established and is in the process of filling.

Thank you

I would also like to echo FRDC's Chair in thanking the outgoing directors Dr Kathryn (Kate) Brooks, Katina (Katie) Hodson-Thomas, Mark King, John Lloyd and Dr Lesley MacLeod for their contribution. The Board they were a part of has made some of the most significant changes to FRDC's business in the last 20 years. This includes the R&D Plan 2020–25 that has challenged the need to do better and asked the question "what can we do different?" Not surprisingly, this plan forecast the ocean crisis that was discussed at the United Nations Ocean Conference in Lisbon in June this year. I thank the previous Board for the legacy to change FRDC and position our organisation to have a significant engagement capacity and take advantage of the opportunities global disruptions will bring in the next decade. In April 2022 we recommenced face-to-face Board meetings and it has been very beneficial in getting to know our new directors Dr Chris Calogeras, Suzanne (Suzi) Hullick, Boris Musa, Alex Ogg and Dr Lyndal Thorburn. I am looking forward to working with them and getting to know them better.

I acknowledge the hard work and commitment of our staff, we have a very skilled and capable team, the core of which has been with FRDC for many years. It has been invigorating to see them look at new ways to tackle our research priorities, as new staff have come into FRDC and provided their input and contribution on our strategic priorities. I thank all staff for their continued commitment to ensuring that FRDC evolves and innovates in our research investments and extension activities so that we increase economic, social and environmental benefits for Australian fishing and aquaculture and the wider community.

Lastly, without our stakeholders we would achieve nothing. To those who deliver amazing science that places Australia as a world leader in fishing and aquaculture research, to the leaders across our diverse stakeholder groups who strive to build unity of purpose, and deliver enduring benefits from healthy aquatic environments, and to those who trust us with their financial investments, I say thank you.

Patrick Hone Managing Director



THE CORPORATION

FRDC

We are a co-funded partnership between the Australian Government and fishing and aquaculture and receive a single levy from farmed prawns. FRDC was established as a statutory corporation on 2 July 1991 under the *Primary Industries Research and Development Act 1989* (the PIRD Act). We are responsible to the Minister for Agriculture, Fisheries and Forestry.

Our role

We plan, invest in and manage research and development for fishing and aquaculture, and the wider community and encourage adoption of the resulting knowledge and innovation for impact.

Our planned outcome

We plan to achieve increased economic, social and environmental benefits for Australian fishing and aquaculture, and the wider community, by investing in research and development to increase knowledge, innovation and adoption.

Our representative organisations

We have three representative organisations declared under the PIRD Act:

- Australian Recreational and Sport Fishing Industry Confederation Inc. (trading as Recfish Australia).
- Commonwealth Fisheries Association Inc.
- Seafood Industry Australia.

We involve the Indigenous Reference Group and the Australian Recreational Fishing Foundation in all representational organisation activities.

Our stakeholders

Our stakeholders are Indigenous, commercial and recreational fishers and aquaculturists, including people involved in post-harvest activities, fisheries management, research, innovation, extension, the Australian Government and the Australian community.





Our R&D Plan

Our R&D Plan 2020–25 pursues a vision of creating collaborative, vibrant fishing and aquaculture, creating diverse benefits from aquatic resources, and celebrated by the community, by 2030.

At the core of the R&D Plan and our investments are five R&D outcomes and five enabling strategies to help us achieve those outcomes.



Five R&D outcomes

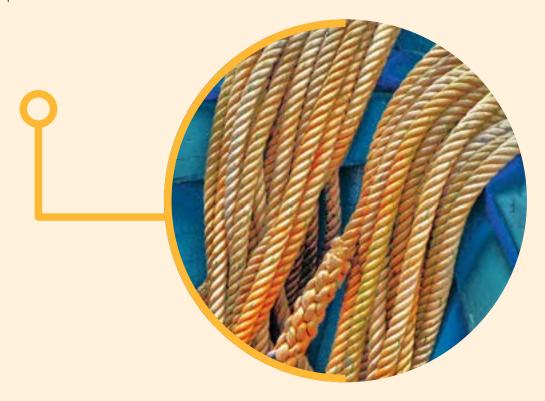
- 1. Growth for enduring prosperity.
- 2. Best practices and production systems.
- 3. A culture that is inclusive and forward thinking.
- 4. Fair and secure access to aquatic resources.
- 5. Community trust, respect and value.

Five enabling strategies

- 1. Drive digitisation and advanced analytics.
- 2. Strengthen adoption for transformative change.
- 3. Promote innovation and entrepreneurship.
- 4. Build capability and capacity.
- 5. Provide foundational information and support services.

Measuring success

Our Monitoring and Evaluation Framework details how we measure and evaluate our achievements, consistent with the Australian Government's Statutory Funding Agreement with FRDC and associated guidelines. We document our progress against this framework in our annual report and in six-monthly web-based performance reports.



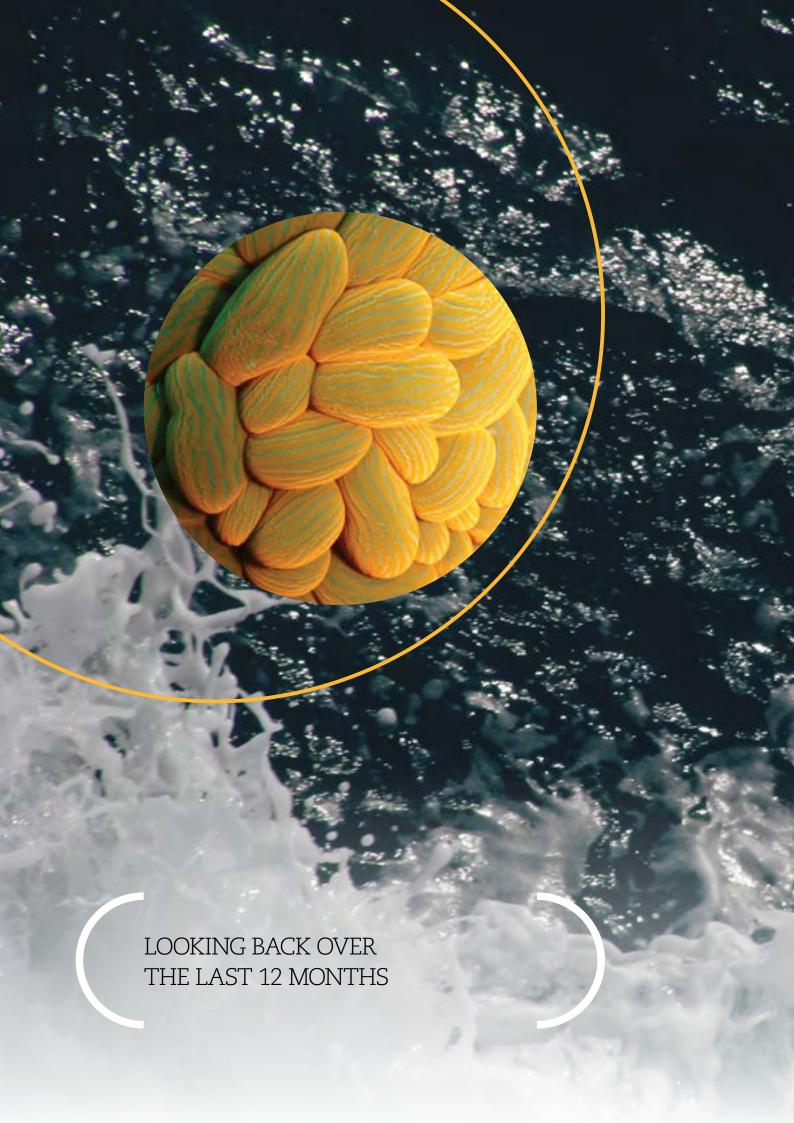
PERFORMANCE STATEMENT

Key performance indicators against 2021–22 Portfolio Budget Statement

FRDC met all of the 2021–22 Portfolio Budget Statement's (PBS) performance measures.

All financial targets were met this year. For a full explanation of budgetary variances, see pages 102–103 in the financial statements.

PBS performance criteria	Targets 2021–22	Results
Growth for enduring prosperity		
Enduring and balanced ecological, social and economic growth for the community benefit.	Invest in nominated priorities as identified by stakeholders in FRDC's AOP.	Achieved. Projects align with strategic priorities set out in FRDC's AOP and partner plans.
Best practices and production systems		
Diverse benefits from aquatic resources to be consistent with shared principles.	Invest in nominated priorities as identified by stakeholders in FRDC's AOP.	Achieved. Projects align with strategic priorities set out in FRDC's AOP and partner plans.
A culture that is inclusive and forward thinking	J	
A fishing and aquaculture community that is cooperative, diverse and well equipped to enable growth and adaptability in a complex and uncertain world.	Invest in nominated priorities as identified by stakeholders in FRDC's AOP.	Achieved. Projects align with strategic priorities set out in FRDC's AOP and partner plans.
Fair and secure access to aquatic resources		
Integrated management of Australia's aquatic resources, providing certainty and confidence	Invest in nominated priorities as identified by stakeholders in FRDC's AOP.	Achieved. Projects align with strategic priorities set out in FRDC's AOP and partner plans.
Community trust respect and value		
People feel good about using the products, services and experiences provided by fishing and aquaculture.	Invest in nominated priorities as identified by stakeholders in FRDC's AOP.	Achieved. Projects align with strategic priorities set out in FRDC's AOP and partner plans.



THE YEAR IN REVIEW

Appointment and reappointment of directors

The former Minister for Agriculture and Northern Australia* appointed five new directors and reappointed two directors to the FRDC Board on 1 September 2021. The new directors are Dr Chris Calogeras, Suzanne (Suzi) Hullick, Boris Musa, Alex Ogg and Dr Lyndal Thorburn. Two directors from the previous Board, Professor Colin Buxton and Dr Saranne Cooke, were reappointed.

FRDC Chair John Williams thanked outgoing directors Dr Kathryn (Kate) Brooks, Katina (Katie) Hodson-Thomas, Mark King, John Lloyd and Dr Lesley MacLeod for their hard work and service throughout their tenure.

* The Hon. David Littleproud MP was Minister for Agriculture and Northern Australia prior to the 21 May 2022 Federal election. Senator the Hon. Murray Watt was sworn in as Minister for Agriculture, Fisheries and Forestry on 1 June 2022.

Financial performance

In June last year, FRDC was predicting a slight increase in the GVP for 2021–22. This forecast was anticipated to be a slow recovery from the previous years' COVID-19 impacts and estimated to have a minor impact on the average three-year gross value production (AGVP) and FRDC's income this financial year. The aquaculture sector exceeded expectations resulting in an increase to the GVP of 15 per cent from the previous year determination. The key results for 2021–22 are:

- AGVP for 2021–22 was determined as \$3.23 billion, up from \$3.12 billion in 2020–21, an increase of 3.5 per cent.
- FRDC's government revenue was \$1 million over the conservative 2021–22 AOP forecast.
- 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. NSW Department of Primary Industries, and DAFF).
- FRDC met its eligible expenditure target for 2021–22 (determined as \$32.32 million).
- Research and development expenditure exceeded the AOP forecast for 2021–22 of \$29.66 million.
- Corporate costs were lower than forecast.
- FRDC achieved an unmodified audit from the Australian National Audit Office.



Isobel Sewell (left) and Kat Doughty are drawn to the potential of aquaculture to address food security and climate issues. They are working together on a project evaluating protein alternatives to fishmeal in aquafeeds.

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Statutory Funding Agreement

The 10-year FRDC Statutory Funding Agreement was signed by the former Minister for Agriculture, Drought and Emergency Management on 5 April 2020. The agreement sets guidelines and principles to ensure the performance and accountability of FRDC, and to help foster a culture of continual improvement.

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.

Further to the Statutory Funding Agreement, guidance is provided in the following supplementary documents as of March 2022:

- A Companion to RDCs Statutory Funding Agreement.
- RDC Knowledge Transfer and Commercialisation Guide.
- Best Practice Guide to Stakeholder Engagement.

These guidance documents underpin the new Guidelines for Statutory Funding Agreements. With these guidelines are key performance indicators (KPIs) for each of the five statutory principles of performance:

- stakeholder engagement,
- RD&E [research, development and extension] activities,
- · collaboration.
- Governance.
- Monitoring and evaluation.

The KPIs aligned with these guidelines have been incorporated into FRDC's Monitoring and Evaluation Framework to ensure efficient alignment for reporting.

FRDC staff and workforce changes

A number of pivotal staff changes were implemented at FRDC over the year as we continued to execute the Workforce Plan with the purpose to:

- create an inspiring and collaborative work environment embracing and enhancing innovation, growth, efficiency and agility,
- create greater impact and value for our stakeholders,
- strengthen extension,
- · create community impact,
- manage and monitor strategy and performance.

The changes for 2021–22 resulted in the following:

- restructure of the Stakeholder Engagement team, with the appointments of the General Manager Stakeholder Engagement and the Corporate Affairs Manager,
- creation and appointment of a new role of Capability, Capacity and Culture Change Manager to support
 change, new ways of thinking, embrace a culture of continuous adoption of knowledge, positive attitudes
 and on-going learnings associated with tools, processes and technologies,
- creation and appointment of the new role of Strategic Partnerships Manager,
- appointment of the ICT Manager as part of the restructure of the Information and Communications Technology and Digitalisation team,
- appointment of a new Research Portfolio Manager as part of the Research, Development and Investment team.
- appointment of a new Finance Officer as part of the Business Team, and
- creation and appointment of seven transformational extension and adoption positions, to undertake
 engagement, facilitation and communication with stakeholders to increase the impact of R&D (as per
 following section).

New extension approach

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

A range of initiatives were commenced in the 2021–22 year to improve extension and adoption including:

- employing seven extension officers, one in each state and territory (excluding the Australian Capital Territory)
- applying impact planning principles to investments to drive effective extension,
- providing strategic extension support to high impact projects.

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.

FRDC's R&D Plan 2020-25

FRDC has completed two years of its R&D Plan 2020–25.

FRDC's R&D Plan plays a key role in driving our organisational focus and impact. It was informed by a series of reviews, research and extensive consultation.

The plan seeks to drive impact in five outcome areas, through five cross-cutting enabling strategies. It is ambitious and seeks to encourage experimentation on new ways to enhance fishing and aquaculture into the future. The plan aligns with key global commitments including the United Nations Sustainable Development Goals and national commitments such as the National Fisheries Plan.

During 2021–22 FRDC used its investment capability to drive the five outcomes described in the plan. These were also guided by the AOP and developed with input from across fishing and aquaculture.

An increasing end-user focus and greater emphasis on collaboration with external partners have been central to progress over the second year of the plan. This has involved updating communications outputs to make them more intuitive and user-friendly and providing a clearer explanation of the FRDC's business model. The appointment of a dedicated strategic partnerships manager will also help to promote stronger collaborative networks on shared areas of interest.

FRDC ANNUAL REPORT 2021–22

A shared vision for the future of fishing and aquaculture

FRDC continues to promote collaboration among stakeholders from across fishing and aquaculture. Consultation undertaken in partnership with FRDC's representative organisations helped generate a shared vision for fishing and aquaculture by 2030, and opportunities that if seized, would help that vision become a reality. This assisted DAWE (now DAFF) in developing the National Fisheries Plan, which provides a blueprint for the growth of fishing and aquaculture in Australia.

Consultative structures and priority setting

Throughout the year, FRDC's focus has been on delivering its core business: planning, investing in, and managing R&D for fishing and aquaculture, and the wider community, and ensuring the resulting knowledge and innovation is adopted for impact. FRDC continued to engage and communicate with stakeholders using formal consultative structures (representative organisations, government, Research Advisory Committees [RACs], Industry Partnership Agreements [IPAs], and FRDC's Coordination Programs). This engagement played a vital role in ensuring high-quality research priorities were identified and transformed into outcomes.

Research Advisory Committees

The RACs play an important role in effective planning and investment processes by focusing on setting RD&E priorities that meet the needs of stakeholders within their respective jurisdictions. RAC membership has been expanded to include representatives of industry or sectors to focus on the end users of research.

The RACs also work with FRDC's jurisdiction-based extension officers to ensure that R&D outputs are appropriately extended to end users in a meaningful way.

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

The RAC Chairs at the end of 2021–22 are as follows.

Commonwealth and Northern Territory	Dr 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 IPAs are a key part of FRDC's business because they provide individual sectors with greater certainty for long-term investment against their R&D plans and priorities. 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. The R&D plans and priorities form the basis of investment for the coming financial year.

During the year FRDC had 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 Jeffriess
Oysters Australia	Andy Myers
Pearl Consortium	Nicole Anderson
Southern Ocean	Rhys Arangio and Malcolm McNeill
Southern Rocklobster Limited	Tom Cosentino
Tamanian Salmonid Growers Association Ltd	Sue Grau
Western Rocklobster Council Inc.	Matt Taylor

Other consultative research priority areas

FRDC also uses coordination programs to assist in the identification of priority areas such as human dimensions; aquatic animal health; biosecurity and engages with specific stakeholder groups including indigenous and recreational. These coordination programs are established as an FRDC's initiative, or at the request of a particular group. Over the past year, there were four coordination programs, Aquatic Animal Health and Biosecurity, Indigenous Fishing, Recfishing Research and Human Dimensions Research.

FRDC also depends on the contributions of many other bodies and agencies including:

- peak and representative bodies (from all sectors),
- Commonwealth, state and territory fisheries management and research agencies,
- many researchers who work on FRDC projects,
- numerous other interested people and seafood consumers FRDC engages with.

Indigenous Reconciliation Statement of Intent and Actions

FRDC's Indigenous Reconciliation Statement of Intent and Actions (IRSIA) was developed in recognition of the continued history and connection that Aboriginal and Torres Strait Islander people have with their traditional lands and waters. This Statement formalised FRDC's aspirations and outlines a range of activities to achieve these.

The IRSIA was developed and finalised in 2020 by FRDC's Indigenous Reference Group (IRG). This committee was established in 2012 to help advise FRDC on 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 FRDC and the R&D activities it funds across its entire portfolio.

As well as directly funding research activities, FRDC seeks to act as a conduit to organisations seeking to do similar work, such as the Indigenous Land and Sea Council, CSIRO, the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS), DAFF and various state government agencies.

The Statement confirms that FRDC:

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

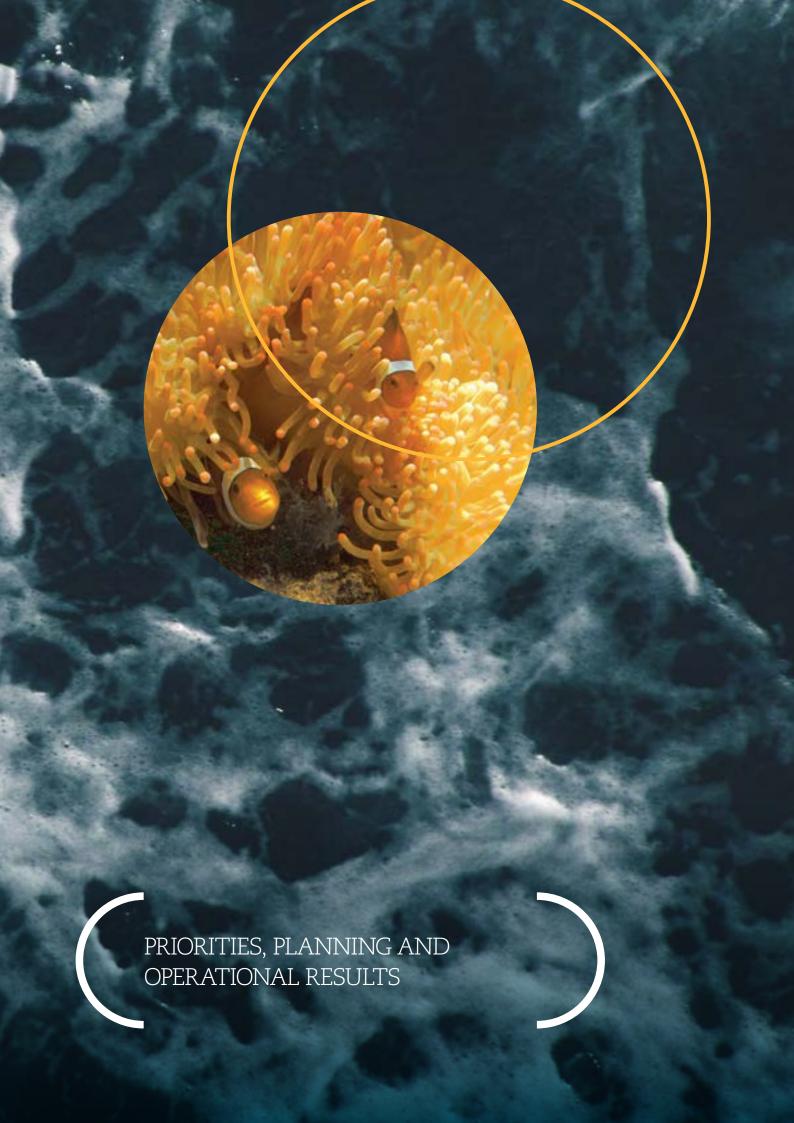
Key actions from the IRSIA which FRDC advanced in this year included the development of an affirmative traineeship role, continued collaboration with above-listed entities, collaboration with emerging entities such as the Economic Participation of Indigenous Communities (EPIC) CRC, and extension of AIATSIS cultural awareness training to staff.

National Carp Control Plan

Over the past six years, DAWE and 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, FRDC delivered the NCCP for consideration by government. At that time, it was agreed a small number of additional recommended research projects be undertaken to increase confidence in the final assessment. The COVID-19 pandemic caused some delays to these additional projects, as the biosecure facilities necessary for working with the virus prioritised COVID-19 research. However, these projects are now complete, and a draft final report incorporating the resulting insights has been delivered to DAWE. After consideration by DAWE/DAFF and other relevant agencies or committees, the final report will be delivered to DAFF in the latter half of 2022. 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.

Significant events after 30 June 2022

Nil.



COMMONWEALTH GOVERNMENT PRIORITIES

FRDC works closely with the Minister for Agriculture, Fisheries and Forestry and DAFF to ensure it delivers results that are in line with the Australian Government's Science and Rural RD&E priorities. FRDC invests in targeted projects that will assist in the delivery of the Australian Government's priorities. Government priorities are consistent with 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 20–21).

The following tables summarise the total expenditure allocated against each set of priorities within the 2021–22 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 FRDC projects fit Australian Government priorities.

Government research priorities attributed to each R&D program

NATIONAL AGRICULTURAL INNOVATION PRIORITIES

	\$	%
	m	
Trusted exporter of premium food and agricultural products	8.63	34.89
Champion of climate resilience to increase the productivity, profitability and sustainability of the agricultural sector	5.59	22.60
World leader in preventing and rapidly responding to significant pests and diseases through future-proofing our biosecurity system	5.57	22.51
Mature adopter, developer and exporter of digital agriculture	4.95	20.00
Total	24.73	100.00

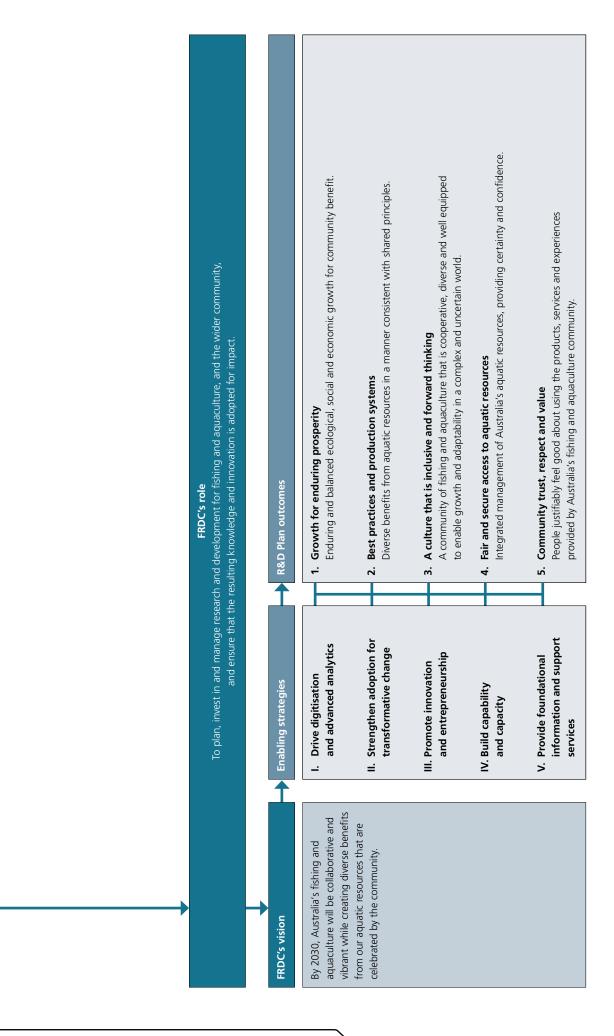
STRATEGIC RESEARCH PRIORITIES

	\$	%
	m	
Advanced manufacturing	1.58	5.21
Cyber security	0.06	0.20
Energy	0.10	0.32
Environmental change	2.43	8.04
Food	13.47	44.52
Health	1.18	3.90
Resources	2.27	7.49
Soil and water	9.12	30.13
Transport	0.06	0.19
Total	30.26	100.00

Not all projects align to the priorities. Figures in these tables have been rounded, hence totals may not agree with the component total of R&D financial figures.

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

and administration of marketing Make provision for the funding Mature adopter, developer and exporter relating to products of Energy primary industries. Object B of digital agriculture. Health Priority 4 (i) increasing the economic, environmental and social benefits to members of primary industries and to the community in general by improving the production, Cyber security 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. World leader in preventing and rapidly responding to significant pests and diseases through future-proofing **Environmental change** Objects of FRDC's enabling legislation—PIRD Act section 3 Make provision for the funding and administration of research and development relating to primary industries with a view to: our biosecurity system. (ii) achieving the sustainable use and sustainable management of natural resources, (iii) making more effective use of the resources and skills of the community in general and the scientific community in particular, Agriculture innovation priorities Science and research priorities (iv) supporting the development of scientific and technical capacity, (v) developing the adoptive capacity of primary producers, (vi) improving accountability for expenditure on research and development activities in relation to primary industries. Priority 3 FRDC's mission **Transport** the productivity, profitability and sustainability Advanced manufacturing Champion of climate resilience to increase processing, storage, transport or marketing of the products of primary industries, of the agricultural sector. Soil and water Priority 2 Resources Trusted exporter of premium food and Food agricultural products. Object A-Priority 1



Investment strategy—a balanced research investment approach

FRDC aims to spread its investment in R&D across the whole value chain of the commercial fishing and aquaculture industries, 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, FRDC invests 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 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 FRDC's project management system that is based on the key research priorities to inform future investment decisions and ensure a balance is maintained. 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 v.

Throughout 2021–22 and beyond, FRDC seeks to achieve maximum leverage from its investments by providing research administration and services using a value-adding model. FRDC aids in the development of priorities and provides advice and evaluations on applications addressing those priorities to decide on a specific outcome which is then actively managed and monitored.

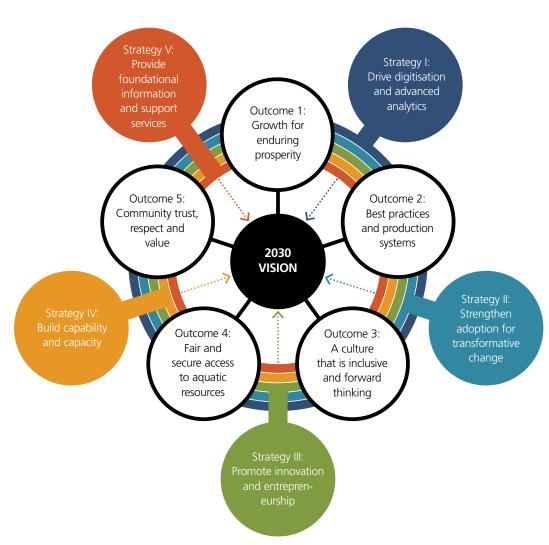
Cost allocation policy

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

There are two key documents that drive FRDC's strategy, operations and investment. These are FRDC's R&D Plan 2020–25 and its AOP. Both documents aim to work together to guide our vision of achieving collaborative, vibrant fishing and aquaculture, creating diverse benefits from aquatic resources, and celebrated by the community by 2030. The diagram below represents the vision, outcomes and strategies we are pursuing.

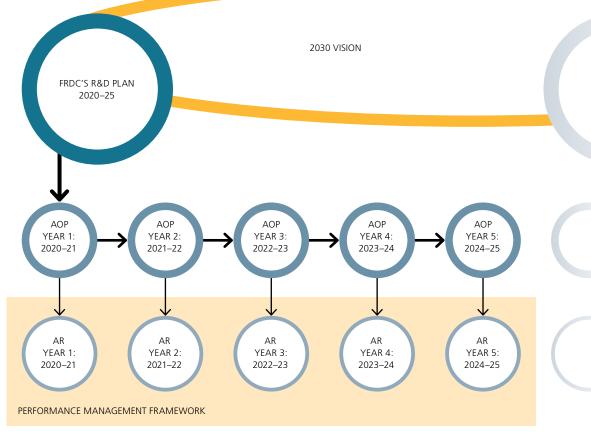


The R&D Plan focuses on five outcomes, supported by five enabling strategies that make progress towards those outcomes faster and easier. The R&D Plan aligns to key national initiatives such as the National Marine Science Plan, the Agricultural Innovation Policy Statement, and the National Fisheries Plan. It also recognises key international plans and obligations such as the United Nations Sustainable Development Goals.

Each year, FRDC's investment is guided by its AOP that outlines groups of activities to be progressed, and income and expenditure for the coming year. The 2021–22 AOP, that this annual report relates to, is the second of five to drive investment under the current R&D Plan.

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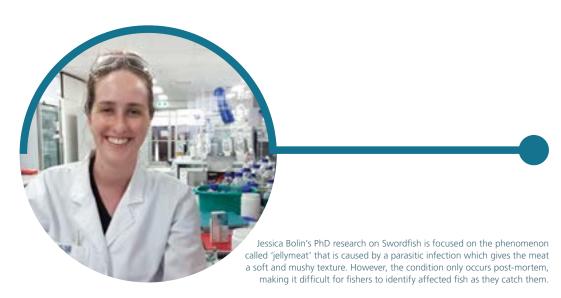
23



AOP: Annual Operational Plan AR: Annual report

FRDC's approach to investment during 2021–22 sought to manage distribution of investment to tackle issues of national importance, while at the same time ensuring that jurisdictional and sectoral needs were met. Planning and operations were aligned with FRDC's Statutory Funding Agreement, delivering balanced investment across timescales, risk appetite, and strategic/adaptive posture.

FRDC's investment during 2021–22 delivered a strong focus on: capacity building; optimising production; 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.



Relationships with stakeholders

FRDC continued to work with diverse and geographically dispersed stakeholders across fishing and aquaculture. These relationships are driven by a shared vision of working to address issues of concern.

In the latter half of 2021–22 the FRDC Board and staff recommenced visits to regional locations to engage directly with those involved in fishing and aquaculture and see issues first hand. 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 FRDC,
- return telephone calls by the close of business on the following day at the latest and provide information
 that is current and accurate.

Australian Government

In 2021–22, the former Minister for Agriculture, Water and the Environment (in the new Commonwealth government following the May 2022 election, this Ministerial portfolio is now called Agriculture, Fisheries and Forestry) and the Department provide the key priorities to be addressed from an Australian Government perspective. The Department acts as the routine policy intermediary between the Minister and 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.

FRDC understands adoption of research outputs by management agencies is key to optimising management outcomes. FRDC continues to work with AFMF, participating as an invited representative to its meetings, providing advice and ensuring AFMF priorities are incorporated into FRDC's planning and prioritisation processes.

Rural RDCs

FRDC continues to partner with other RDCs on a range of activities to enhance joint strategic outcomes. 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. FRDC is an active member of these groups driving several key areas, particularly the CRRDC's evaluation program.

Research partners

Investment in R&D activities and initiatives to promote adoption remained FRDC's core business throughout 2021–22. In any given year, FRDC has well over 400 active projects under management. As such, it is vital to FRDC's success that good relationships are built—and maintained—with its research partners.



FRDC ANNUAL REPORT 2021–22

R&D OPERATIONAL RESULTS

How to read FRDC's R&D operational results

The R&D Plan focuses on five R&D outcomes, supported by five enabling strategies that make achieving 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 FRDC's AOP, as well as providing an indication of relevance to enabling strategies where appropriate.

Key to investments and activities

OUTCOMES

1	Growth for enduring prosperity
2	Best practices and production systems
3	A culture that is inclusive and forward thinking
4	Fair and secure access to aquatic resources
5	Community trust, respect and value

ENABLING STRATEGIES		
		Drive digitisation and advanced analytics
		Strengthen adoption for transformative change
		Promote innovation and entrepreneurship
	IV	Build capability and capacity
	V	Provide foundational information and support services



OUTCOME 1: Growth for enduring prosperity

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



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 contribute to growth and diversification, helping Australia achieve the Government's target of growing agriculture to \$100 billion by 2030.

Confidence from economic security promotes innovation and new perspectives to 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 and fishing and aquaculture can affect natural systems. However, improved and better-informed management has seen fewer unwanted incidents.

Meanwhile, 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.

Key focus areas

During this R&D Plan, 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,
- increase understanding of the cause and extent of negative impacts to aquatic systems and how they can be minimised,
- 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.

2021–22 AOP problems/opportunities and outputs	Progress against AOP	Enabling strategy	RD&E investments started 2021–22
			RD&E investments completed in 2021–22
Tools to resolve provenance of fisheries and aquaculture products	On track: Activities underway		2021-021: The ongoing development, implementation, communication and extension of the Australian Fish Names Standard (AS 5300) and the Australian Aquatic Plant Names Standard (AS 5301) for 2021–25.
			2021-020: Stable isotopes: A rapid method to determine lobster diet and trace lobster origin?
			2021-099: National Seafood Industry Leadership Project 2022.
			2021-121: Capability and culture building—strategic program and integration development.
			2018-172: Methods to profile and connect the provenance of wild-caught prawn fisheries and their values to the community.
			2020-093: Discussion papers on seafood traceability and labelling.
Innovations to improve	On track:		2021-018: SafeFish 2021–2025.
food safety	Activities underway		2021-053: Building capability in food safety in Australian shellfish.
			2021-117: A global review on the implications of plastic in seafood.
			2021-108: Risk profile for paralytic shellfish toxins in Tasmanian periwinkles.
			2018-004: SafeFish 2018–2021.
			2018-107: Verification program for the use of 'Rapid Test Kits' to safeguard and grow the Western Australian shellfish industry.
			2017-203: Risk from diarrhetic shellfish toxins and dinophysis to the Australian shellfish industry.
Increasing use of emerging technologies in fisheries and	On track: Activities underway		2021-095: Designing the integration of extension into research projects: Tangible pathways to enhance adoption and impact.
aquaculture			2021-010: Wider investigation of the use of video survey techniques to determine commercial scallop abundance in inshore and offshore waters, closed areas and juvenile beds.
			2021-008: Utilisation of boat ramp cameras to estimate recreational fishing catch and effort in key Victorian fisheries
			2021-033: Aerial drones for un-manned use in Australian prawn farms.
			2020-100: Proof-of-concept for innovative new octopus shelter pot and trigger trap designs.
			2019-139: Evaluation of nanobubble technology in aquaculture.
			2021-122: Assessment of the utility of genomics for Sydney Rock Oyster breeding.
			2022-003: Evaluating the economic and environmental return on investment of modern fish screens.
			2019-213: Tackle Box—fishing at home during COVID-19.
Develop and progress implementation of	On track: Activities		2021-095: Designing the integration of extension into research projects: Tangible pathways to enhance adoption
strategy to increase adoption of FRDC- funded R&D	underway		and impact. 2021-121: Capability and culture building—strategic program and integration development.

2021–22 AOP problems/opportunities and outputs	Progress against AOP	Enabling strategy	RD&E investments started 2021–22	
			RD&E investments completed in 2021–22	
Identify opportunities to optimise fishing and	On track: Activities		2021-072: Pushing the envelope: Facilitating commercial performance in a changing climate.	
production practices and operations, including	underway		2020-100: Proof-of-concept for innovative new octopus shelter pot and trigger trap designs.	
utilisation of automation and alternative energy			2020-118: Pre-feasibility for a zero emission fishing fleet—prawn fishing case study.	
			2020-102: A review of fisheries enhancement methods to promote profitability and sustainability in Australian fisheries	
			2022-010: Assessment of the interactive effects of climate change, floods and discard stress on the commercially important Mud Crab and Blue Swimmer Crab—postgraduate.	
			2021-089: Climate resilient wild-catch fisheries.	
			2021-128: Australian Seafood Industries (ASI)—research to guide business improvement.	
			2021-033: Aerial drones for un-manned use in Australian prawn farms.	
			2020-089: Energy use and carbon emissions assessments in the Australian fishing and aquaculture sectors: Audit, self-assessment and guidance tools for footprint reduction.	
			2021-032: Provision of strategic advice to Oysters Australia—identifying opportunities and associated value for the Australian oyster industry in carbon neutral accreditation and environmental accounts.	
Knowledge to improve	On track:		2020-107: Seafood Directions Conference 2022, 2024, 2026	
understanding and societal values and	Activities underway		2019-042: A framework for advancing social acceptance of	
expectations, and align			the agriculture sector in Australia—a joint RDC initiative.	
activities across fishing and aquaculture			2021-092: Assessing effective approaches to engaging the food service sector.	
and aquaculture			2016-062: Coordination of the National Priority 1	
			Subprogram: To ensure that Australian fishing and	
			aquaculture products are sustainable and acknowledged to be so.	
Solutions that pair	On track:		2021-030: Digital transformation of the Western Rock	
artificial intelligence	Activities	(~\dot{\dot{\dot{\dot{\dot{\dot{\dot{	Lobster (WRL) industry to help resolve challenges and	
and existing datasets to create decision support	underway		leverage opportunities to grow GVP and maintain competitiveness.	
tools for business continuity and growth			2020-124: Australian Fisheries and Aquaculture Statistics 2019–2020.	
Determine critical	On track:		2021-002: Investing in our future: Stock assessment and	
financial, social and economic data elements	Activities underway	(XX)	the next generation. 2020-122: Human Dimensions Research Coordination	
and infrastructure to			Program 2021–24.	
meet future needs			2021-088: FRDC data governance framework—	
			development and implementation support.	
			2021-034: Identifying mechanisms and data collection options to aid socio-economic analysis of the Northern Territory seafood industry.	
			2017-092: Valuing Victoria's wild-catch fisheries and aquaculture industries.	
			2016-128: Human Dimensions Research Subprogram	
			management.	
			2016-213: Building economics into fisheries management decision making—to utilise a suite of South Australian case studies.	

2021–22 AOP problems/opportunities	Progress against	Enabling strategy	RD&E investments started 2021–22
and outputs A	AOP		RD&E investments completed in 2021–22
Options for optimising farming operations and increasing growth	On track: Activities underway		2021-085: Identifying mechanisms and data collection options to aid socio-economic analysis of the Northern Territory seafood industry.
and survival including knowledge to improve			2021-029: Minor use permit for praziquantel for non-Seriola finfish.
health and nutrition outcomes in aquaculture			2021-027: Minor use permit for erythromycin in finfish.
outcomes in aquacuiture			2021-076: Abalone viral ganglioneuritis (AVG) R&D needs workshop.
			2021-026: Water disinfection for influent water biosecurity on prawn grow-out farms.
			2021-075: Understanding water quality risk for the sustainable and efficient production of Pacific and Sydney Rock Oysters.
			2020-115: Demonstrating the impact of prawn viruses on prawn aquaculture production.
			2019-196: Investigation of common microorganisms and pathways in pearl oysters affected by health issues.
			2019-150: Feasibility study—assessment of the pearl oyster farming industry capacity to retrospectively investigate stock health concerns.
			2018-100: Optimisation of treatment of <i>Cryptocaryon irritans</i> in Barramundi aquaculture.
			2021-120: Minor use permit for toltrazuril in marine and freshwater finfish.
			2021-102: Commercial use of ATPase for the prediction of smoltification on Atlantic Salmon stock in Tasmania.
			2021-101: Minor use permit for oxytetracycline in marine and freshwater crustaceans.
			2021-097: Environmental risk factors that may contribute to vibrio outbreaks—a South Australian case study.
			2017-143: Transitioning cobia aquaculture research and development in Queensland to industry.
			2018-121: Sex reversal and sex differentiation in Atlantic Salmon.
			2017-113: Elucidating the nutritional requirements of farmed hybrid abalone.



Masters student Angus Watson and PhD student Jacinta Agius work closely with abalone farms to develop immune-priming strategies against abalone viral ganglioneuritis infection. Photo Karla Helbig.

2021–22 AOP problems/opportunities	Progress against	Enabling strategy	RD&E investments started 2021–22
and outputs	AOP		RD&E investments completed in 2021–22
Enhancing aquaculture broodstock—sourcing,	On track: Activities		2020-070: Overcoming propagule supply bottlenecks for seaweed production.
quality and supply	underway		2021-128: Australian Seafood Industries (ASI)—research to guide business improvement
			2021-115: Pipi hatchery production techniques and optimal restocking strategies.
Selective breeding to enhance and improve production in farming systems	On track: Activities underway		2020-096: National Pacific Oyster Breeding Program: Completing Pacific Oyster Mortality Syndrome (POMS) resistance in spat and transition to selection for traditional commercial traits.
			2020-053: Commercial delivery of genetically improved Sydney Rock Oysters.
			2021-122: Assessment of the utility of genomics for Sydney Rock Oyster breeding.
			2021-083: Developing the tools and articulating the value proposition for genomic selection in Pacific Oyster selective breeding.
			2021-047: Harnessing the aquaculture potential of Queensland's native rock oysters.
			2020-011: Taxonomy of northern Australia's commercially important Ostreidae.
			2017-220: Testing established methods of early prediction of genetic merit in abalone broodstock.
			2018-057: Population genomic assessment of Australian Blacklip Abalone for abalone viral ganglioneuritis resistance.
Identifying circular economy opportunities in fishing and	On track: Activities underway		2021-065: Industry moving towards a zero-waste fishery: A case study to future proof South Australia's Marine Scalefish Fishery.
aquaculture including			2020-119: New opportunities for abalone processing waste.
options to design waste out of the system, keep			2021-082: Nature-based solutions for prawn farm effluent using seaweed.
products and materials in use and promote repair			2021-136: FRDC investments in Marine Bioproducts CRC.
of natural systems		2021-055: Artificial reefs: Suitability of recycled materials for integration into purpose built artificial reefs for enhancing marine productivity, biodiversity and social outcomes.	
			2016-208: Waste to profit in urchin fisheries: Developing business opportunities to ensure fishery sustainability and safeguard reef dependent fisheries from destructive urchin grazing.



PhD candidate Reaz Chaklader is examining potential uses for waste products and substitutes for fishmeal proteins in aquafeeds. Trials indicate insect meal can be a component of new diets to test if juvenile Barramundi can survive without fishmeal in their feeds.



_	Progress against	Enabling strategy	RD&E investments started 2021–22
and outputs	AOP	3,	RD&E investments completed in 2021–22
Explore opportunities to enable Indigenous-led ventures	On track: Activities underway		2021-024: Development of an Indigenous Engagement Strategy for fishing interests with a focus on Commonwealth fisheries.
Opportunities for improving capability and capacity of the fishing	On track: Activities underway		2021-080: Australian Council of Prawn Fisheries IPA Management and Community Engagement, People Development Programs.
and aquaculture workforce, including direct connection to			2021-121: Capability and culture building—strategic program and integration development.
training, career paths			2021-099: National Seafood Industry Leadership Project 2022.
and job progression opportunities			2017-069: Indigenous Capacity Building Program.
Solutions for industry level biosecurity	On track: Activities		2021-061: Development of a guideline to investigate and understand disease outbreaks of unknown cause.
preparedness and border protection			2021-048: "Ready, set, go!" preparing for emergency disease outbreaks in aquatic animals.
			2020-095: Understanding white spot syndrome virus (WSSV) transmission in Moreton Bay—epidemiological modelling of surveillance data.
			2021-129: Understanding of spatial extent, infection window and potential alternative hosts for the oyster disease QX in Port Stephens.
			2021-097: Environmental risk factors that may contribute to vibrio outbreaks—a South Australian case study.
			2020-052: Aquatic Animal Health and Biosecurity Coordination Program: Strategic planning, project management and adoption.
			2019-086: Development of a national sector-specific biosecurity plan guideline and template for the farmed freshwater native finfish industry of Australia.
		2019-126: Assessing the biosecurity risk of uncooked whole and eviscerated Barramundi and grouper in relation to exotic viruses.	
			2017-190: Assessment of gamma irradiation as a feasible method for treating prawns to inactivate white spot syndrome virus.
			2015-005: Determining the susceptibility of Australian Penaeus monodon and Penaeus merguiensis to newly identified enzootic (YHV7) and exotic (YHV8 and YHV10) Yellow head virus (YHV) genotypes.



Dr Valentin Thépot (left) is the aquaculture coordinator for the Anindilyakwa Land Council on Groote Eylandt in the Northern Territory. Valentin and Scott Warramarrba, a member of the Council, are checking the water quality parameters at a tropical rock lobster survey site.

2021–22 AOP problems/opportunities	Progress against	Enabling strategy	RD&E investments started 2021–22
• • • • • • • • • • • • • • • • • • • •	AOP	J	RD&E investments completed in 2021–22
Knowledge regarding sources of variability			2021-077: Development of 'guidance' for conducting stock assessments in Australia.
in target species	underway		2021-025: Resolving the biological stock structure of Southern Ocean crab fisheries.
			2021-001: The emerging billfish fishing grounds of northern Australia: fisheries description, movements, and hot spots.
			2020-123: Biology and Ecology Program: Strategically targeting research on <i>Panulirus cygnus</i> and its ecosystem to suit the needs of the Western Rock Lobster fishing industry and stakeholders.
			2020-097: Investigating sources of variability in the Heard Island and McDonald Islands Patagonian Toothfish fishery.
			2020-008: Population biology of octopus species in New South Wales: Research to support developmental octopus trap fisheries.
			2018-070: Opportunities and impacts of range extending scalefish species: Understanding population dynamics, ecosystem impacts and management needs.
			2018-124: Southern Ocean IPA—science to support Australia's Southern Ocean Fisheries 2018–2020.
			2019-013: Modelling environmental changes and effects on wild-caught species in Queensland.
Outputs that assist in the maintenance of	On track: Activities		2021-028: Can novel seismic survey sources mitigate potential impacts to fisheries?
ecosystem services from aquatic ecosystems	underway		2020-073: Assessing the effectiveness of artificial reefs and fish aggregating devices (FADs) in creating recreational opportunities for Tasmania's recreational fishers.
			2022-003: Evaluating the economic and environmental return on investment of modern fish screens.
			2021-114: A synthesis of research conducted into the impacts of surface water abstraction on tropical aquatic species.
			2021-055: Artificial reefs: Suitability of recycled materials for integration into purpose built artificial reefs for enhancing marine productivity, biodiversity and social outcomes.
			2018-079: Ecological modelling of the impacts of water development in the Gulf of Carpentaria with particular reference to impacts on the Northern Prawn Fishery.
		2017-038: Long-term recovery of trawled marine communities 25 years after the world's largest adaptive management experiment.	
			2015-024: Managing ecosystem interactions across differin environments: Building flexibility and risk assurance into environmental management strategies.
Market and consumer research to understand success factors around	On track: Activities underway		2020-108: Seafood Market Access and Trade: Part 1. Australia–European Union free trade agreement (FTA) negotiations. Part 2. Australia–United Kingdom FTA
use of brands	-anacrway		negotiations. Part 3. Australia—India FTA negotiations. Part 4. Report–India identifying opportunities and impediments for Australian seafood exporters.
			2021-092: Assessing effective approaches to engaging the food service sector.
			2019-084: Seafood Marketing Symposium 2020.
			2015-710: Seafood CRC: Securing the legacy from the Seafood CRC investment in market research and
			development.

Examples of project activity during the year

Supporting the development of tropical oyster aquaculture

PROJECTS 2020-021, 2020-043

The emerging edible oyster industry in northern Australia involves Aboriginal communities, industry and governments and is working towards improvements in productions systems, biosecurity and capacity development. Initial volumes produced by this developing industry are likely to be small scale, targeting local markets, however there is significant potential to expand over time to service the broader Australian and international markets. These projects are supporting development by:

- assessing food safety concerns and risks,
- developing tests for toxigenic species that can affect oysters and humans,
- defining optimal temperatures for storage, transport and shelf life,
- providing recommendations and risk management protocols for monitoring and management,
- developing food safety program models.

New knowledge to inform enhancement of fisheries resources

PROJECTS 2017-019 AND 2018-053

A key limiting factor for fish productivity is the availability of suitable habitat. In freshwater environments overseas, installing fish attracting structures (FAS) has been beneficial for inshore fisheries and tourism, and decommissioned offshore marine structures such as oil rigs may also provide fishery enhancement opportunities. These projects are paving the way for Australia to enhance our stocks through:

- evaluating various FAS in their ability to attract native species in impoundments,
- measuring impacts on catch rates and angler satisfaction,
- modelling socio-economic values to drive information delivery for stakeholders,
- mapping marine man-made structures in Western Australia and model costs and benefits of different structure types.





OUTCOME 2: Best practices and production systems

Diverse benefits from aquatic resources to be consistent with shared principles



Ethical performance is now big 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, 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.



Gretta Pecl is Professor of Climate Change Ecology at the University of Tasmania and was the lead author for the Intergovernmental Panel for Climate Change Working Group II, which released the sixth climate report. She also initiated Redmap, which combines marine ecology and citizen science, adding to a living map of species distribution.

2021–22 AOP problems/opportunities and outputs	Progress against	Enabling strategy	RD&E investments started 2021–22
	AOP		RD&E investments completed in 2021–22
Knowledge regarding feasibility of behavioural approaches for the	On track: Activities underway		2021-042: Impacts of COVID-19 on the Australian Seafood Industry: Extending the assessment to prepare for uncertain futures.
uptake of best practice in fisheries and aquaculture operations			2022-001: Exploring changes in recreational fishing participation and catch due to COVID-19—a Western Australian case study.
			2019-078: Fishing for change: A social marketing approach to reduce the recreational harvest of Snapper and Pearl Perch in Queensland.
			2016-128: Human Dimensions Research Subprogram management.
Explore vehicles to	On track:		New facilitated approach to AOP development for 2022–23
deliver improved cross-sector collaboration, effectiveness and impact on shared strategic issues	Activities underway		2022-003: Evaluating the economic and environmental return on investment of modern fish screens.
Improve intelligence to inform decision making across fishing and	On track: Activities underway		2022-009: Quantifying Banded Morwong, Bluethroat Wrasse and Purple Wrasse abundance and movements to sustain key fisheries in Tasmania—postgraduate.
aquaculture			2021-038: Shark depredation in Australian fisheries: Understanding the scope of the issue and identify potential mitigation options.
			2021-046: Review of regulation and policy guiding use of artificial reefs and fish aggregating devices (FADs) in Australian waters.
			2022-008: Towards healthy and sustainable freshwater fish populations—assessing genetic health of priority fish species to inform management.
			2022-007: Trials of oceanographic data collection on commercial fishing vessels in south-east Australia.
			2022-006: Developing a harvest control rule to use in situations where depletion can no longer be calculated relative to unfished levels.
			2021-126: Review of domestic commercial vessel safety legislation.
			2021-123: Status of Australian Fish Stocks (SAFS) sixth edition.
			2021-063: Future Proofing: Integrating community quota, product supply, product innovation and market diversification in Australia's tropical tuna industry.
			2021-060: Analysis of historical sea urchin research for improved management of nearshore fisheries in New South Wales.
			2021-015: Estimating Narrow Sawfish (<i>Anoxypristis</i> cuspidata) abundance using close-kin mark recapture.
			2021-003: Maintaining productivity and access to Estuary Cockle across sectors through improved science-based decision making.
Identification and extension of best safety	On track: Activities		2020-067: SeSAFE—delivering industry safety through electronic learning.
practices	underway		2021-103: Safety in Seafood—saving lives through a culture of safety.
			2017-194: SeSAFE—delivering industry safety through electronic learning.

2021–22 AOP problems/opportunities and outputs	Progress against	Enabling strategy	RD&E investments started 2021–22
	AOP		RD&E investments completed in 2021–22
Develop and progress implementation of strategy to increase adoption of FRDC-	On track: Activities underway		2021-095: Designing the integration of extension into research projects: Tangible pathways to enhance adoption and impact.
funded R&D			2021-121: Capability and culture building—strategic program and integration development
Develop solutions to reduce waste, increase lifespan of products, and increase regenerative activities	On track: Activities underway		2021-065: Industry moving towards a zero-waste fishery: A case study to future proofing South Australia's Marine Scalefish Fishery. 2020-119: New opportunities for abalone processing waste. 2021-082: Nature-based solutions for prawn farm effluent
			using seaweed.
			2021-136: FRDC investments in Marine Bioproducts CRC.
			2021-055: Artificial reefs: Suitability of recycled materials for integration into purpose built artificial reefs for enhancing marine productivity, biodiversity and social outcomes.
Engage through cross-RDC climate initiative to advance solutions to support	On track: Activities underway		2021-032: Provision of strategic advice to Oysters Australia —identifying opportunities and associated value for the Australian oyster industry in carbon neutral accreditation and environmental accounts.
resilience to a changing climate			2022-059: Agricultural Innovation Australia (AIA) climate initiative partnership.
			2016-059: Guidance on adaptation of Commonwealth fisheries management to climate change.
Environmental	On track:		2020-105: Development of a stock status report card for
sustainability and compliance initiatives	Activities underway		rays and sharks. 2020-095: Science to support Australia's Southern Ocean Fisheries 2021–2023.
			2020-026: Habitat ecological risk assessment for eco-regions with high trawl footprints, in southern Queensland and northern New South Wales.
			2021-086: Tuna Champions v2.0: Blue-fin and beyond.
			2021-037: Determining if the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) Management Procedure sufficiently demonstrates sustainability credentials of Australian Southern Bluefin Tuna.
			2022-009: Quantifying Banded Morwong, Bluethroat Wrasse and Purple Wrasse abundance and movements to sustain key fisheries in Tasmania—postgraduate.
			2022-008: Towards healthy and sustainable freshwater fish populations—assessing genetic health of priority fish species to inform management.
			2022-007: Trials of oceanographic data collection on commercial fishing vessels in south-east Australia.
			2021-123: Status of Australian Fish Stocks (SAFS) sixth edition.
			2021-119: Improving bycatch reduction strategies and escape vents in Queensland Mud Crab fisheries.
			2016-062: Coordination of the National Priority 1 Subprogram: To ensure that Australian fishing and aquaculture products are sustainable and acknowledged to be so.

2021–22 AOP problems/opportunities		Enabling strategy	RD&E investments started 2021–22
and outputs	AOP	3,	RD&E investments completed in 2021–22
Exploring solution to reduce interactions with threatened, endangered and protected species	On track: Activities underway		2021-092: Whale Entanglement Mitigation Program—understanding whale population dynamics, entanglement dynamics and gear modifications to reduce entanglements in Western Rock Lobster gear.
			2021-078: Improving the management of wildlife interactions in pelagic longline fisheries.
			2019-129: Potential transition of shark gillnet boats to longline fishing in Bass Strait—ecological, cross-sectoral, and economic implications.
R&D to define benefits of partial spatial	On track: Activities		2021-070: The multiple values attained through partially protected areas.
protection	underway		2021-064: Using multiple values to inform the management of Australian marine partially protected areas.
Options for harvest and dispatching that deliver improved quality and	On track: Activities underway		2021-071: Minor use permit to sedate finfish using Australian Pesticides and Veterinary Medicines Authority (APVMA) registered products containing isoeugenol.
welfare outcomes			2021-027: Minor use permit for erythromycin in finfish.
			2019-023: Practicing aquatic animal welfare: Identifying and mitigating obstacles to uptake and adoption by the Australian fishing industry.
			2019-160: Holding methods for mud crabs.

Examples of project activity during the year

Staying ahead of white spot disease

PROJECT 2019-095

The Australian Aquatic Veterinary Emergency Plan (AQUAVETPLAN) is a series of manuals that outline Australia's approach to national disease preparedness and propose the technical response and control strategies to be activated in a national aquatic animal disease emergency.

The white spot disease manual was first published in 2005, and the second version was published in 2013. Under this project the manual has been brought up to date to reflect new scientific knowledge, and to ensure that strategies used for white spot disease control purposes reflect current 'best-practice' approaches.

Equipping Australia's fisheries for climate change

PROJECT 2016-059

Climate change is wreaking havoc in natural systems, and the plans that fisheries managers and other fisheries stakeholders have in place today may quickly prove inadequate to deal with ongoing environmental changes. A fast and efficient re-evaluation is needed, which is where the new *Adaptation of Commonwealth fisheries management to climate change* handbook comes in.

The handbook 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, and qualitative modelling is used to assess a range of management responses to different climate change impacts.





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



'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—will require a culture that is focused on solutions, resourceful and willing to collaborate.

To change culture, you must modify what shaped it in the first place. This means identifying the underlying beliefs, relationships and norms that are influencing decision making and challenging assumptions and expectations. This requires developing new ways of working together.

Key focus areas

FRDC explores 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.

FRDC aims 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.

2021–22 AOP problems/ opportunities and outputs	Progress Enabling against strategy	RD&E investments started 2021–22	
	AOP		RD&E investments completed in 2021–22
Advance strategy to	On track:		2020-126: Australian Agrifood Data Exchange (OzAg Data
enhance innovation and	Activities		Exchange): Deliver an interconnected data highway for
entrepreneurship across	underway		Australia's agrifood value chain.
fishing and aquaculture			2020-118: Pre-feasibility for a zero emission fishing
			fleet—prawn fishing case study.
R&D to understand	On track:		2021-121: Capability and culture building—strategic
and report on cultural	Activities		program and integration development.
dynamics of fishing	underway	(90)	Partnership with Food Innovation Australia Limited (FIAL):
and aquaculture			SenseMaker case study—SeSAFE.
Develop and progress	On track:		2021-095: Designing the integration of extension into
implementation of	Activities		research projects: Tangible pathways to enhance adoption
strategy to increase	underway		and impact.
adoption of FRDC-			2021-121: Capability and culture building—strategic
funded R&D			program and integration development.
			2021-104: Applying the fisheries climate adaptation
			handbook to Australia's state fisheries.
Davalon and commerce	On track:		2021-121: Capability and culture building—strategic
Develop and commence implementation if	On track: Activities	(:0:	program and integration development.
a strategy to build	underway		program and integration development.
capability, capacity and	unuerway		
culture change across			
fishing and aquaculture			
Development of a	On track:		Partnership with AgUp initiative.
digital employment	Activities		2021-103: Safety in Seafood—saving lives through a culture
and training solution for	underway		of safety.
Australia's seafood sector			or surety.
Experiment with	On track:		2020-120: Assessing the effectiveness of Indigenous
approaches to improve	Activities		Reference Group R&D projects to deliver change.
definition of priority	underway		
problems/opportunities			
to deliver outcome			
Case studies that	On track:		2021-098: Incorporating Aboriginal perspectives into fisher
document benefits of	Activities		management review processes, using the Northern Territory
diversity in decision	underway		Barramundi Fishery as a case study.
making			



Examples of project activity during the year

National Seafood Industry Leadership Program

PROJECT 2017-003

FRDC's National Seafood Industry Leadership Program (NSILP) faced an uphill challenge when COVID-19 disrupted its face-to-face format. However, participants rallied to support each other, and a promising new model of operating emerged by offering fully online options for participation which allowed people to continue to learn and network throughout the lockdowns.

FRDC has run the NSILP since 2000 and there have been more than 300 graduates to date. Participants come from all parts of the seafood sector—from recreational fishers to traditional owners living in the Torres Strait, small business owners to Australian Government employees. Graduates are of all ages and include people working as processors, exporters, importers, marketers and deckhands. The program exposes participants to guest speakers and networking events and breaks them up into small groups to work on a sector-related project. At the end of the six months, the groups present their projects to sector and government dignitaries in Canberra and seek assistance to complete them.

Australian Rural Leadership Foundation

PROJECT 2016-408

FRDC regularly sponsors participants to take part in the Australian Rural Leadership Foundation. These leadership programs are designed in-house with the specific intention to incubate and accelerate the development of leadership practices. Our programs also encourage participants to:

- create and share knowledge and assets within groups and communities,
- · collaborate and experiment within an ever-expanding leadership network,
- · support the learning of others through informal and formal structures including mentoring and coaching,
- generate curiosity, desire and confidence to co-create a more positive future,
- develop skills to engage in robust conversations, challenge assumptions and influence change to achieve positive social, environmental and economic impacts.



The Port Lincoln Group 2020 was one of three cohorts taking part in National Seafood Industry Leadership Program. They began their course in Port Lincoln and elected to continue their program online during COVID-19.

Pictured from left: Daniel Chen, Claire Webber (guest NSILP graduate), Cassie Pert, Jaime McAllister, Sal Bolton, Sean Larby, Meaghan Dood, Hika Rountree (withdrew), Rattana Wiriyakiat, Ash Lukin (guest NSILP graduate), Anthony Tennant, Darci Wallis, Adam Radford (withdrew), Patrick Cavalli, Ciara Farrell (withdrew), Dene Rodd, Basia Lamb (withdrew), Bianca Dubber (withdrew), Natalie Manahan and Luke Cordwell.



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:

8 DECENT WORK AND SECONDARY OF AND INFRASTRUCTURE 10 REQUALITIES 14 BELOW WATER AND STRONG INSTITUTIONS

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

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 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.

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. This has led—at times—to trade-offs, environmental impacts, unnecessary complexity, ineffectiveness, inefficiency and increased costs.

Key focus areas

FRDC explores 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. These include:
 - 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.

2021–22 AOP problems/opportunities and outputs	Progress against	Enabling strategy	RD&E investments started 2021–22
	AOP		RD&E investments completed in 2021–22
Develop and progress implementation of strategy to increase adoption of FRDC- funded R&D	On track: Activities underway		2021-121: Capability and culture building—strategic program and integration development. 2021-095: Designing the integration of extension into research projects: Tangible pathways to enhance adoption and impact.
Explore case studies to enable enhancement of integrated management	On track: Activities underway		2021-049: Developing and testing a cultural change process in the New South Wales wild-harvest sector: A case study to facilitate a process towards co-management in the New South Wales Northern Fish Trawl.
R&D to understand and compare values of	On track: Activities		2021-131: World Recreational Fishing Conference 10. Melbourne 19–23 February 2023.
aquatic resource users	underway		2021-059: Biological, commercial and socio-economic outcomes of management reform in the South Australian Marine Scalefish Fishery—lessons for multi-species individual transferrable quota (ITQ) fisheries.
			2021-024: Development of an Indigenous engagement strategy for fishing interests with a focus on Commonwealth fisheries.
			2020-088: Quantifying inter-sectoral values within and among the Indigenous, commercial and recreational sectors.
Reported statistics on level of adoption of harvest strategies and co-management across fishing and aquaculture	Behind		In development.
Explore opportunities for meaningful two-way	On track: Activities		2021-090: Developing an Indigenous-led governance blueprint for collaboration in sea country processes.
engagement with Indigenous communities on matters relating to	underway		2021-050: Maintaining cultural practices and building knowledge and capacity to support sustainable fishing of the Gynburra on Narungga Sea Country.
access			2021-098: Incorporating Aboriginal perspectives into fishery management review processes, using the Northern Territory Barramundi Fishery as a case study.
			2021-024: Development of an Indigenous engagement strategy for fishing interests with a focus on Commonwealth fisheries.
Case studies demonstrating cross- sector collaboration on shared issues	On track: Activities underway		2021-022: Establishing influence of environmental factors on trace element profiles database and sampling frequency.
Efforts to promote development and	On track: Activities		2020-029: Responding to unintended consequences—evaluating changes to fisheries under ITQ systems.
adoption of frameworks	underway		2019-165: Design aspects of well-functioning ITQ markets.
and management styles that allow flexibility across fishing and aquaculture			2015-024: Managing ecosystem interactions across differing environments: Building flexibility and risk assurance into environmental management strategies.
Global review of how fisheries and aquaculture have been accounted for in the blue economy and cross-sector ocean governance	Behind		In development.

Examples of project activity during the year

Telling fishing and aquaculture's economic and social contribution story

PROJECT 2017-210

In this project, researchers from the University of Tasmania gathered the information required to support the Australian fisheries and aquaculture industry to "tell its story" of its contributions to the national, state and regional economies and communities. This study is an exciting step forward, that lays the groundwork for the Australian seafood industry to celebrate its economic and other contributions and to showcase these to its communities and to Australians in general.

This is the first time the economic contribution of the Australian seafood industry has been reported. This study demonstrates a nationally consistent approach to estimating the industry's economic contributions and supports the ability for individual industries and jurisdictions to monitor trends in the size of contributions over time. Furthermore, this information can be used by the Australian fisheries and aquaculture industry and government agencies for: improving current understanding of industry contributions and future analysis of impact; reporting and accountability of flow-on effects; engagement with surrounding regional communities; and advocacy activity.

National Recreational Fishing Survey

PROJECT 2018-161

The National Recreational Fishing Survey identifies the range of economic and social values of fishing for fishers, businesses and communities across Australia. It will provide the first up-to-date picture of the value of recreational fishing in Australia since 2001.

The survey was initially planned to be conducted between December 2018 and November 2020 however this was extended to start in June 2021 to assess the impacts of COVID-19 on fishing activity. The survey developed and tested new methods to reduce future costs while maintaining robustness.

The survey comprised 20,368 people collecting data on participation, demographics, impacts of COVID-19 on fishing activity, bait use, fishing effort, substitutability in fishing, social licence, social connection, economic contribution, economic flow, physical activity, wellbeing and stewardship.

The outputs provide the most up-to-date data on recreational fishing at a national level. It also provides data that has not previously been collected in Australia, including wellbeing, social licence, social connection, national, jurisdictional and regional economic contribution, physical activity, stewardship and the impacts of COVID-19 on fishing activity.





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:

2 ZERO
8 DECENT WORK AND PAND INFRASTRUCTURE 12 RESPONSIBLE CONSUMPTION AND PRODUCTION AND PROD

Community support is essential if Australia's fisheries are to grow and prosper and aquaculture activities are no exception. Achieving and retaining this support means that fishing and aquaculture need to show their use of publicly-owned resources can be compatible with community values and also deliver societal benefits.

FRDC research has determined the main reasons society does, or will, support fishing and aquaculture, these 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

FRDC explores 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 the end user.

2021–22 AOP problems/opportunities and outputs	Progress against AOP	Enabling strategy	RD&E investments started 2021–22
Develop and progress implementation of strategy to increase adoption of FRDC- funded R&D	On track: Activities underway		2021-121: Capability and culture building—strategic program and integration development.
Case studies and extension activities to share insights from	On track: Activities underway		2021-095: Case studies demonstrating cross-sector collaboration on shared issues.
successful cross-sector collaboration on shared issues	,		Grow ^{AG} and AgUP participation. 2019-042: A framework for advancing social acceptance of the agriculture sector in Australia—a joint RDC initiative.
Develop and incorporate cross-sector insights,	On track: Activities		2020-098: Consumer and market data to inform Love Australian Prawns 2021–22.
metrics and analytics into tracking of community	underway		2019-042: A framework for advancing social acceptance of the agriculture sector in Australia—a joint RDC initiative.
and sector values			2021-080: Australian Council of Prawn Fisheries IPA Management and Community Engagement, People Development Programs.

Examples of project activity during the year

Community Trust in Rural Industries—a cross-RDC initiative

PROJECT 2019-042

The Community Trust in Rural Industries Program is a collaborative partnership involving 11 rural RDCs (including FRDC), the National Farmers' Federation and New South Wales Department of Primary Industries to build the capacity of food and fibre industries to productively engage with the community.

The trust landscape has shifted significantly in recent times. No business sector can rely solely on their financial contribution to the economy, job creation, innovative technologies or strong values as a benchmark for best practice. Increasingly, the public are influencing benchmarks for best practice. Unless industries can effectively engage with the public on issues and values important to them, in a transparent and consistent manner, then community trust will be compromised and so will their ability to do business effectively.

This program is a capacity-building initiative to drive a productive and cohesive response to changes in cross-sector community trust. Over an initial three-year period, community research has been undertaken by VoconiQ (powered by CSIRO) to provide insights on cross-sector issues and best practice approaches. The third round of study was completed in 2021–22, with the final report scheduled to be released early in August 2022.

SafeFish—supporting trust and value with tangible data

PROJECT 2021-2025

The SafeFish program is primarily funded by FRDC and is the leading platform in for dealing with food safety and trade and market access issues affecting Australian seafood. The technical program is underpinned by a strategy to identify current and emerging food safety and market access issues, prioritise these issues, and undertake technical work to provide potential solutions to overcome those of highest priority. Following the 2019 hazard identification and issue prioritisation process, the following issues were identified as having the highest priority to the Australian seafood industry and have been the focus of the SafeFish work program this year:

- developing a food safety risk register for the seafood industry,
- building on the national seafood risk register and developing specific sector risk registers/mitigation plans,
- assisting the Seafood Trade Advisory Group (STAG) to develop an online 'Seafood exporters module',
- raising the awareness of ciguatera fish poisoning with health professionals.



ENABLING STRATEGIES

To help make progress towards the five R&D Plan outcomes faster and easier, 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 digitalisation 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 there are 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 more affordable. Increased collaboration across sectors and industries should also motivate the uptake of advanced analytics across fishing and aquaculture.

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

FRDC led the working group for the compliance and traceability experiment on the rock lobster quota in Western Australia 'use case' under the Australian Agrifood Data Exchange project. Australian Western Rock Lobster (*Panulirus cygnus*) was chosen as the commercial species for the experiment because it was:

- a predominantly export oriented product,
- a premium product in the global markets,
- · has a clean and green reputation,
- its markets want more information,
- data challenges involve fishers, government agency and post-harvest actors.

While working on showcasing traceability, the working group also wanted to address other pressing issues such as logistics planning, accelerating quota reconciliation of fishers' catches and streamlining compliance reporting.

The technology partners for the use case were Telstra and IBM, who combined their capabilities and platforms, including Telstra Data Hub and IBM's Blockchain Transparent Supply. Industry partners in the fisheries experiment included lobster fishers represented by the Western Rock Lobster Council Inc., rock lobster processors Geraldton Fishermen's Co-operative and Indian Ocean Rock Lobster, and the Western Australian Department of Primary Industries and Regional Development.

The aim of the 12-week experiment was to demonstrate how permitted data sharing underpinned by robust security and access control, can result in trust and collaboration to unlock more value from collected data.

The proof of concept was a success, and learnings from it will underpin more future digital transformation projects.





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. 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:

- 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.
- 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).

Over the life of its R&D Plan 2020-25 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.

Examples of project activities during the year

Improving the two-way exchange of information between the people in fishing and aquaculture and researchers

PROJECT 2021-100

In response to feedback from fishing and aquaculture stakeholders, FRDC has this year appointed regionally-based extension officers across Australia to directly engage with the people involved in Indigenous, commercial and recreational fishing and aquaculture to increase the adoption of research outcomes and help tailor R&D to their needs.

The extension officers are looking at solutions for regional issues in ways that can be adapted across the country, and will help all stakeholders tap into previous, current and future research to find workable solutions.

Supporting growing adoption in the Southern Rock Lobster Clean Green program

PROJECT 2017-224

Currently, more vessels are participating in the Clean Green program than at any stage since its inception in 2004. In excess of 200 Southern Rock Lobster fishing vessels across Southern Australia are members of the Program. Re-aligning Clean Green to address new and changing legislative requirements has been the key driver for the increased support from industry.

This program continues to successfully demonstrate that the industry is well organised and mature enough to address its responsibilities and interests through an industry developed and owned, self managed and independently audited, standards-based program in the key areas of:

- Vessel safety management system and on-board work health and safety—specific to the risks of Rock Lobster fishing vessel operations and workplace risks and hazards.
- Food safety and quality implementing good manufacturing practice to ensure a premium live, healthy
 product across the supply chain.
- Animal welfare—important in itself, and expected by the community, but also important from an economic
 perspective; live and healthy rock lobsters achieve a premium price and in what is predominately a live-trade
 industry.
- Environmental management/sustainability—best practice management of fishing operations within the marine environment, including addressing threatened, endangered and protected species requirements plus responsible disposal and recycling of marine wastes e.g. oil, plastics and cardboard, and not supporting the use of plastic bait box straps.
- Sustainable management—ensuring the wild rock lobster stocks are managed for long-term sustainability through ongoing compliance with the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Southern Rock Lobster has completed a project to deliver the Clean Green program in a digitised format, that is via an app suitable for use on iPhone and iPad platforms. In addition to reviewing current program content for the 'catching sector', the project will also review the original material developed for the post-harvest sector (processing/exporting operations) for digitisation and expand the program across the supply chain.



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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 work together to explore solutions to 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 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 payoffs, 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 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

Farmers 2 Founders

In 2021–22, one of FRDC's key commercialisation investments was to support Farmers 2 Founders, a program to help build agrifood technology and innovation solutions that deliver commercial benefit and industry impact. Within this program, producers collaborate with agrifood tech developers and innovators to fast-track development, commercialisation and uptake through three tracks:

- Hatch—validating business ideas with customers and building skills and networks.
- Hone—building sustainable business models for startups by establishing roadmaps.
- Harvest—equipping high potential agrifood businesses with the capabilities to scale.

Within this program, five aquaculture participants were successful in developing concepts which were moved to the aquaculture journey starter. From this cohort, two participants completed the entire program and are now actively seeking to scale up their businesses, and a third participant who participated through the hatch and hone tracks, is pursuing partnerships to advance their innovation. The three commercial developments resulting from this program are:

- EcoSystem Farms—using cutting edge technology to grow fish and plants in a recirculating soil-less system.
- Fouling Doctors—automated technology to stop biofouling in aquaculture systems.
- Skincare range using waste streams from sea urchins.

Partnership in the Marine Bioproducts Cooperative Research Centre

Over the next 10 years, the Marine Bioproducts Cooperative Research Centre (MB-CRC) plans to establish products and processes that will underpin entirely new industries for Australia's marine estate. FRDC is one of the organisations to sign on to the MB-CRC as a partner, bringing three seaweed-related research projects into the MB-CRC program. Two projects are investigating the use of seaweeds in water treatment processes, with the third project investigating year-round seaweed propagation.

Marine biochemicals, such as algae-based cellulose, can replace petrochemicals as the base ingredient in many products, particularly plastics. They can be used in electronic systems, where biocells are being developed, and in renewable energy, where marine products could provide an alternative option to the balsa wood used for the blades on wind turbines.

The MB-CRC has three research programs:

- 1: Sustainable marine resources, achieved through developing cultivation skills, technologies and management practices to grow high-quality marine bioproducts sustainably and cost effectively.
- 2: Innovative bioprocessing technologies designed specifically for the Australian marine bioproducts industry and critical for its growth.
- 3: Australian marine bioproducts—selection, development, validation and delivery of a range of certified, evidence-based, high-value Australian marine bioproducts into global markets.



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ENABLING STRATEGY IV: Build capability and capacity

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 resilience and preparedness. 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 of the R&D Plan. 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 clearly convey 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

Programmatic capability and culture change

PROJECT 2021-137

The ability to attract, develop and retain capable people is one of the major challenges facing Australian fishing and aquaculture. FRDC is working with stakeholders to invest in the potential of people to thrive in an uncertain world through a plan to build capability and capacity.

The 'Capability and Capacity Plan' is focused on:

- determining future workforce needs,
- attracting and retaining capable people,
- connecting people and promoting collaboration,
- growing and nurturing diverse leaders,
- · supporting innovation, learning and adaptation,
- developing tools and resources to help people navigate career, leadership and development pathways.

FRDC's Capability and Capacity Program is being led by Sally Roberts, who joined FRDC during the 2021–22 year as Capability, Capacity and Culture Change Manager. She is passionate about unlocking individual and collective potential by developing people, and is experienced in leading collaborative RD&E projects to transform workplace practices and drive adoption of new technologies and methods.

Exploring new ways to improve safety at sea

PROJECTS 2017-231 AND 2020-067

The SeSAFE project has continued to grow and adapt to changes in the operating environment and emerging technologies with an emphasis on raising safety awareness and the development/delivery of safety training modules. The focus of this project includes:

- filling the gap that allows new crew to step foot on a dangerous work platform before receiving any safety training,
- providing consistent safety training content to all fishers nationwide,
- promoting SeSAFE as the industry benchmark in pre-sea safety training, that also serves to demonstrate achievement towards duty-of-care requirements,
- developing a standard of achievement and certificate of completion, for use as a recognised industry standard and potential requirement for employment at sea,
- overcoming jurisdictional inconsistencies and inadequacies in safety training,
- developing fishery-specific modules for multiple fisheries, to complement onboard safety inductions,
- extending SeSAFE training to seafood processors, fishery observers and others,
- establishing a secure funding base to ensure persistent, long-term delivery of SeSAFE training as well as a permanent hosting organisation, e.g. Seafood Industry Australia.



Image provided by Millstream Productions.



ENABLING STRATEGY V: Provide foundational information and support services

Organised information provides the ability to make and justify good decisions. 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, 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, nearreal-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 inform their decision making (R&D Plan Outcomes 1, 2, 4,
- 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

Quantifying microplastics in seafood

PROJECT 2017-199

Plastic pollution has become a significant environmental issue worldwide. World plastics production has increased from around 1.93 million tonnes in 1950 to more than 335 million tonnes in 2013. Although governments are looking to reduce the use of plastics, it is still appearing in marine environments. Besides plastic objects entering the ocean and being broken down into smaller pieces, wastewater and runoff also carry microplastics. Understanding and quantifying the impacts of these plastics on seafood is critical to providing clear information on food safety and will also provide firm evidence to guide public perceptions of the safety of seafood products. The objectives of this project were to:

- determine how widespread the presence of plastics in Australian seafood sold for human consumption is and how this varies across the country including from metropolitan and non-metropolitan markets;
- place the presence/absence of plastics in Australian seafood into the international context.

Development of seafood nutritional panels

PROJECT 2017-145

This project addressed a need for a common baseline of nutritional information and compositional profiles in suitable formats for consumers. It determined the nutritional data for 25 commercially important wild-catch seafood species, where none existed previously. These panels are a regulatory requirement and sought by consumers.

Additionally, it helped to fill a need to ensure that nutritional information on the key species (those covered in the Status of Australian Fish Stocks Reports) and profiled on the FRDC consumer website Fishfiles, was readily available. This study broadens previous FRDC studies that undertook oil analysis for 250+ Australian species. These panels are a regulatory requirement and a consumer demand.

This work assisted the seafood sector to:

- promote the public health benefits of seafood consumption more generally,
- have rapid access to credible information to counter negative media claims,
- · assist in addressing current and future technical market challenges,
- anticipate and quickly respond to market access threats.



 \bullet

BENEFIT COST ANALYSIS

This suite of impact assessments under FRDC's 2015–20 RD&E Plan, included 20 randomly selected FRDC investments. The investments were worth a total of approximately \$5.30 million (nominal FRDC investment) and were selected from an overall population of 81 FRDC investments worth an estimated \$17.66 million (nominal FRDC investment), while this analysis was completed in the 2021–22 financial year, it refers to projects with a final deliverable that was submitted in the 2019/20 financial year.

These 20 investments were selected through a stratified, random sampling process such that investments chosen spanned all five FRDC Programs (Environment, Industry, Communities, People and Adoption), represented approximately 30.0 per cent of the total FRDC RD&E investment in the overall population (in nominal terms) and included a selection of small, medium, and large FRDC investments.

It should be noted that while the majority of investments evaluated demonstrated a positive return on investment, this was not the case 100 per cent of the time. Where investments did not demonstrate a positive return among this evaluated cohort, it was due to one of two reasons:

- The investment was towards development of a new methodology (objective of gaining efficiency), but was not successful.
- The objectives of the project were towards non-market impacts, and market impacts could not be calculated due to inherent uncertainties in the assumptions.

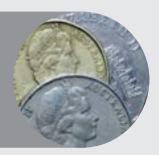
This small proportion of FRDC's investments that resulted in an unsuccessful R&D benefit cost analysis (BCA) demonstrates that FRDC has an appropriate appetite for risk and innovation. Should 100 per cent of projects produce successful R&D, it could reasonably be assumed that FRDC was prioritising cost risk at the expense of innovation. Innovation is acknowledged to be critical in an operating environment where accelerating change is the only constant.

TABLE 10: BENEFIT COST ANALYSIS OF SELECTED FRDC PROJECTS

Monetary value is reported in millions of Australian dollars. Total investment includes FRDC, partners and any other contributions. Modified internal rate of return (IRR) is calculated over 30 years, using a 5 per cent discount rate and 5 per cent finance rate.

N/C: Not calculated

Project	Total investment	Total net benefits	Benefit cost ratio	Internal rate of return (IRR)	Modified IRR
	\$m	\$m		%	%
2009-324: People Development Program: Nuffield scholarship for an aquaculture and/or fish producer	0.76	1.14	1.5:1	8.3	6.2
2015-018: Do commercial fishery data reflect stock status in South Australia's Southern Garfish fisheries?	1.50	N/C	N/C	N/C	N/C
2017-145: Pilot. Development of seafood nutritional panels	0.35	N/C	N/C	N/C	N/C
2016-259: Australian Prawn Farmers Association Strategic and R&D Plan 2020–25	0.06	0.30	5.2:1	22.7	11.9



		-			NA 1:6: 1
Project	Total investment	Total net benefits	Benefit cost ratio	Internal rate of return (IRR)	Modified IRR
	\$m	\$m	•	%	%
2014-405: Oysters Australia IPA: Australian edible oyster RD&E investment via Oysters Australia Strategic Plan 2014–2019	0.51	0.92	1.8:1	Not calculable (no solution)	14.5
2011-521: Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) Outlook Conference	0.09	N/C	N/C	N/C	N/C
2016-044: Next-generation close-kin mark recapture: Using single nucleotide polymorphisms (SNPs) to identify half-sibling pairs in Southern Bluefin Tuna and estimate abundance,				16.0	
mortality and selectivity 2016-118: Using scat DNA to inform sustainable fisheries management and ecological risk assessments:	0.71	2.67	3.7:1	16.0	10.5
A Shy Albatross case study 2014-022: Developing a rapid molecular identification technique to improve egg production-based fish biomass assessments	0.53	1.24 N/C	2.32:1 N/C	13.9 N/C	8.9 N/C
2017-057: Stock predictions and spatial population indicators for Australia's east coast saucer scallop fishery	0.61	0.96	1.6:1	7.7	6.7
2016-235: Improving post-harvest survival of live held Southern Rock Lobster	1.51	8.45	5.6:1	49.6	14.6
2017-109: Development of fish health indicators for the Gladstone Harbour report card	0.27	0.75	2.76:1	25.3	9.0
2018-207: Bursaries for emerging leaders in the Southern Rock Lobster industry to attend the 2019					
Trans-Tasman Lobster Congress 2016-045: Development of pilchard orthomyxo virus vaccine for salmonids	0.03 4.24	25.03	2.18:1	12.8	8.1
2016-417: National People Development: Membership of Primary Industries Education Foundation Australia's to support and encourage the teaching and learning in Australian schools of information related to the				.3.0	2
Australian fishing industry	3.61	6.31	1.75:1	19.8	7.4



CORPORATE OPERATIONS

Trade

FRDC continued to provide updates and advice to stakeholders regarding Australian seafood trade and market access via the FRDC website including the Australian Government's Agricultural Trade and Market Access Co-operation Program. For further information visit the FRDC website https://www.frdc.com.au/australian-seafood-trade-and-market-access

Trade statistics

International trade and export are valuable activities for many in the Australian seafood industry. Trade disruptions continued to have an impact on the export of commodities resulting in changes in the makeup of the top export commodities. This financial year, export of salmon overtook rock lobster as the most valuable seafood export commodity. 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 https://www.frdc.com.au/seafood-production-and-trade-databases

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 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 (2021-018: SafeFish 2021 to 2025) continued to provide technical assistance to address food safety, and trade and market access issues affecting Australian seafood. FRDC invested in the Australian Food and Wine Collaboration Group. The collaboration comprises Horticulture Innovation Australia Ltd, Meat & Livestock Australia, Wine Australia, Seafood Industry Australia and Dairy Australia. This has funding from the Commonwealth Agricultural Trade and Market Access Cooperation Program to deliver a collaborative market expansion initiative.

Free trade agreements

The seafood industry continued to engage in Australia's negotiations with other countries regarding free trade agreements (FTAs), including the recent FTA with the United Kingdom. FRDC assisted through the coordination of input from fishing and aquaculture industry members through projects:

- 2019-195 Seafood Industry Engagement in the Australia–United Kingdom FTA.
- 2020-108 Seafood Market Access and Trade: Part 1. Australia—European Union FTA negotiations (non-tariff barriers). Part 2. Australia—India FTA negotiations. Part 3. Reports—India/European Union/Gulf Cooperation Council identifying opportunities and impediments for Australian seafood exporters

Standards

Standards organisation

Standards Australia is the nation's peak non-government, not-for-profit standards organisation specialising in the development and adoption of internationally aligned standards in Australia.

FRDC is accredited to develop Australian Standards for Australian fishing and aquaculture industries within the scope, "To develop Australian Standards in the fields of terminology, sustainability, and operational practices in the fishing and aquaculture industry."

During 2021–22 FRDC demonstrated through the maintenance and ongoing development of two standards, namely the Australian Fish Names Standard AS 5300 and the Aquatic Plant Names Standard AS5301, that it has the skills, credibility, industry experience and policies and procedures to develop Australian Standards.

FRDC worked with industry partners throughout the year to look at several 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 Australian Fish Names Standard AS 5300 prescribes a standard fish name for each species of fish produced or traded in Australia, including imported product. Developed by the Australian Fish Names Committee, this standard was first approved in 2007 to ensure the correct names are used for species of fish throughout the seafood supply chain.

FRDC maintains an online searchable fish names database which includes all species listed in the Australian Fish Names Standard and comprises nearly 5000 Australian and imported species (www.fishnames.com.au).

The Fish Names Committee held meetings on 7 September 2021 and 1 June 2022, with an additional out-of-session meeting on 19 July 2021 and 9 November 2021.

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.

FISH NAMES COMMITTEE MEMBERSHIP

Independent Chair	Gus Dannoun
Deputy Chair and expert member (fish taxonomy)	Gordon Yearsley
Expert member (hospitality)	Glenn Austin
Expert member (seafood imports)	Mark Boulter
Recreational fishing appointee	Russell Conway
Expert member (major supermarkets)	Hamish Allen
Fisheries agencies appointee	Dr Sonia Talman
Independent fish retailers appointee	Michael Kitchener
Seafood Industry Australia seafood industry appointee	Renee Pearce
Department of Agriculture, Fisheries and Forestry appointee	Lisa McKenzie
Expert member (seafood processors)	Toby Abbott
Expert member (seafood marketing)	Kate Birch
Invertebrate taxonomist and Codes for Australian Aquatic Biota (CAAB) expert	Dr Shane Ahyong

OBSERVERS AND NON-VOTING MEMBERS

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

PROJECT MANAGER AND ADMINISTRATION

	•
Project Manager	Meaghan Dodd

Australian Standard for Aquatic Plant Names AS 5301

The Australian Standard for Aquatic Plant Names AS 5301 prescribes a standard aquatic plant name for each species of aquatic plant (as per the definition in the standard) produced or traded in Australia, including imported product. Developed by the Aquatic Plant Names Committee, this standard was first approved in November 2020 to ensure the correct names are used for species of aquatic plants, throughout the supply chain. Plants from marine and freshwater environments are covered by this standard, irrespective of the country of origin.

FRDC maintains an online searchable aquatic plant names database which includes all species listed in the Australian Standard for Aquatic Plant Names and comprises approximately 50 Australian and imported species (www.aquaticplantnames.com.au).

The Aquatic Plant Names Committee held meetings on 8 September 2021 and 31 May 2022, with an additional out-of-session meeting on 17 November 2021.

AQUATIC PLANT NAMES COMMITTEE MEMBERSHIP

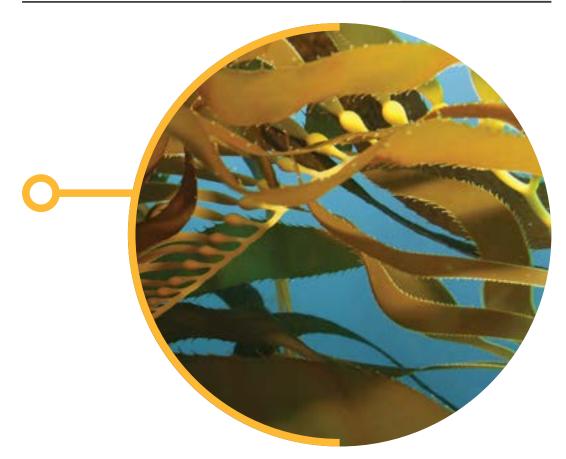
Independent Chair	Gus Yearsley
Deputy Chair and expert member (academia)	Dr John M. Huisman
Expert member (hospitality)	Cassandra Austin
Expert member (academia)	Dr Alecia Bellgrove
Expert member (industry)	Dr Pia Winberg
Expert member (industry)	James Ashmore
Expert member (industry)	Rus Glover
Expert member (CAAB)	Dr Shane Ahyong

OBSERVERS AND NON-VOTING MEMBERS

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

PROJECT MANAGER AND ADMINISTRATION

Project Manager	Meaghan Dodd
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Information and communications technology

Shifts in the geopolitical environment and some high-profile information technology vulnerabilities have meant that FRDC, like many other Australian organisations, needs to remain alert and prepared, to increase its resilience posture and to monitor for threats.

In order for FRDC to improve its cyber security posture, it deployed sophisticated tools and used objective data to guide targeted management of risk. Recognising these risks the FRDC Board initiated a number of in-depth investigations into FRDC's cyber security to ensure controls were in place to mitigate those risks.

Stakeholder engagement

FRDC has established a comprehensive stakeholder engagement capability which includes a team of communications specialists and regional extension officers. We prioritise engagement with people in the seafood sector—from water to plate, so that they have the information they need to support sustainable, profitable and resilient fish stocks, businesses and communities.

Throughout 2021–22 we collaborated with our representative organisations to ensure we understood their needs and demonstrated how we added value. We also worked with fisheries and natural resource managers to make sure they had accurate and timely scientific information on which to base their decisions.

Our Extension Officer Network was established in 2021–22 to engage with people in all aspects of fishing and aquaculture, to help connect them with the research outcomes and knowledge they are seeking, support them to adopt research, and to gather intelligence on other data/information they may require.

During 2021–22 the communications team adopted a more, nimble approach focused on the use of digital platforms to share information. Using analytics embedded in these platforms helps FRDC to review the effectiveness of communications so that over time, messages and communications 'vehicles' can be adapted to suit a wide variety of audiences. As such, *FISH* magazine, a long-standing quarterly publication from FRDC, ceased production at the end of June 2022. One of the primary communications vehicles that has replaced the magazine is FRDC News, an electronic direct mail (EDM), distributed monthly and containing articles on our research projects, information about upcoming industry events, and updates on our face-to-face engagement activities throughout the month. This EDM provides scope to add videos, graphics and animations to help bring our science to life in a timelier manner than a printed publication.

In addition, FRDC electronically distributed a quarterly research and innovation briefing to more than 10,000 researchers and fishing and aquaculture stakeholders who seek information on our research priorities and up-coming research investment opportunities.

Depending on the nature of the information to be shared FRDC also issued media releases and posts on social media platforms, to communicate time-sensitive news from FRDC. These releases and updates are shared with relevant fishing and aquaculture organisations/groups, for use in their member communications mediums/newsletters, to broaden the distribution of FRDC messages.

FRDC website

FRDC's new website went live in August 2021. The site uses extensive tagging to curate content and improve search functionality. The home page and a new knowledge hub highlight science communications material from FRDC's publications and researcher projects. The FRDC website (frdc.com.au) is accessible to all and is the primary platform for all information about our projects, priorities, investments, generated knowledge, and performance. It has continued to evolve and improve throughout 2021–22 as feedback from users is adopted.



Events

Salmon open house

During 2021–22, FRDC planned more face-to-face interactions, including 'open house' events to bring science to the community. The first was a joint initiative between FRDC, CSIRO and the University of Tasmania's Institute for Marine and Antarctic Studies (IMAS). Working in partnership, the event was held at the Hobart Function and Conference Centre on Elizabeth Street Pier. The purpose was to communicate the science around salmon aquaculture directly to the public. Researchers from IMAS and CSIRO and FRDC staff were available to speak to visitors. Exit surveys indicated that attendees were satisfied with the day and their favourite aspects included having the opportunity to talk directly with the scientists, and hearing about and viewing the marine life and water samples collected during monitoring research dives around the salmon farms. FRDC will continue to look for more opportunities to present research outcomes to sector stakeholders and/or the general public, via this type of 'open day' and in conjunction with the FRDC extension officer network.

The 8th World Fisheries Congress

The 8th World Fisheries Congress (WFC2021) was held in Adelaide, in September 2021. FRDC was one of the supporting partners with the South Australian Department of Primary Industries and Regions, including the South Australian Research and Development Institute, the Adelaide Convention Bureau and the Adelaide Convention Centre, delivering the event. The Australian Society for Fish Biology and industry and government agencies from other jurisdictions in Australia and New Zealand also supported the event.

The WFC2021 was delivered as a fully virtual event allowing the international fisheries community to come together and exchange ideas at a time when travel was restricted due to COVID-19. The Congress covered topics such as, sustainable development of the world's oceans, lakes, estuaries and rivers. Sessions and presentations were recorded and made available on the WFC2021 virtual portal for six months post-congress while the plenary presentations and presentations of student award winners, were made publicly available on the WFC2021 website.

In total, the Congress delivered over 800 presentations, covering a broad range of topics critical to the future of fisheries, and attracted 1166 delegates from 60 countries.

Collaboration

International collaboration

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.

United Nations Oceans Decade

FRDC supports the United Nations Ocean Decade, with its mission to use transformative ocean science solutions for sustainable development, connecting people and oceans. FRDC has nominated actions we will undertake with the aim of achieving the Ocean Decade vision of 'the science we need for the ocean we want' these are:

- 1. Further expand sustainability reporting for fishing and aquaculture.
- 2. Help improve climate resilience and performance across fishing and aquaculture.
- 3. Accelerate progress towards zero waste for fishing and aquaculture.
- 4. Continued development of people across fishing and aquaculture to lead and thrive during change.

Global Sustainable Seafood Initiative

Consumers are increasingly demanding proof of seafood sustainability, and are turning to seafood certifications, rating programs and indices to inform purchases. Globally, there is a growing number of initiatives to guide consumers, but they do not all measure and report on the same parameters. To help users evaluate the different programs, the Global Sustainable Seafood Initiative (GSSI) has a global benchmark tool that assesses the assessors. GSSI is a public–private partnership focused on seafood sustainability with more than 90 stakeholders, industry-wide. FRDC is a member of GSSI which aligns global efforts and resources to address seafood sustainability challenges.

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International Coalition of Fisheries Associations

FRDC is a partner in the International Coalition of Fisheries Associations (ICFA), which is a coalition of national fish and seafood industry trade associations from the world's major fishing nations. ICFA members represent countries harvesting more than 85 per cent of the globe's fish. ICFA members participate in various United Nations meetings at which fisheries issues are debated, ensuring the seafood industry's voice is heard. FRDC staff meet with other ICFA members to discuss strategic issues that include the global need for: spatial management measures that deliver conservation and sustainable use outcomes; sustaining fish supplies and feeding the world through aquaculture intensification; transforming fisheries through better management; and improving the efficiency, viability and inclusiveness of fish value chains.

National collaboration

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 June 2022, FRDC presented results of the Status of Australian Fish Stocks and rock lobster surveys and contributed to key discussions on the National Fisheries Plan, National Carp Control Plan, and the National Fisheries Compliance Strategy.

Marine Bioproducts Cooperative Research Centre

The MB-CRC received \$59 million in launch funding from the Australian Government in 2021. When this funding is combined with contributions from industry partners, the MB-CRC is a \$270 million initiative. It has about 70 partners who represent a broad cross-section of industry, including some of Australia's major agribusinesses, small and medium enterprises and two global chemical industry giants, along with some of the country's leading scientists and researchers.

The FRDC is among the latest organisations to sign on as a partner, bringing three seaweed-related research projects it has underway into the MB-CRC program. Two projects are investigating the use of seaweeds in water treatment processes, with the third project investigating year-round seaweed propagation. The move will consolidate and coordinate Australian seaweed-related research under the MB-CRC to make the best use of available resources and knowledge sharing.

National Fisheries Plan—a blueprint for Australian fishing and aquaculture growth

FRDC supported the development of the National Fisheries Plan released in April 2022 by the Fisheries Branch of former Department of Agriculture, Water and the Environment. The National Fisheries Plan provides a shared vision to grow Australia's fishing and seafood sectors in a sustainable way. This will be achieved by supporting and empowering all sectors of the fishing, aquaculture and seafood community, including commercial, Indigenous and recreational fishing, aquaculture and post-harvest. The broader fishing, aquaculture and seafood community also extends to those involved in fisheries research and members of the general public who consume seafood or otherwise have an interest in fisheries.

National Environmental Science Research Program (marine biodiversity)

Through 2021, FRDC established a close working relationship with the National Environmental Science Research Program (NESP) which is the major funder of research and development related to the marine environment. FRDC and NESP teams met every six weeks to assess investment portfolios and activities to ensure collaboration and joint outcomes where appropriate.



National Seafood Industry Safety Initiative

The National Seafood Industry Safety Initiative 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 a reduction in workplace safety incidences.

Several projects underpin and help deliver the initiative. Key supporting activities include: SeSAFE which aims to provide a platform of safety education material; Fish Safe Australia which is a one stop shop for the fishing industry to access health and safety resources; Seafood Industry Australia's 'Our Pledge', that commits to "value our people, look after them and keep them safe"; and a partnership with Food Innovation Australia Ltd to deliver an innovative pilot program that uses 'SenseMaker' software to collect stories that capture emotions and experiences and determine how people make decisions that are used to guide activities to improve workspace safety.

National Marine Science Committee

The National Marine Science Committee released the National Marine Science Plan 2015–2025: The Midway Point in November 2021. This report reviews the National Marine Science Plan 2015–2025 and calls for the marine science community, industry and government to drive the blue economy's development. FRDC is represented on this committee by Managing Director, Dr Patrick Hone who will chair the National Marine Science Committee for a 12-month period commencing in July 2022.

RDC collaboration

Agricultural Innovation Australia

All RDCs are founding members of Agricultural Innovation Australia (AIA), which aims to facilitate joint investment and collaboration in agricultural issues of national importance. AIA's inaugural strategic plan was released in May 2022, detailing how it will drive cross-sectoral collaboration and leverage public and private sector investment to target transformational innovation for Australian agriculture, fisheries and forestry.

FRDC are engaged with AIA to ensure fishing and aquaculture interests are represented in their initial climate initiatives to develop: a) seasonal predictive tools (title: Agri-climate outlooks); b) longer-horizon decadal tools (title: Climate atlas); and c) a consistent process for reporting greenhouse gas emissions (title: Know and show your carbon footprint).

Leading performance measurement community of practice across RDCs

In 2007 the CRRDC established a program to assess the impact of R&D funded by the RDCs, the purpose of which was 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 over benefits) arising from the portfolio
 of investments in R&D by RDCs,
- inform government and the public about the nature of those non-market (public and spill over) benefits from rural R&D that are conditional on public contributions to the RDCs.

FRDC has been acting as the leader and moderator for a CRRDC Performance Measurement Community of Practice. This group has been meeting throughout the year to exchange ideas and examples of success in telling the story of performance in more meaningful and compelling ways as individual RDCs.

FRDC partners to accelerate commercialisation through grow^{AG}

Opportunities to commercialise FRDC R&D were promoted on the grow^{AG} website maintained by our RDC partner, Agrifutures. FRDC scans its completed projects to identify commercialisation opportunities through the grow^{AG} website. To date FRDC has uploaded 389 projects and five commercial opportunities to the site and published eight news stories about relevant activities and opportunities.

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Mapping Community Trust project—second year results received in August 2021

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. Results to date have shown 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 findings and the upcoming year three results (which were released in August 2022) present opportunities for agri-sectors to make improvements and address issues within their industry.

Australian AgriFood Data Exchange

FRDC was a leading partner in the Australian AgriFood Data Exchange initiative aimed at developing secure and trusted digital infrastructure to transform operations in primary production and food supply chains.

This initiative was developed to create an interconnected data highway for value chains, enabling permitted, secure and timely access to information along every step of production and supply.

Data drives all businesses involved in the agrifood ecosystem. When that data is recorded in disparate systems it makes it difficult to work efficiently with buyers, auditors and regulators.

The data exchange concept was developed to provide real-time sharing of information to trace food products as they travel along the supply chain without having to repeatedly fill in forms or cross check data.

To test the concept an experiment involving FRDC, the Western Rock Lobster fishery in Western Australia, the Western Rock Lobster Council, Western Australia's Department of Primary Industries and Regional Development, Geraldton Fishermen's Cooperative, Indian Ocean Rock Lobster, Telstra and IBM, was undertaken with participants allowing a controlled sharing and exchange of their data, on agreed terms with trusted service providers.

The experiment demonstrated a range of benefits including:

- enhanced traceability to prove the authenticity, safety, quality and sustainability of the seafood involved,
- real-time sharing of information to enable quicker respond to biosecurity threats,
- · improved efficiency and capability to plan ahead,
- opportunities for product differentiation with competitor products.

The outcomes of the experiment were presented in a webinar in March 2022 and continued opportunities for digital transformation are continuing to be explored by FRDC.

Collaborative RDC market expansion initiative

FRDC invested in the Australian Food and Wine Collaboration Group. The group comprises Horticulture Innovation Australia Ltd, Meat & Livestock Australia, Wine Australia, Seafood Industry Australia, and Dairy Australia. It has funding from the Commonwealth Agricultural Trade and Market Access Cooperation Program to deliver a collaborative market expansion initiative.



Regional collaboration

Tasmanian Salmonid Science Alliance

During 2021, FRDC facilitated the development of the Salmonid Science Alliance in response 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. Its objectives 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 encourage sustainable management of salmonid aquaculture in Tasmania.

The alliance has been working on the development of a salmonid aquaculture research website to bring all the research together from the three partner agencies, in a format that meets the needs of stakeholders and the community.

Drought Resilience Adoption and Innovation Hubs

The Australian Government's national network of eight Drought Resilience Adoption and Innovation Hubs is aimed at connecting researchers, primary producers and community groups to enhance drought resilience and drive regional innovation practices at regional scales. FRDC's Extension Officer Network has a similar jurisdiction-based, but national footprint, to the Drought Hubs Knowledge Broker Networks. FRDC has engaged with Hub Leaders and DAFF to ensure fishing and aquaculture priorities are included in current and future activities. FRDC Extension Officers and respective Knowledge Broker Networks, are now linked to maintain shared situational awareness and identify opportunity to deliver collaborative impact.

Global Ag-tech Ecosystem

FRDC joined the New South Wales Department of Primary Industries Global Ag-tech Ecosystem initiative (GATE) in 2021 to support efforts to translate and apply fisheries and aquaculture research. FRDC draws value from the GATE through its reach across sectors, commodities and primary industry systems. Fisheries and aquaculture research is increasingly part of other primary industry research and technology sectors (e.g. seaweed supplements for cattle), where the GATE supports and enables engagement and discovery of opportunities.

Bega Circular Valley 2030

FRDC is a partner in the 'Bega Circular Valley 2030', which aims to deliver a transformational high-impact regional development initiative with the pioneering vision to establish Bega Valley Shire as the most circular regional economy in Australia.

It is a holistic program developed by collaborating with local, national and global stakeholders to mobilise innovative circular solutions across the five streams of water, waste, renewable energy, food systems and education. The program builds on, and accelerates, new and existing initiatives by embedding smart circular economy principles and skills to stimulate a marketplace and ecosystem of diverse stakeholders, small-to-medium enterprises, technology innovators, researchers, academics, Indigenous leaders, and social ventures, non-government organisations, government and investors.

The project team includes Bega Valley Circular Economy Co-operative Limited, Bega Cheese Limited, New South Wales Government, Rabobank Australia, KMPG, Charles Sturt University, Bega Valley Innovation Hub, Bega Valley Shire Council, Bega Beef Co-op, Far South Coast Dairy Development Group, Addison Law Firm and FRDC.

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MANAGEMENT AND ACCOUNTABILITY

Management and accountability activities focus on continually improving how 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 governance section starting on page 79.

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, FRDC's expenditure on corporate costs was \$4.9 million or around 13.7 per cent of total FRDC expenditure.

Performance indicators

FRDC met all of the 2021–22 Portfolio Budget Statement's performance measures, see table on page 11.

All financial targets were met this year. For a full explanation of budgetary variances, see pages 102–103 in the financial statements.

Staffing

FRDC is governed by a board of directors (see pages 79–84) appointed for their expertise and is led by a Managing Director who manages the day-to-day operations of the organisation.

FRDC's organisational structure chart is available on the FRDC website under the Staff page of About FRDC (frdc.com.au/staff).

In 2021–22, FRDC's average staffing level was 21.4 (two staff are part time) across its operations. FRDC's staff are the most important resource and are key to its ongoing success.

ALL ONGOING EMPLOYEES CURRENT REPORTING PERIOD (2021-22) *

		Male			Female		Total
		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.

		Male			Female		Total
		Part time	Total male	Full time	Part time	Total female	
Australian Capital							
Territory	6	0	6	3	2	5	11
New South Wales	0	0	0	2	0	2	2
South Australia	2	0	2	2	1	3	5
Victoria	0	0	0	1	0	1	1
Total	8	0	8	8	3	11	19

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

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

		Male			Female		Total
		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 PREVIOUS REPORTING PERIOD (2019–20)*

		Male			Female		Total
		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 Queensland, Tasmania, Victoria or Western Australia.



FRDC staff visited the Australian Institure of Aboriginal and Torres Strait Islander Studies in May 2022. The group experienced and interacted with the Jimmy Pike artwork display and toured through the library and digitalisation area. FRDC staff (from left to right): Jennifer Marshall, Matt Barwick, Crispian Ashby, Ryan Mullins, Jamie Allnutt, Josh Fielding and Adrianne Laird.

Equal employment opportunity

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.

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

FRDC's staff members work as a team in which all contribute freely. This process is strongly reinforced by 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

FRDC's employment policies and procedures align with the *Disability Discrimination Act 1992* in the broader context of the National Disability Strategy 2010–2020. 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 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—FRDC aims to make all project reports meet these requirements. Where information is not accessible, FRDC ensures that it is made available in a suitable format.

Behaviour

Corporate governance practices are evolving rapidly, both in Australia and overseas. FRDC is proactive in adopting better practices, including those governing ethical behaviour, into its own processes. 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. FRDC scored an overall maturity score of 4.47 out of 5, an increase from the previous survey. This is 1.06 above the Australian Government average of 3.4.

	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

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Risk management

There was no incidence of fraud detected at 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 on 25 March 2022, which was used to update FRDC's risk framework. Additionally, the Board reviews the highest-ranked strategic risks at every meeting.

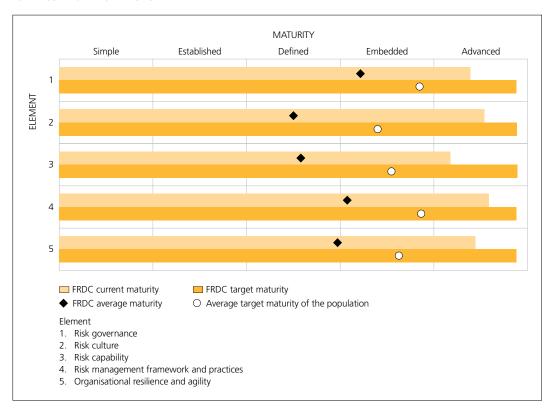
COVID-19 risks

Following the outbreak of COVID-19, 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 FRDC itself).

Comcover Risk Management and Benchmarking Survey

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 FRDC engages companies, research institutions and government agencies to undertake R&D activities. The process for applying for funding is outlined on 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 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 at 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. FRDC currently has 12 Industry Partnership Agreements (IPAs).

These partnerships offer both parties a number of advantages. For industry, they provide more involvement in determining and undertaking R&D. For 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 vii).

Consultancy services and selection of suppliers

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

When selecting suppliers of goods and services, 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.

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

	-	2021–22
Consultancy	Description	\$ (GST inclusive)
Rimfire	Provision of contract staff	386,315
IT Payroll Solutions	Provision of contract staff	292,623
Coretext	Production of FISH magazine	240,667
Versecorp Pty Ltd	Digital communications	95,806
Icon Agency	Web development agency	88,966
Yardstick Advisory	Internal auditors	41,481
Ashurst Lawyers	Legal advisory services	37,595
White Fox	Graphic design	31,266
ISENTIA	Media monitoring	28,380
Millstream Productions	Video production	10,831
CommsNET	IT services provider	24,981

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

		2021–22
Consultancy	Description	\$ (GST inclusive)
Lee Armson	Stakeholder data analytics and e-mail services	31,156.43

Cost recovery policy

	2021–22
	\$ (GST inclusive)
Department of Agriculture, Fisheries and Forestry	
Cost recovery expenses to the Commonwealth for levy collection charges	16,671

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Legal Services Directions Expenditure Report

Following the end of the 2021–22 reporting period, FRDC submitted a Legal Services Directions Expenditure report on 12 August 2022.

Ministerial directions

During the year 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 FRDC.

Government policy

FRDC has adopted as best practice the Australian Government policy requirements relevant to FRDC:

- 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 133.

Protective Security Policy Framework

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

Quality Management System

The FRDC's Quality Management System consisting of policies and procedures is continually monitored, reviewed and managed to ensure there are efficient and effective processes in place to perform operations of high quality, both internally and to our stakeholders.

Judicial reviews and administrative tribunals

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

Freedom of information

During 2021–22, FRDC received no requests pursuant to the *Freedom of Information Act 1982* (FOI Act). 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—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 C on page 127 or FRDC website to view the FOI Disclosure Log https://www.frdc.com.au/About/Freedom-of-information/Disclosure-Log.

Work health and safety

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. FRDC's ultimate goal is that its workplace is free of injury, illness and disease. 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.

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. 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 2021–22.
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. Health and wellbeing committee established to monitor changes and implement safety measures. 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. Mental health training. Bi-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 FRDC. No directions or notices were given to FRDC.

Notifiable incidents		2018–19			2021–22
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 FRDC. The insurance premiums are levied each year based on the level of salaries and wages costs and experience in claims made by employees.

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GOVERNANCE

Board and organisation

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.

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 FRDC's high level of commitment to these principles, a full list of FRDC policies and copies of the financial statements are available from 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 seven 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 beginning of their 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 has a fundamental role in guiding the organisation and providing FRDC management with strong leadership. It oversees corporate governance, ensuring FRDC has a good framework of policies and procedures and playing a strong role in the approval and oversight of all financial matters.

During the year the Board approved FRDC's AOP and funding commitments for existing contracted projects, and new research, delegating FRDC management to oversee that these investments are 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 deemed as high risk. The objective is to provide a more flexible and nimble approach to investment, whereby 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.

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Present 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. Before 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 1 September 2021

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 on 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 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.

The Board (from left to right): Colin Buxton (Deputy Chair), Chris Calogeras, Alex Ogg, Boris Musa, John Williams (Chair), Suzi Hullick, Saranne Cooke, Lyndal Thorburn, Patrick Hone (Managing Director).



Dr Chris Calogeras: Director

Appointed director from 1 September 2021

Chris Calogeras has over 35 years' expertise working with the fishing and seafood industry and associated stakeholders. These roles included senior resource management positions within government, operations manager at an award-winning export focused seafood company, and for the last 20-plus years, director of C-AID Consultants, an independent consultancy. He has formal training in resource management, business and seafood processing.

In government, Chris managed multi-disciplinary aquatic resource programs covering teams responsible for wild-harvest resource management, marine parks and environment, data management, education, legislation, recreational research, as well as coordinating a large range of external projects. Chris represented the Northern Territory and chaired a number of committees and boards, on behalf of government.

From 2001 onwards, Chris has been involved in a wide range of consultancies and projects of varying size and complexity. He has worked with all sectors of the fishing and seafood industry, including Indigenous, wild harvest, aquaculture, post-harvest and recreational sectors, government agencies, non-government organisations and researchers, to build capacity and develop innovative sustainable management and research solutions and outcomes across diverse groups.

Chris specialises in inshore wild-harvest, and tropical aquaculture species and has extensive experience working with First Nations people. He also chairs a number of groups and acts as a representative on committees and boards on behalf of industry groups and clients and has been involved in over 50 national and international projects.

Chris practices a participatory approach to ensure outputs and outcomes provide real solutions to complex and often competing needs and are in a form that can be readily used. He also seeks to build capacity and leadership in all of his roles.

Dr Saranne Cooke: Director

Appointed Director from 10 October 2018, reappointed 1 September 2021

Saranne Cooke is a professional director and chair with experience on a variety of boards across the research and education, health, sport, financial and not-for-profit sectors. She is the Deputy Chancellor of Charles Sturt University, Chair of the Australasian College of Sport and Exercise Physicians, Deputy Chair of Racing NSW, Vice President of the Royal Flying Doctor Service (South Eastern), a director of Australian Meat Processing Corporation, HESTA Superannuation, Western NSW Primary Health Network, and Aged and Community Care Providers Association. Saranne is also the Independent Chair of the Sugar Research Australia Director Selection Committee for 2022. As a long-term resident of regional Australia, she has a genuine understanding of regional and rural issues and communities.

Saranne previously held a number of executive 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.

Dr Patrick Hone: Managing Director

Appointed Managing Director from 21 April 2005

Patrick Hone is Managing Director of 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 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.

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Suzanne (Suzi) Hullick

Appointed director from 1 September 2021

Suzi Hullick is a banking executive with over 20 years of leadership and management experience in retail and commercial sectors within the financial services industry. For more than a decade Suzi has specialised in Indigenous banking. Appointed in June 2022 as the Westpac Group Head of Diversity Equity and Inclusion which provides strategic planning and policy delivery and implementation of the overall people strategy specialising in gender equity, accessibility and inclusion Suzi was recognised as the 2013 overall women of influence (inaugural winner) for Westpac and a Bicentennial Service Honour recipient in 2017. She is a graduate of the Australian Institute of Company Directors and Women in Leadership at the Australian Graduate School of Management and is currently studying an MBA in social impact at the University of New South Wales for completion in May 2023.

Boris Musa

Appointed director from 1 September 2021

Boris Musa is the Managing Director and Chief Executive Officer of Mainstream Aguaculture Group, a vertically integrated producer and supplier of Barramundi. Mainstream is one of the largest suppliers of Barramundi table fish products in Australia under the Infinity Blue Barramundi brands and is the global market leader in the supply of juvenile fish (seed stock) to the Barramundi aquaculture industry, exporting to 27 countries across five continents. Mainstream operates five farms and three hatcheries in Australia, including the world's largest aquaculture production facility of its type, as well as the world's largest Barramundi hatchery. Mainstream also operates a Barramundi farm in the United States of America servicing the local market, located in Arizona. Since 2012 and under his stewardship the company's value has increased by a multiple of 50 times on a commensurate increase in revenue.

Boris' background is in financial services. Most recently, he spent five years at Macquarie Group, the last two as a director. Boris is a non-executive director of the Wyndham City Refuse Disposal Business and the Australian Barramundi Farmers Association. He holds a Bachelor of Commerce from Deakin University, a Diploma in Natural Resource Management, a Masters of Applied Finance and is a Deans Scholar in Finance.

Alex Ogg

Appointed director from 1 September 2021

Alex Ogg directs the Ocean Energy Program for National Energy Resources Australia and is principal project director for the Australian Ocean Energy Group.

With an extensive professional background in fisheries and aquaculture, Alex pioneered open ocean farming systems in Western Australia and was rewarded with exponential increases in pearl product value as Managing Director of Autore Pearling. Alex served as vice Chair of the Pearl Producer's Association for a decade and was a ministerial appointee to the Pearling Industry Advisory Committee. Before retiring as Chief Operating Officer and subsequently Chief Executive Officer of the Western Australian Fishing Industry Council in 2020, Alex worked closely with FRDC, serving as Chair of the Western Australian Fisheries Research Advisory Board and Deputy Chair of the Western Australian Research Advisory Committee. Alex helped to form the national peak body, Seafood Industry Australia, acting as Deputy Chair of the implementation committee and is a charter member of that body.

Alex holds an MBA from Melbourne University, is a graduate of the Australian Institute of Company Directors and is a fellow of the Australian Rural Leadership Foundation. He is currently a non-executive director of Regional Development Australia Great Southern and a director of the Australian Microgrid Centre of Excellence, engaged in developing marine renewable energy distribution systems.

Dr Lyndal Thorburn

Appointed director from 1 September 2021

Lyndal Thorburn is a non-executive director with current roles on Charles Sturt University Council and the Regional Development Australia (ACT) Board, in addition to FRDC. With over 30 years' board experience, she brings skills in business and risk management, science/technology commercialisation and industry development, innovation and entrepreneurship, stakeholder engagement, finance and public administration.

Prior to her appointment to FRDC, Lyndal worked as an evaluation specialist for Asia Pacific Economic Cooperation, spent 17 years in government agencies and government business enterprises, and had many years mentoring technology-based startups in market analysis, strategy and capital raising. She trained as a biologist and completed a PhD exploring regional, national and global innovation networks of Australian biotechnology firms

Lyndal is a fellow of the Australian Institute of Company Directors and is a member of the Institute of Public Accountants. A business owner, she is also a past winner of the ACT Telstra Businesswomen's Awards Lyndal was born in Sydney but has lived for the last 40 years in regional New South Wales and has worked in Asia, Europe and the Americas.

Retired directors' biographies

Dr Kathryn (Kate) Brooks: Director

Appointed director from 10 October 2018, retired 31 August 2021

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.



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Katina (Katie) Hodson-Thomas: Director

Appointed director from 10 October 2018, retired 31 August 2021

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.

Mark King: Director

Appointed director from 10 October 2018, retired 31 August 2021

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.

John Lloyd: Director

Appointed director from 10 October 2018, retired 31 August 2021

John Lloyd is the former Chief Executive Officer 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 New South Wales as well as an MBA from Macquarie University.

Dr Lesley MacLeod: Director

Appointed director from 1 September 2015, retired 31 August 2021

Lesley MacLeod is the former Chief Executive Officer 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.

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 11: ATTENDANCE BY DIRECTORS AT BOARD MEETINGS

V/C: Meetings that were conducted as videoconferences.

n/a: Signifies the director or FRDC representative was not eligible to attend the meeting (either they had not yet been appointed or their tenure had ended).

Date	18/08/ 2021	09/09/ 2021	25/11/ 2021	16/02/ 2022	21/04/	9/06/ 2022
	(VC)	(VC)	(VC)	(VC)	2022	2022
Current directors						
Mr John Williams (Chair)	Yes	Yes	Yes	Yes	Yes	Yes
Professor Colin Buxton (Deputy Chair)	Yes	Yes	Yes	Yes	Yes	Yes
Dr Patrick Hone (Managing Director)	Yes	Yes	Yes	Yes	Yes	Yes
Dr Chris Calogeras	n/a	Yes	Yes	Yes	Yes	Yes
Dr Saranne Cooke	Yes	Yes	Yes	Yes	Yes	Yes
Suzanne (Suzi) Hullick	n/a	Yes	Yes	Yes	Yes	Yes
Boris Musa	n/a	Yes	Yes	Yes	Yes	Yes
Alex Ogg	n/a	Yes	Yes	Yes	Yes	Yes
Dr Lyndal Thorburn	n/a	Yes	Yes	Yes	Yes	Yes
Retired directors						
Dr Kathryn (Kate) Brooks	Yes	n/a	n/a	n/a	n/a	n/a
Katina (Katie) Hodson-Thomas	Yes	n/a	n/a	n/a	n/a	n/a
Mark King	Yes	n/a	n/a	n/a	n/a	n/a
John Lloyd	Yes	n/a	n/a	n/a	n/a	n/a
Dr Lesley MacLeod	Yes	n/a	n/a	n/a	n/a	n/a
Cheryl Cole (General Manager Finance and Business)	Yes	Yes	Yes	Yes	Yes	Yes

Board committees

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

During the year Board updated the Finance and Audit Committee Charter (Policy) and as a result the Committee name was updated to the Finance and Audit Committee. The Board agreed to increase the Risk Profile for Risk Management as part of the whole of Board role. The Board Finance and Audit Committee Charter (Policy) is available on FRDC website at https://www.frdc.com.au/en/about/corporate-documents/corporate-policies.

Table 12 gives information about the Finance and Audit Committee members, their qualifications, knowledge, skills or experience, their attendance during 2021–22 and their remuneration paid as a member of the committee.

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TABLE 12: ATTENDANCE BY DIRECTORS AND OBSERVERS AT FINANCE AND AUDIT COMMITTEE MEETINGS

Note: All meetings were conducted as videoconferences.

Member	Qualifications, knowledge, skills or experience (include formal and informal as relevant)	Number of Finance and Audit Committee meetings attended	Total annual remuneration paid as a member of the Finance and Audit Committee	
			\$ (GST inclusive)	
Current members				
Dr Saranne Cooke				
(Committee Chair)	See biography, page 81.	4 (of 4)	Nil	
Suzanne (Suzi) Hullick	See biography, page 82.	3 (of 3)	Nil	
Boris Musa	See biography, page 82.	3 (of 3)	Nil	
Retired members				
Dr Kathryn (Kate) Brooks	See biography, page 83.	1 (of 1)	Nil	
John Lloyd	See biography, page 84.	1 (of 1)	Nil	
Dr Lesley MacLeod	See biography, page 84.	1 (of 1)	Nil	

Attendance as observers	Number of Finance and Audit Committee meetings attended	
Mr John Williams (Board Chair)	3 (of 4)	
Dr Patrick Hone (Managing Director)	4 (of 4)	
Cheryl Cole (General Manager Finance and Business)	4 (of 4)	

The Board's Remuneration Committee comprises at least two non-executive directors. It has oversight and responsibility for providing assistance and advice to the Board on matters relating to remuneration of the Managing Director and staff and, to discharge the Board's responsibilities relative to succession planning. The Board's Remuneration Committee Policy is available on the FRDC website at https://www.frdc.com.au/en/about/corporate-documents/corporate-policies.

TABLE 13: ATTENDANCE BY DIRECTORS AT REMUNERATION COMMITTEE MEETINGS

Note: All meetings were conducted as videoconferences.

Member	09/09/21	19/04/2022	07/06/2022
Mr John Williams (Chair)	Yes	Yes	Yes
Dr Lyndal Thorburn	Yes	Yes	Yes
Alex Ogg	Yes	Yes	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

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 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

FRDC holds directors' and officers' liability insurance cover through Comcover. During the year, no indemnity-related claims were made. When appropriate, FRDC may take out insurance policies to mitigate insurable risk.

Remuneration policy

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

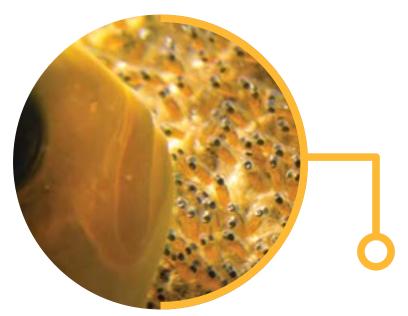
Remuneration of the Managing Director and staff is determined by the FRDC policy set by the Board. The amount of individual remuneration of the Managing Director and staff is based on advice by Mercer Human Resources Consulting Pty Ltd. The amount is also influenced by performance measured against individual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

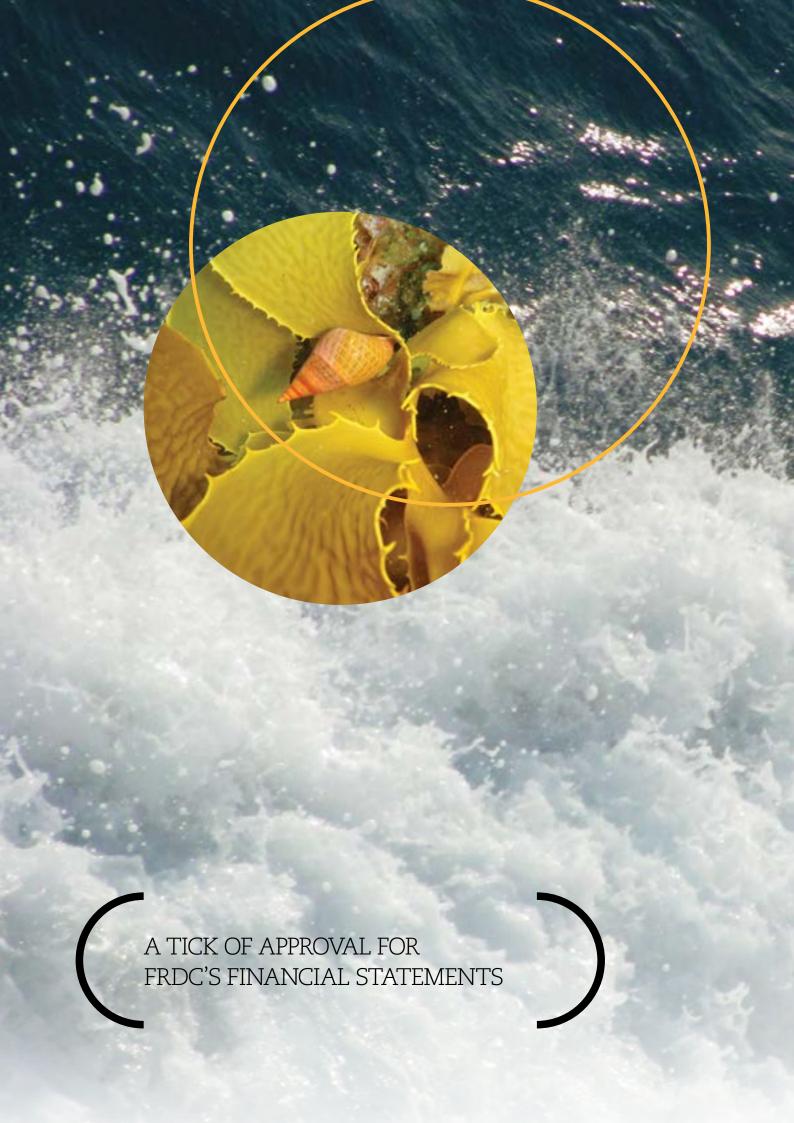
PIRD ACT REQUIREMENTS

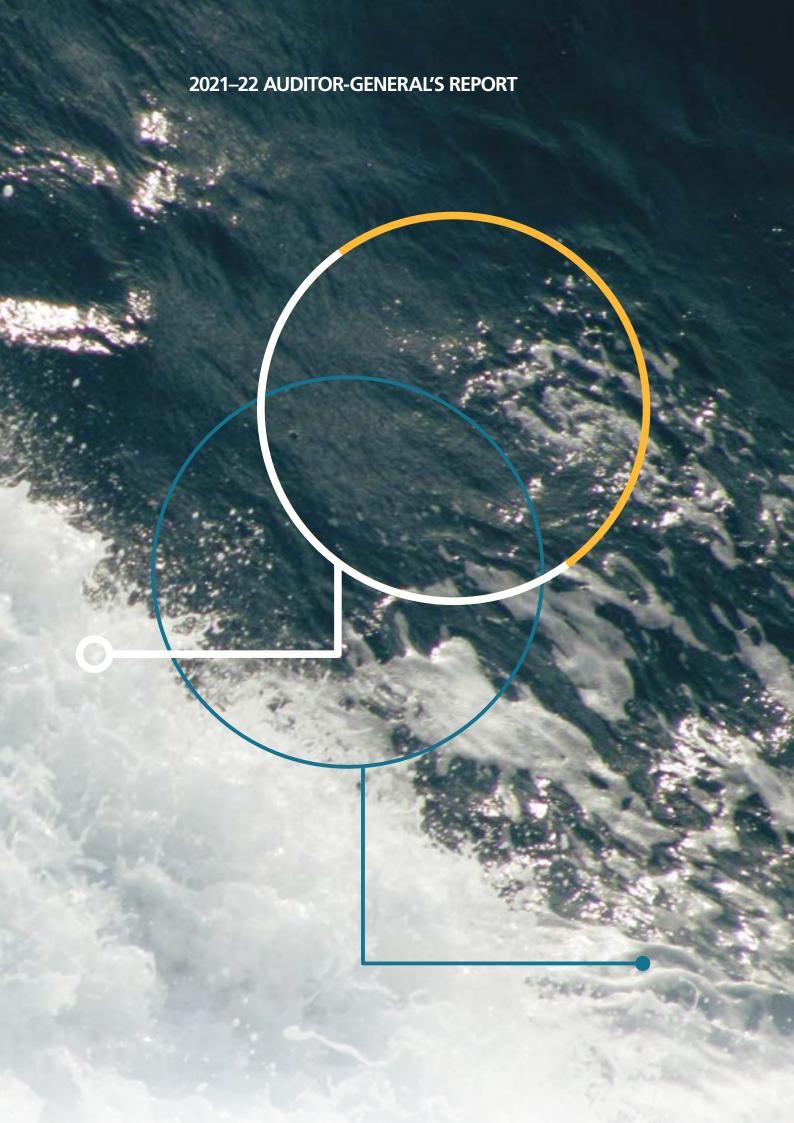
	2021–22
	\$
Remuneration and allowances to non-executive directors	388,342

Liabilities to staff

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.











INDEPENDENT AUDITOR'S REPORT

To the Minister for Agriculture, Fisheries and Forestry

Opinion

In my opinion, the financial statements of the Fisheries Research and Development Corporation ('the Entity') for the year ended 30 June 2022:

- (a) comply with Australian Accounting Standards Simplified Disclosures 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 2022 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 as at 30 June 2022 and for the year then ended:

- Statement by the Accountable Authority (Chair and Chair Finance and Audit 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 – Simplified Disclosures and the rules made under the Act. The Directors are also responsible for such internal control as the Directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud

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.

GPO Box 707, Canberra ACT 2601 38 Sydney Avenue, Forrest ACT 2603 Phone (02) 6203 7300

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

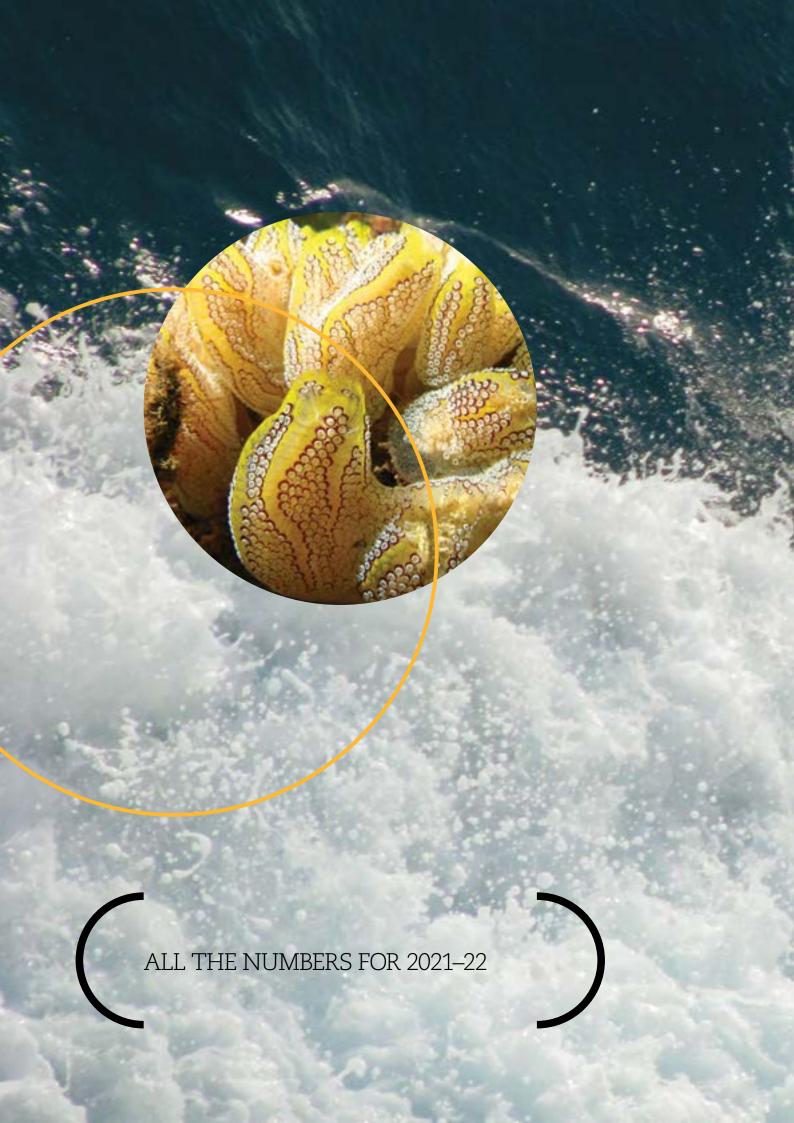
Australian National Audit Office

Fiona Sheppard Acting Executive Director

Delegate of the Auditor-General

Canberra

22 August 2022





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

In our opinion, the attached financial statements for the period ended 30 June 2022 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-2022 Date
SignedDr Saranne Cooke Chair Finance and Audit Committee	18-August-2022 Date
Signed	18-August-2022 Date
Signed	18-August-2022 Date

(●)

Chief Financial Officer

Statement of Comprehensive Income

FOR THE PERIOD ENDED 30 JUNE 2022

		2022	2021	Original PBS budget
	Notes	\$	\$	\$
NET COST OF SERVICES				
Expenses				
Employee benefits	1.1A	3,733,005	3,192,246	3,385,000
Suppliers	1.1B	984,627	1,034,629	1,181,000
Research and development	1.1C	30,706,530	28,944,780	29,665,000
Depreciation and amortisation	2.2A	358,679	341,387	385,000
Finance costs	1.1D	8,041	8,277	6,000
Write-down and impairment of assets	1.1E	51,626	6,820	_
Total expenses		35,842,508	33,528,139	34,622,000
Own-source income				
Own-source revenue				
Revenue from contracts with customers	1.2A	885,777	191,520	_
Interest	1.2B	56,172	93,213	100,000
Contributions	1.2C	11,413,155	9,280,433	9,438,000
Other revenue	1.2D	157,775	150,530	2,000,000
Total own-source revenue		12,512,879	9,715,696	11,538,000
Total own-source income		12,512,879	9,715,696	11,538,000
Net (cost of) services		(23,329,629)	(23,812,443)	(23,084,000)
Revenue from the Australian Government	1.2E	24,037,417	23,210,498	23,135,000
Surplus/(deficit)		707,788	(601,945)	51,000
OTHER COMPREHENSIVE INCOME				
Items not subject to subsequent reclassification to net cost of services				
Changes in asset revaluation reserves	2.2A	28,578	35,214	_
Total comprehensive income/(loss)		736,366	(566,731)	51,000

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

Statement of Financial Position

AS AT 30 JUNE 2022

				Original
		2022	2021	PBS budget
	Notes	\$	\$	\$
ASSETS				
Financial assets				
Cash and cash equivalents	2.1A	29,004,985	25,182,254	22,150,000
Trade and other receivables	2.1B	2,918,699	4,760,593	1,163,000
Total financial assets		31,923,684	29,942,847	23,313,000
Non-financial assets ¹				
Buildings	2.2A	690,541	670,188	615,000
Plant and equipment	2.2A	90,700	121,200	109,000
Intangibles	2.2A	323,878	488,140	722,000
Other non-financial assets	2.2B	20,417	-	15,000
Total non-financial assets		1,125,536	1,279,528	1,461,000
Total assets		33,049,220	31,222,375	24,774,000
LIABILITIES				
Payables				
Suppliers	2.3A	156,995	104,504	200,000
Projects	2.3B	3,611,868	2,954,056	250,000
Other payables	2.3C	68,709	71,152	_
Total payables		3,837,572	3,129,712	450,000
Interest bearing liabilities				
Leases	2.4A	721,955	694,555	772,000
Total interest bearing liabilities		721,955	694,555	772,000
Provisions				
Employee provisions	3.1A	1,174,588	819,369	790,000
Total provisions		1,174,588	819,369	790,000
Total liabilities		5,734,115	4,643,636	2,012,000
Net assets		27,315,105	26,578,739	22,762,000
EQUITY				
Asset revaluation reserve		590,343	561,765	562,000
Retained earnings		26,724,762	26,016,974	22,200,000
Total equity		27,315,105	26,578,739	22,762,000

^{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 2022

	_	2022	2021	Original PBS budget
		\$	\$	\$
RETAINED EARNINGS				
Opening balance				
Balance carried forward from previous period		26,016,974	26,618,919	22,149,000
Opening balance		26,016,974	26,618,919	22,149,000
Comprehensive income				
Surplus/(deficit) for the period		707,788	(601,945)	51,000
Closing balance as at 30 June		26,724,762	26,016,974	22,200,000
ASSET REVALUATION RESERVE				
Opening balance				
Balance carried forward from previous period		561,765	526,551	562,000
Opening balance		561,765	526,551	562,000
Comprehensive income				
Other comprehensive income		28,578	35,214	_
Closing balance as at 30 June		590,343	561,765	562,000
TOTAL EQUITY				
Opening balance				
Balance carried forward from previous period		26,578,739	27,145,470	22,711,000
Adjusted opening balance		26,578,739	27,145,470	22,711,000
Comprehensive income				
Surplus/(deficit) for the period		707,788	(601,945)	51,000
Other comprehensive income		28,578	35,214	-
Total comprehensive income		736,366	(566,731)	51,000
Closing balance as at 30 June 2022		27,315,105	26,578,739	22,762,000

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

Cash Flow Statement

FOR THE PERIOD ENDED 30 JUNE 2022

		2022	2021	Original PBS budget
	Notes	\$	\$	\$
OPERATING ACTIVITIES	Hotes	*	Ψ	4
Cash received				
Receipts from the Australian Government		26,191,415	22,389,086	24,579,000
Contributions		13,475,751	8,794,352	10,281,000
Interest		40,017	93,052	100,000
Net GST received		1,660,118	2,013,746	
Other		472,776	2,143,594	_
Total cash received		41,840,077	35,433,830	34,960,000
Cash used				
Employees		(3,377,786)	(3,061,727)	(3,345,000)
Suppliers		(1,033,007)	(1,213,920)	(481,000)
Research and development		(33,418,594)	(31,506,085)	(28,815,000)
Interest payments on lease liabilities		(8,041)	(8,277)	(6,000)
Other		_	(692,282)	(1,550,000)
Total cash used		(37,837,428)	(36,482,291)	(34,197,000)
Net cash from/(used by) operating activities		4,002,649	(1,048,461)	763,000
INVESTING ACTIVITIES				
Cash used				
Purchase of property, plant and equipment		_	-	(20,000)
Purchase of intangibles		(20,960)	(27,593)	(200,000)
Total cash used		(20,960)	(27,593)	(220,000)
Net cash (used by) investing activities		(20,960)	(27,593)	(220,000)
FINANCING ACTIVITIES				
Cash used				
Principal payments of lease liabilities		(158,958)	(153,040)	(165,000)
Total cash used		(158,958)	(153,040)	(165,000)
Net cash (used by) financing activities		(158,958)	(153,040)	(165,000)
Net increase/(decrease) in cash held		3,822,731	(1,229,094)	378,000
Cash and cash equivalents at the beginning of the reporting period		25,182,254	26,411,348	21,772,000
Cash and cash equivalents at the end of the reporting period	2.1A	29,004,985	25,182,254	22,150,000

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

OVERVIEW

Overview 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 principal place of business is 25 Geils Court Deakin, ACT 2600.

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 required by:

a) 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—including simplified disclosures for Tier 2 Entities under AASB 1060 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 accounting standards

The new standards, revised standards, interpretations and amending standards that were issued prior to the sign-off date and are applicable to the current reporting period, did not have a material effect on the FRDC's financial statements.

Standard/Interpretation	Nature of change in accounting policy, transitional provisions, and adjustment to financial statements.
AASB 1060 General Purpose	AASB 1060 applies to annual reporting periods beginning on or after
Financial Statements—	1 July 2021 and replaces the reduced disclosure requirements (RDR) framework.
Simplified Disclosures for	The application of AASB 1060 involves some reduction in disclosure compared to
For-Profit and Not-for-Profit	the RDR with no impact on the reported financial position, financial performance
Tier 2 Entities	and cash flows of the entity.

Taxation

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

Events after the reporting period

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

Comparative figures have been adjusted so they conform with changes in the presentation of these financial statements at Note 1.1B: Suppliers and Note 1.1C Research and development.

The 30 June 2022 Financial Statements refer to Department of Agriculture, Fisheries and Forestry (the department's name changed as a result of the machinery of government changes effective 1 July 2022, and was previously known as Department of Agriculture, Water and the Environment).



FRDC budgetary explanation of major variances

The following information provides a comparison of the original budget as presented in the 2021–22 Portfolio Budget Statements (PBS) to the 2021–22 final outcome as presented in accordance with Australian Accounting Standards—simplified disclosures for Tier 2 Entities under AASB 1060. The budget is not audited. Explanations of major variances are provided below.

Actual result for 2021–22

Statement of Comprehensive Income

Employee benefits were higher due to the implementation of the new workforce plan and new staff appointments.

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. In 2021–22 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.

Contributions were higher than forecast due to additional contributions received for research projects.

Other revenue originally forecast allowed for additional increased project contributions, which were lower than forecast.

Revenue from the Australian Government was higher than budget due to the 2021–22 Australian Gross Value Production (AGVP) Determination from the Department of Agriculture, Fisheries and Forestry (DAFF), 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 \$1.2 million to include the industry levy contributions for the Australian Fisheries Management Authority R&D levies, and the Australian Prawn Farmers Association prawn levies.
- Revenue from Australian Government has been reduced by \$1.2 million to remove the industry levy contributions for the Australian Fisheries Management Authority R&D levies, and the Australian Prawn Farmers Association prawn levies.
- Other expenses has been reduced by \$850,000 and reclassified to research and development.

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 higher, mainly driven by prior year receivables paid in 2021–22, that related to prior year debtors, the increased AGVP determination, and additional contributions for research projects received.

Trade and other receivables may vary due to the timing of the Department of Agriculture, Fisheries and Forestry AGVP Determination, which can result in increases to aged debtors at financial year end. The increase for 2021–22 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 increased as a result of the new lease term for the Adelaide office, commencing 1 August 2021.

Intangibles varied due to the intangible costs and extent of works were lower than forecast. Additionally, some internally developed software was written down at 30 June, due to the upgrade to a new SharePoint platform.

Project payables were higher than budget and include revenue received for funding agreements for research programs. This funding is initially recognised as a liability until such time the performance obligations are satisfactorily achieved, and the liability reduces over time.

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

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

	2022	2021
	\$	\$
Wages and salaries	2,857,122	2,439,316
Superannuation		
Defined contribution plans	244,585	168,007
Defined benefit plans	323,319	312,536
Leave and other entitlements	307,979	272,387
Total employee benefits	3,733,005	3,192,246

Accounting policy

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

Note 1.1B: Suppliers

	2022	2021
	\$	\$
Goods and services supplied or rendered		
Asset purchases less than \$5,000	70,258	53,053
Audit fees	40,000	36,000
External service providers	117,428	222,364
Insurance	30,220	38,976
Information technology	397,363	410,212
Legal	33,903	26,997
Office supplies	17,032	10,926
Postage and couriers	3,532	1,328
Property	24,581	25,250
Recruitment/director selection costs	25,843	39,116
Telecommunications	32,710	31,329
Training	72,680	27,374
Travel	91,770	78,814
Other	12,718	10,313
Total goods and services supplied or rendered	970,038	1,012,052
Other suppliers		
Workers compensation expenses	9,669	6,907
Short-term leases ¹	4,920	15,670
Total other suppliers	14,589	22,577
Total suppliers	984,627	1,034,629

^{1.} The FRDC has no short-term lease commitments as at 30 June 2022.

Accounting policy

Short-term leases and leases of low-value assets

The FRDC has elected not to recognise right-of-use assets and lease liabilities for short-term leases of assets that have a lease term of 12 months or less and leases of low-value assets (less than \$10,000). The entity recognises the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

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

Note 1.1C: Research and development

	2022	2021
	\$	\$
Projects		
Australian Government entities (related parties)	1,411,875	1,909,634
State and territory governments	5,366,600	7,068,334
Universities and educational bodies	11,400,476	10,921,752
Cooperative research centres	1,264,241	178,200
Research and development corporations	375,000	51,065
Industry (commercial, recreational and Indigenous)	6,118,494	5,967,315
Overseas research entities	_	12,689
Private providers	3,319,945	2,134,423
Stakeholder engagement and R&D activities ¹	1,449,900	701,368
Total research and development	30,706,530	28,944,780

^{1.} Stakeholder engagement and R&D activities include the dissemination of research outputs, extension activities, development and R&D support. Stakeholder engagement was reclassified from other expenses in the comparative year, and is now disclosed in research and development.

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 to the FRDC's satisfaction, an invoice issued consistent with the contractual requirements and the invoice approved by the FRDC 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.

	2022	2021
	\$	\$
Project commitments are payable as follows:		
Within 1 year	39,312,075	34,041,806
More than 1 year	25,342,796	21,829,635
More than 5 years	385,000	_
Total project commitments	65,039,870	55,871,441

Note: Project commitments are GST inclusive.

Note 1.1D: Finance costs

	2022	2021
	\$	\$
Finance leases	8,041	8,277
Total finance costs	8,041	8,277

Note 1.1E: Write down and impairment of assets

	2022	2021
	\$	\$
Write down of intangible assets	51,626	6,820
Total write down and impairment of assets	51,626	6,820

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

Note 1.2A: Revenue from contracts with customers

	2022	2021
	\$	\$
Australian Government entities (related parties)—over time	885,777	191,520
Total revenue from contracts with customers	885,777	191,520

Accounting policy

Revenue from contracts with customers is recognised when control has been transferred to the buyer. The FRDC determines a contract is in scope of AASB 15 when the performance obligations are required by an enforceable contract and the performance obligations within the enforceable contract are sufficiently specific to enable the FRDC to determine when they have been satisfied. The FRDC determines there to be an enforceable contract when the agreement creates enforceable rights and obligations. Performance obligations are sufficiently specific where the promises within the contract are specific to the nature, type, value and quantity of the services to be provided and the period over which the services must be transferred.

The FRDC receives revenue from the Australian Government under which it manages a suite of research activities. These activities are listed at Note 2.3B. 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 liability to recognise the contract liability. Once the performance obligations have been satisfied as per the funding agreement deliverables over time, it is then recognised as revenue.

The transaction price is the total amount of consideration to which the FRDC expects to be entitled in exchange for transferring promised goods or services to a customer. The consideration promised in a contract with a customer may include fixed amounts, variable amounts, or both. All consideration promised in contracts with customers is included in the transaction price.

Receivables for services, which have 30 day terms, are recognised at the nominal amounts due less any impairment allowance account. Collectability of debts is reviewed at the end of the reporting period. Allowances are made when collectability of the debt is no longer probable.

Note 1.2B: Interest

	2022	2021
	\$	\$
Deposits	56,172	93,213
Total interest	56,172	93,213

Note 1.2C: Contributions

	2022	2021
	\$	\$
Fisheries		
Australian Prawn Farmers Association	272,382	292,421
Australian Fisheries Management Authority	1,059,033	937,483
Australian Capital Territory	36,500	_
New South Wales	2,430,596	526,005
Northern Territory	252,937	212,189
Queensland	692,500	730,000
South Australia	1,628,726	1,437,361
Tasmania	3,184,038	2,287,523
Victoria	326,334	317,471
Western Australia	1,530,109	2,539,980
Total contributions	11,413,155	9,280,433

Accounting policy

Contributions are recognised as income when the FRDC recognises an asset in relation to a contribution or a right to receive a contribution, after recognising any other related amounts.

Note 1.2D: Other revenue

	2022	2021
	\$	\$
Project funds received	95,000	47,586
Project refunds of prior years expenditure	59,561	102,944
Other	3,214	_
Total other revenue	157,775	150,530

Note 1.2E: Revenue from the Australian Government

	2022	2021
	\$	\$
Department of Agriculture, Fisheries and Forestry		
Corporate Commonwealth entity payment item of 0.50% of AGVP ¹	16,164,770	15,613,565
Matching of industry contributions ²	7,872,647	7,596,933
Total revenue from the Australian Government	24,037,417	23,210,498

^{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.

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 FRDC) 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.

^{2.} Matching of industry contributions (up to 0.25% of AGVP) by the Australian Government.

Financial position

Note 2.1: Financial assets

Note 2.1A: Cash and cash equivalents

	2022	2021
	\$	\$
Cash on hand or on deposit	29,004,985	25,182,254
Total cash and cash equivalents	29,004,985	25,182,254

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

	2022	2021
	\$	\$
Goods and services receivables		
Goods and services ¹	1,141,057	2,195,298
Total goods and services receivables	1,141,057	2,195,298
Department of Agriculture, Fisheries and Forestry		
Receivables	1,174,341	2,442,562
Total receivables from Department of Agriculture, Fisheries and Forestry	1,174,341	2,442,562
Other receivables		
GST receivable from the Australian Taxation Office	587,146	120,600
FBT receivable from the Australian Taxation Office	_	1,973
Interest receivable from the Commonwealth Bank	16,155	161
Total other receivables	603,301	122,733
Total trade and other receivables	2,918,699	4,760,593
Trade and other receivables are expected to be recovered		
No more than 12 months	2,918,699	4,760,593
Total trade and other receivables	2,918,699	4,760,593

^{1.} Credit terms for goods and services are within 30 days (2020–21: 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

	Buildings	Plant and equipment	Intangibles	Total
	\$	\$	\$	\$
As at 1 July 2021				
Gross book value	1,009,479	121,200	1,321,362	2,452,041
Accumulated depreciation, amortisation and impairment	(339,291)	_	(833,222)	(1,172,513)
Total as at 1 July 2021	670,188	121,200	488,140	1,279,528
Additions				
Purchase or internally developed	-	-	20,960	20,960
Right-of-use assets	186,359	_	_	186,359
Revaluations recognised in other comprehensive income ¹	-	28,578	-	28,578
Impairments recognised in net cost of services	-	_	(51,626)	(51,626)
Depreciation and amortisation	-	(59,078)	(133,595)	(192,673)
Depreciation on right-of-use assets	(166,006)	_	_	(166,006)
Total as at 30 June 2022	690,541	90,700	323,878	1,105,119
Total as at 30 June 2022 represented by				
Gross book value	1,195,837	90,700	1,036,330	2,322,867
Accumulated depreciation, amortisation and impairment	(505,296)	_	(712,452)	(1,217,748)
Total as at 30 June 2022	690,541	90,700	323,878	1,105,119
Carrying amount of right-of-use assets	690,541	_		690,541

^{1.} Revaluations of non-financial assets

As at 30 June 2022, Jones Lang LaSalle Public Sector Valuations conducted a revaluation of plant and equipment. A revaluation increment of \$28,578 for 2021–22 (2020–21: increment of \$35,214) was applied to the asset revaluation reserve and included in the equity section of the Statement of Financial Position.

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.

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, 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:

	2022	2021
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 2022. 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 FRDC 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 (2020–21: 10 years).

All software assets were assessed for indications of impairment as at 30 June 2022.

Note 2.2B: Other non-financial assets

	2022	2021
	\$	\$
Prepayments	20,417	-
Total other non-financial assets	20,417	-

Note 2.3: Payables

Note 2.3A: Suppliers

	2022	2021
	\$	\$
Trade creditors and accruals	156,995	104,504
Total suppliers	156,995	104,504

Settlement is usually made within 30 days.



	2022	2021
	\$	\$
Projects		
Australian Government entities	110,763	-
State and territory government expense	242,000	-
Universities and educational bodies	95,700	46,230
Industry (commercial, recreational and Indigenous)	_	5,500
Contract liability ¹	3,094,782	2,795,559
Other	68,623	106,767
Total projects	3,611,868	2,954,056

The contract liabilities from contracts with customers are associated with funding provided for research and development activities
under Funding Agreements with the Department of Agriculture, Fisheries and Forestry, NSW Department of Primary Industries,
Australian Maritime Safety Authority, Great Barrier Reef Marine Park Authority and Department of Agriculture and Fisheries QLD
as detailed below.

Department of Agriculture, Fisheries and Forestry

- Assist with data generation to support Australian Pesticides and Veterinary Medicines Authority application
- 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
- Peracetic—Ag Vet 6—4 G1AHKTN
- Tuna Champions Phase 2
- Finfish Parasites—Toltrazuril—4 GWT37U6.

The FRDC recognised a contract liability in 2021–22 totalling: \$643,882.

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 2021–22 totalling: \$1,325,900.

Australian Maritime Safety Authority

Seafood Industry Safety Initiative (SISI) funding support.

The FRDC recognised a contract liability in 2021–22 totalling: \$690,000.

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 2021–22 totalling: \$300,000.

Department of Agriculture and Fisheries QLD

· Queensland aquaculture.

The FRDC recognised a contract liability in 2021–22 totalling: \$135,000.

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

	2022	2021
	\$	\$
FBT payable	835	1,328
PAYG payable	67,874	63,236
Other	_	6,588
Total other payables	68,709	71,152

Note 2.4: Interest bearing liabilities

Note 2.4A: Leases

	2022	2021
	\$	\$
Lease liabilities ¹	721,955	694,555
Total leases	721,955	694,555
1. Total cash outflow for leases for the period ended 30 June 2022 was \$166,999.		
	2022	2021
	\$	\$
Maturity analysis—contractual undiscounted cash flows		
Within 1 year	174,131	132,166
Between 1 to 5 years	562,984	581,948
Total leases	737,115	714,114

The FRDC in its capacity as lessee has leased office accommodation located at:

- Fisheries Research House, 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.
- Wine Australia, corner of Botanic and Hackney Roads, Adelaide, South Australia was renewed 1 August 2021 and expires on 31 July 2026, with an option to renew on 1 August 2026. Lease payments are subject to a CPI annual increase in accordance with the lease agreement.

The above lease disclosures should be read in conjunction with the accompanying Notes 1.1B 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 FRDC'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

	2022	2021
	\$	\$
Leave	1,174,588	819,369
Total employee provisions	1,174,588	819,369

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.

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 FRDC'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 liability for long service leave has been determined by reference to the requirements of the short-hand method. 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 FRDC 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:

	2022	2021
	\$	\$
Short-term employee benefits	1,536,697	1,548,977
Post-employment benefits	241,720	245,057
Other long-term employee benefits	42,902	47,599
Total key management personnel remuneration expenses ¹	1,821,319	1,841,634

- 1. The total number of key management personnel that are included in the above table is 19 (2020–21:15). 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 (resigned 6 May 2022)
 - five non-executive directors (retired 31 August 2021).

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

	2022	2021
Nil to \$39,999	10	1
\$40,000 to \$69,999	3	8
\$140,000 to \$239,999	5	5
\$360,000 to \$389,999	1	1
Total number of key management personnel	19	15

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, 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 (Chair Remuneration Committee)	
Professor Colin D. Buxton	Director (Re-appointed 1 September 2021) (Deputy Chair)	
Dr Christopher Calogeras	Director (Appointed 1 September 2021)	
Dr Saranne Cooke	Director (Re-appointed 1 September 2021) (Chair Finance and Audit Committee)	
Dr Patrick Hone	Managing Director	
Mrs Suzanne Hullick	Director (Appointed 1 September 2021) (Member Finance and Audit Committee)	
Mr Boris Musa	Director (Appointed 1 September 2021) (Member Finance and Audit Committee)	
Mr Alex Ogg	Director (Appointed 1 September 2021) (Member Remuneration Committee)	
Dr Lyndal Thorburn	Director (Appointed 1 September 2021) (Member Remuneration Committee)	
Dr Kathryn Brooks	Director (Retired 31 August 2021)	
Ms Katina Hodson-Thomas	Director (Retired 31 August 2021)	
Mr Mark King	Director (Retired 31 August 2021)	
Mr John Lloyd	Director (Retired 31 August 2021)	
Dr Lesley MacLeod	Director (Retired 31 August 2021)	

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. 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 (Retired 31 August 2021)	School of Humanities and Social Sciences, Faculty of Arts and Education Deakin University Adjunct Associate Professor 1 July 2021 to 31 August 2021	Research projects or work undertaken by the organisation
Professor C.D. Buxton	Southern Rock Lobster Ltd Chair 1 July 2021 to 31 December 2021 (Indirect interest as Southern Rock Lobster Ltd is a member of Seafood Industry Australia)	Research projects or work undertaken by the organisation
	Institute for Marine and Antarctic Studies University of Tasmania* Adjunct Professor 1 July 2021 to current	Research projects or work undertaken by the organisation
Dr C. Calogeras	C-AID Consultants Director 1 September 2021 to current	Research projects or work undertaken by the organisation
Dr P. Hone	CEO's Committee for the Council of Rural Research and Development Corporations Member 1 July 2021 to current	Research projects or work undertaken by the organisation
	National Marine Science Committee Member 1 July 2021 to current	Research projects or work undertaken by the organisation
Mr B. Musa	Australian Barramundi Farmers Association Non-executive Director and Treasurer FRDC Project Number 2020-127 "ABFA IPA: RD&E project investment and management via ABFA strategic plan 2021 2025" 1 September 2021 to current	Research projects or work undertaken by the organisation
Mr A. Ogg	Seafood Industry Australia Member 1 September 2021 to current	Research projects or work undertaken by the organisation

The following transactions occurred during the directors' related period with these entities.

Transactions with related entities	2022		2021	
	Expenditure	Income	Expenditure	Income
School of Humanities and Social Sciences,				
Faculty of Arts and Education				
Deakin University	-	-	87,885	-
Southern Rock Lobster Ltd	82,500	_	264,000	_
Institute for Marine and Antarctic Studies				
University of Tasmania	5,850,601	7,439	6,235,271	-
C-AID Consultants	228,043	_	_	_
Council of Rural Research and Development				
Corporations	7,773	_	22,159	-
National Marine Science Committee	5,000	_	_	_
Australian Barramundi Farmers Association	_	110,000	_	-
Seafood Industry Australia	155,100	-	-	-

All transactions were conducted under normal terms and conditions and include GST.

Note 3.4B: Other related party disclosures

Department of Agriculture, Fisheries and Forestry

The FRDC has a Research & Development Funding Head Agreement with the Department of Agriculture, Fisheries and Forestry under which it manages the suite of activities detailed below:

- Assist with data generation to support Australian Pesticides and Veterinary Medicines Authority (APVMA) 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
- Peracetic—Ag Vet 6—4 G1AHKTN
- Tuna Champions Phase 2
- Finfish Parasites—Toltrazuril—4 GWT37U6.

The FRDC has received new funding from the Department of Agriculture, Fisheries and Forestry in 2021–22 totalling: \$1,050,000 (2020–21: \$310,271).

Agricultural Innovation Australia

The FRDC is one of 15 members of 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 2021–22, FRDC paid membership fees of \$65,000 to AIA (2020–21 \$65,000).



Financial instruments and fair value measurement

Note 4.1: Financial instruments

Note 4.1A: Categories of financial instruments

	2022	2021
	\$	\$
Financial assets at amortised cost		
Cash and cash equivalents	29,004,985	
Trade and other receivables	1,157,212	2,195,459
Total financial assets at amortised cost	30,162,197	27,377,713
Total financial assets	30,162,197	27,377,713
Financial liabilities		
Financial liabilities measured at amortised cost		
Suppliers and other payables	156,995	104,504
Projects	3,611,868	2,954,056
Total financial liabilities measured at amortised cost	3,768,863	3,058,560
Total financial liabilities	3,768,863	3,058,560

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 FRDC'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 FRDC 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.

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 gains or losses on financial assets

	2022	2021
	\$	\$
Financial assets at amortised cost		
Interest revenue	56,172	93,213
Net gains on financial assets at amortised cost	56,172	93,213

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 plant and equipment assets as at 30 June 2022. 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 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	
	2022 2021	
	\$	\$
Non-financial assets		
Leasehold improvements	82,650	107,600
Plant and equipment	8,050	13,600
Total non-financial assets	90,700	121,200

Other information

Note 5.1: Current/non-current distinction for assets and liabilities

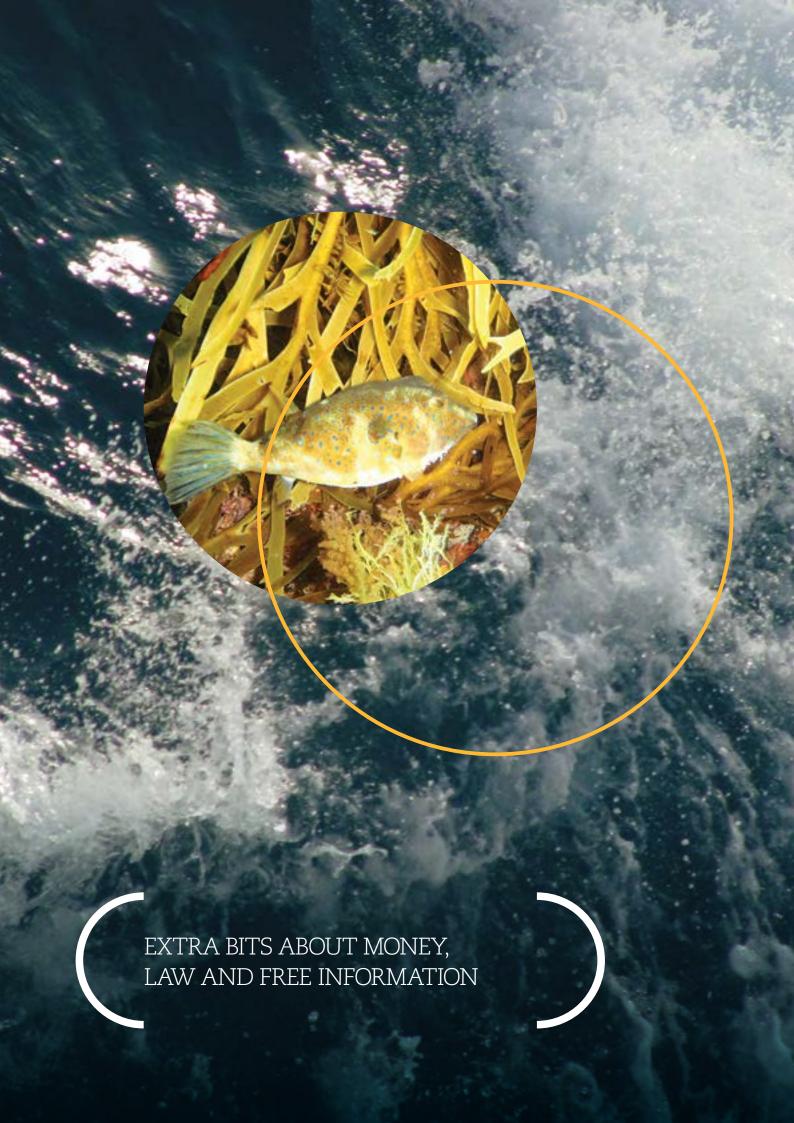
Note 5.1A: Current/non-current distinction for assets and liabilities

	2022	2021
	\$	\$
Assets expected to be recovered in:		
No more than 12 months		
Cash and cash equivalents	29,004,985	25,182,254
Trade and other receivables	2,918,699	4,760,593
Other non-financial assets	20,417	_
Total no more than 12 months	31,944,101	29,942,847
More than 12 months		
Buildings	690,541	670,188
Plant and equipment	90,700	121,200
Intangibles	323,878	488,140
Total more than 12 months	1,105,119	1,279,528
Total assets	33,049,220	31,222,375
Liabilities expected to be settled in:		
No more than 12 months		
Suppliers	156,995	104,504
Projects	3,611,868	2,954,056
Other payables	68,709	71,152
Leases	167,654	132,166
Employee provisions	389,849	689,122
Total no more than 12 months	4,395,075	3,951,000
More than 12 months		
Leases	554,301	562,389
Employee provisions	784,739	130,247
Total more than 12 months	1,339,040	692,636
Total liabilities	5,734,115	4,643,636



Information about remuneration for key management personnel

		Short-term benefits	Post- employment benefits	Other long-term benefits	Total remun- eration
Name	Position title	Base salary (excludes super, includes annual leave accrued)	Super- annuation contributions	Long service leave	
		\$	\$	\$	\$
Mr John Williams	Chair	60,980	6,098	-	67,078
Professor Colin Buxton	Deputy Chair	36,590	3,659	_	40,249
Dr Chris Calogeras	Non-executive director	30,492	3,049	_	33,541
Dr Saranne Cooke	Non-executive director	36,590	3,659	_	40,249
Suzanne (Suzi) Hullick	Non-executive director	30,492	3,049	_	33,541
Boris Musa	Non-executive director	31,406	2,134	_	33,541
Alex Ogg	Non-executive director	30,492	3,049	_	33,541
Dr Lyndal Thorburn	Non-executive director	30,492	3,049	_	33,541
Retired 31 August 2022					
Dr Kathryn Brooks	Non-executive director	6,098	610	_	6,708
Katina Hodson-Thomas	Non-executive director	6,098	610	_	6,708
Mark King	Non-executive director	6,098	610	_	6,708
John Lloyd	Non-executive director	6,098	610	_	6,708
Dr Lesley MacLeod	Non-executive director	6,098	610	_	6,708
Dr Patrick Hone	Managing Director	344,139	59,004	13,629	416,772
Crispian Ashby	General Manager Investment	215,214	36,783	8,362	260,359
Cheryl Cole	General Manager Finance and Business	178,147	31,078	6,970	216,195
Kyaw Kyaw Soe Hlaing	General Manager ICT and Digitalisation	181,812	27,412	6,970	216,194
Matt Barwick	General Manager Strategy and Innovation	181,727	34,389	6,970	223,086
Kate Harvey (resigned 6 May)	General Manager Stakeholder Engagement	117,634	22,257	_	139,891





APPENDIX A: FRDC'S PRINCIPAL REVENUE BASE

As stipulated in the PIRD Act, and shown in Figure 5, 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 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 93.

FIGURE 5: PROPORTIONS OF FRDC'S PRINCIPAL REVENUE BASE

A: PUBLIC-GOOD FUNDING BY AUSTRALIAN GOVERNMENT
Australian Government pays 0.50 per cent of AGVP of the commercial sector

B: CONTRIBUTION BY THE
COMMERCIAL SECTOR
Commercial fishers and aquaculturists contribute
at least 0.25 per cent of AGVP

C: AUSTRALIAN GOVERNMENT MATCHING OF CONTRIBUTION BY COMMERCIAL SECTOR Same amount as B, up to a maximum of 0.25 per cent of AGVP

D: ADDITIONAL INVESTMENTS

By post-harvest, retail, recreational and import sectors and government agencies

E: MARKETING INVESTMENT

These funds are invested separately from R&D investments and are to be used for marketing only

Rationale for FRDC's revenue base

The high component of public good in the operating environment of the fishing industry, has significance for 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 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.

APPENDIX B: FRDC'S LEGISLATIVE FOUNDATION AND THE EXERCISE OF MINISTERIAL POWERS

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.

FRDC's objects, deriving from section 3 of the PIRD Act and are incorporated in FRDC's vision and planned outcomes. As reflected in Figure 3 on pages 20–21, 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 FRDC's investments fully address the legislative objects.

Enabling legislation

FRDC's enabling legislation is the Primary Industries Research and Development Act 1989 (PIRD Act).

FRDC's Board is responsible to the Minister for Agriculture, Fisheries and Forestry 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 FRDC website.

In the interests of clarity, the following statements of FRDC's objects, functions and statutory powers mirror the wording of the PIRD Act but are specific to FRDC and its business environment. Similarly, the statements of FRDC's functions and statutory powers have been made shorter and simpler than the wording of the Act.

Objects

The objects of 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:
 - 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 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, Fisheries and Forestry, statutory levy payers and FRDC representative organisations, and
- facilitate the dissemination, adoption and commercialisation of the results of fisheries R&D.

Statutory powers

Subject to the PIRD Act, 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 FRDC and other persons,
- making applications, including joint applications for patents,
- dealing with patents vested in 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, Fisheries and Forestry. They relate to:

- directing 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 FRDC,
- determining the gross value of production of the fishing industry for the purposes of establishing the maximum payments by the Australian Government to FRDC,
- establishing written guidelines covering the payment by FRDC to an eligible industry body, or member of an eligible industry body, for expenses reasonably incurred in connection with consultation with 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, Fisheries and Forestry.



APPENDIX C: 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 FRDC's agency plan is available from the FRDC website—www.frdc.com.au/About-us/Freedom-of-information.

Role, structure and functions

FRDC's role is described on page 9 of this annual report; its structure and functions and legislation under which it is established are described in Appendix A.

DOCUMENTS AVAILABLE FOR INSPECTION

R&D Plan (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 (ceased publication in June 2022)	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 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—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 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.



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

CRRDC Council of Rural Research and Development Corporations
CSIRO Commonwealth Scientific and Industrial Research Organisation

DAFF Australian Government Department of Agriculture, Fisheries and Forestry

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

m million

MB-CRC Marine Bioproducts Cooperative Research Centre

MP member of parliament
NSW New South Wales
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

SDG [United Nations] Sustainable Development Goal

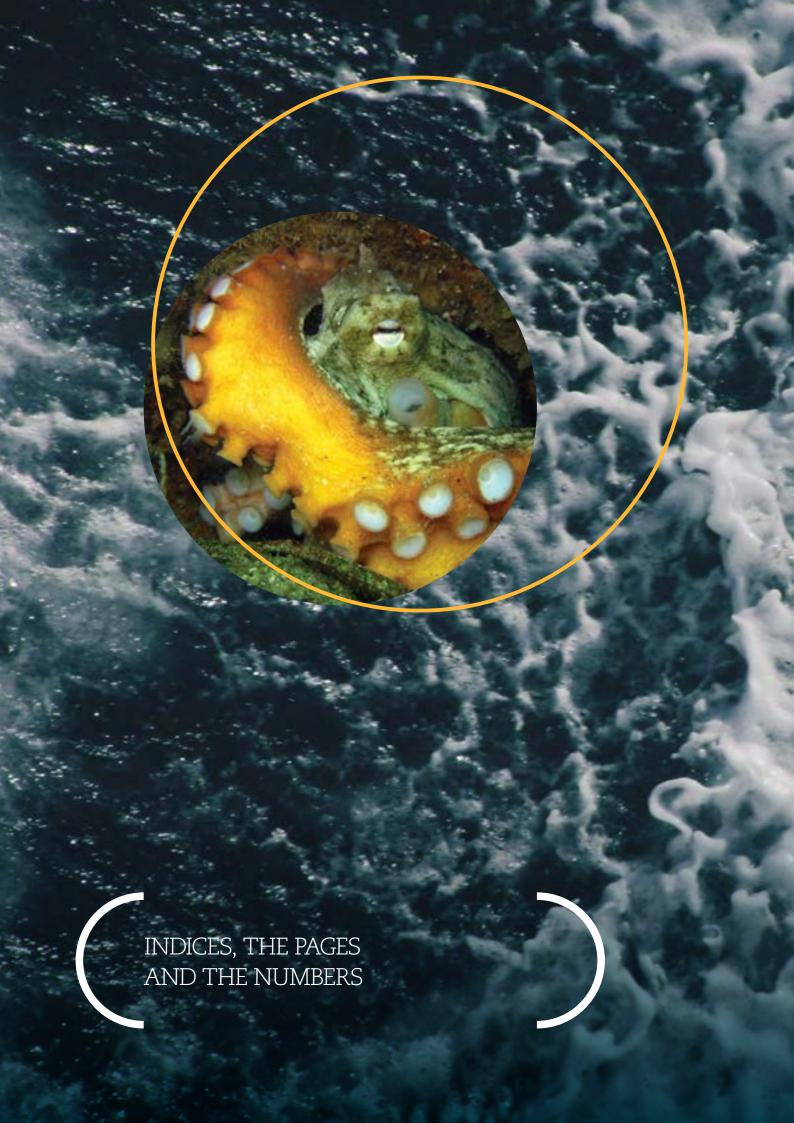
WHS Act Work Health and Safety Act 2011

GLOSSARY

Term	Explanation
Annual Operational Plan (AOP)	FRDC's AOP is prepared in accordance with the PIRD Act and submitted to the Minister for approval prior to the beginning of each new financial year. The document gives effect to the R&D plan, specifying planned income, expenditure, strategies, outputs and key performance indicators for the coming financial year.
Annual report	FRDC's report of activities undertaken during the financial year which is tabled in Parliament.
Corporate governance	The systems and processes used by an organisation to direct and control its operations, affairs and activities to ensure the objectives of the organisation are met.
Director	Part-time office holder appointed by the Minister under section 7 of the PIRD Act and under terms and conditions determined by the remuneration tribunal.
Extension	The communication of knowledge or technology to end-users, stakeholders and the community. Activities that lead to the adoption of research results to assist stakeholders to improve fishing and aquaculture profitability; environmental and stock performance; or to establish new fishing and aquaculture activities through the: organised communication of research and information, purposeful transfer of skills.
Fishing and aquaculture	The sectors that make up fishing and aquaculture, and associated industries include Indigenous, commercial and recreational fishers and aquaculturists, post-harvest sectors, as well as fisheries scientists and managers.
FRDC Board	FRDC is governed by a board of directors whose expertise is prescribed by the PIRD Act. The Board is responsible to the Minister and the Assistant Minster and, through them, to the Parliament.
Indigenous Reference Group (IRG)	A group of Indigenous Australians established by FRDC in 2012, made up of members nominated from Indigenous Australian communities. With respect to the facilitation of Australian fisheries and aquaculture R&D, and activities to promote adoption, the IRG: acts as a research coordination program, assists FRDC in engaging with Indigenous Australian communities.
Industry partner	A sector, industry or enterprise that has entered into a contractual relationship with FRDC for the purposes of research, development or extension.
Industry Partnership Agreement (IPA)	An agreement between FRDC and a sector body to manage a suite of sectoral projects over a specified time period. IPAs have a budget allocation, based on forecast contributions (at least 0.25 of GVP), FRDC 'matching' contributions, less an 8 per cent FRDC service fee.
Public Governance, Performance and Accountability Act 2013 (PGPA Act)	The PGPA Act is mainly about the governance, performance and accountability of Commonwealth entities.
Primary Industries Research and Development Act 1989 (PIRD Act)	The PIRD Act is an act to provide for the undertaking of research and development relating to primary industries and natural resources, and for related purposes.
Portfolio Budget Statements (PBS)	The PBS describes the allocation of funding under FRDC's structure to provide the means for it to meet its prescribed outcomes. The primary purpose of the PBS is to inform the Parliament of the basis for proposed budget outlays, with particular emphasis on the proposed provisions in Appropriation Bills (1 and 2). This document is drafted to ensure consistency with the AOP and is prepared annually. It is consolidated, together with the statements of other rural RDCs, by the Department of Agriculture, Fisheries and Forestry (DAFF). Unlike the R&D Plan and AOP, it is tabled in Parliament.

Term	Explanation
Project	A project is an FRDC-funded activity. An approved application becomes a project once an agreement has been signed by delegates of both FRDC and the research provider.
R&D Plan	 The FRDC Research and Development Plan (the R&D Plan) is FRDC's principal planning document and is prepared with regard to ministerial directions and government policy. It is finalised following consultation with stakeholders from government, sectors, and in particular, FRDC's representative organisations. It is the principal source of information about FRDC's future direction and: describes FRDC, defines FRDC's business environment, lays down, against the business environment, FRDC's planned outcomes and priorities for the planning period, outlines the strategies that FRDC intends to adopt to achieve those outcomes, covers a period of five years starting at the end the preceding R&D Plan, is approved by the Minister for Agriculture, Fisheries and Forestry and is reviewed annually.
Research and development (R&D)	Systematic experimentation and analysis in any field of science, technology or economics (including the study of the social or environmental consequences of the adoption of new technology) carried out with the object of: (a) acquiring knowledge that may be of use in obtaining or furthering an objective of that primary industry or class, including knowledge that may be of use for the purpose of improving any aspect of the production, processing, storage, transport or marketing of goods that are the produce, or that are derived from the produce, of that primary industry or class, or (b) applying such knowledge for the purpose of attaining or furthering such an objective (PIRD Act Section 4).
Stakeholder	People, organisations or groups with an interest or stake in FRDC's business. FRDC's stakeholders are the fishing and aquaculture community, fishing research providers, the Commonwealth, state and territory governments, relevant ministers and the people of Australia. This does not include FRDC staff.





COMPLIANCE INDEX

This index shows the page numbers on which FRDC has reported in accordance with sections of the *Primary Industries Research and Development Act 1989*, the *Public Governance, Performance and Accountability Act 2013* (PGPA Act), PGPA Rule 2014 and other government policy and associated reporting requirements.

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. FRDC's reporting is, accordingly, appropriate to its legislative basis, functions and size.

When this annual report has not addressed a compliance subject (either because it is not applicable [n/a] or activity did not occur during the year), the subject entry is followed by '—' rather than by a page number.

TABLE 14: PRIMARY INDUSTRIES RESEARCH AND DEVELOPMENT ACT 1989 (PIRD ACT)

Section	Description	Comply	Page
s10	R&D corporation is a body corporate etc.	Yes	124–126
s11	Functions	Yes	125
s12	Powers	Yes	124–126
s19	R&D plans	Yes	10, 15, 23
s20	Approval of R&D plans	Yes	10
s21	Variation of R&D plans	n/a	_
s24	Consultation	Yes	15–16
s25	Annual operational plans	Yes	23–24
s27	Compliance with R&D plans and annual operational plans	Yes	10, 15, 22–23, 71
s28	Annual report	Yes	71, 94
s28 (a)	(i) R&D activities coordinated or funded, wholly or partly, during the year	Yes	throughout
s28 (a)	(ia) Marketing activities coordinated or funded, wholly or partly, during the year	n/a	_
s28 (a)	(ii) Amount spent in relation to R&D and marketing activities*	Yes	v, 19, 93–120
s28 (a)	(iib) Particulars of the impact of R&D and marketing activities on industry*	Yes	v, 19, 93–120
s28 (a)	(iii) Revisions of the R&D Plan that have been approved by the Minister	n/a	_
s28 (a)	(iv) Agreements entered into under s13 and 14 of the PIRD Act and activities in relation to the agreements entered into during or prior to the period	Yes	V
s28 (a)	(v) Applying for patents for inventions, commercially exploiting patented inventions and granting licences under patented inventions	n/a	_
s28 (a)	(vi) Any companies in which the Corporation has an interest	n/a	_
s28 (a)	(vii) Activities relating to the formation of a company	n/a	_
s28 (a)	(viii) Significant acquisitions and dispositions of real property (land and buildings)	n/a	_
s28 (b)	Assessment of the extent to which operations during the period have achieved its objectives as stated in its R&D plan; and implemented the AOP	Yes	5–8, 26–57

^{*} FRDC does not invest in marketing.

TABLE 14: CONTINUED

Section	Description	Comply	Page
s28 (c)	Assessment of the extent to which RDC has contributed to the attainment of the objects of the PIRD Act	Yes	19
s28 (d)	Sources and expenditure of funds, including commodity, cross-commodity and regional classifications; and funds derived from transfer under s144	Yes	V
s29	Accountability to representative organisations	Yes	9, 16
s33	Expenditure of money of R&D corporations	Yes	89–120
	Spending must be in accordance with funding agreement	Yes	4, 14, 22, 24
s33A	R&D money must not be spent on marketing	Yes	123
s34	Commonwealth to be paid levy expenses from R&D corporation	Yes	75
s35	Commonwealth to be reimbursed for refunds of levy	Yes	75
s40	Separate accounting records	Yes	89–120
s47	Times and places of meetings	Yes	85
s53	Minutes	Yes	87
s76	Duties	Yes	79
s87	Employees	Yes	71–72, 121
s143	Minister may give directions	Yes	76

 TABLE 15: PUBLIC GOVERNANCE, PERFORMANCE AND ACCOUNTABILITY ACT 2013 (PGPA ACT)

Section	Description	Comply	Page
s39(1) (b)	Annual performance statements	Yes	iii, 11
s43(4)	Annual financial statements and the Auditor-General's report	Yes	89–120
s46(3)	Annual report complies with any requirements prescribed by the rules	Yes	iii, 79, 87, 95

TABLE 16: SECTION 17B OF THE PGPA ACT: 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
17BB	Report approved and signed by accountable authority including how and when approval was given and that accountable authority is responsible for the preparation and contents of the annual report	Yes	95
17BC	Report complies with guidelines for presenting documents to Parliament	Yes	throughout
17BD	Report has regard to the interests of the Parliament and other users. Information included is relevant, reliable, concise, understandable and balanced	Yes	throughout
17BE (a)	Details of the legislation establishing the body	Yes	124–125
17BE (b)	(i) Summary of the objects and functions of entity as set out in legislation	Yes	20–21, 124–125
17BE (b)	(ii) The purposes of the entity as included in entity's corporate plan for the reporting period	Yes	9, 124–125
17BE (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	3, 9, 13
17BE (d)	Directions given to the entity by the Minister under an Act or instrument during the reporting period	Yes	76
17BE (e)	Any government policy order that applied in relation to the entity during the reporting period under section 22 of the Act	Yes	76
17BE (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	n/a	
	(b) a government policy order that applied in relation to the entity during the reporting period under section 22 of the Act	n/a	_
17BE (g)	Annual performance statements in accordance with paragraph 39(1)(b) of the Act and section 16F of the rule	Yes	iii, 11, 89–120

TABLE 16: CONTINUED

PGPA rule reference	Description	Comply	Page
17BE (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	_
17BE (j)	Information on the accountable authority, or each member of the accountable authority, of the entity during the reporting period	Yes	95
17BE (k)	Outline of the organisational structure of the entity (including any subsidiaries of the entity)	Yes	71
17BE (ka)	Statistics on the entity's employees on an ongoing and non-ongoing basis, including the following:		
	(a) statistics on full-time employees,	Yes	71–72
	(b) statistics on part-time employees,	Yes	71–72
	(c) statistics on gender,	Yes	71–72
	(d) statistics on staff location	Yes	71–72
17BE (I)	Outline of the location (whether or not in Australia) of major activities or facilities of the entity	Yes	145
17BE (m)	Information relating to the main corporate governance practices used by the entity during the reporting period	Yes	73, 79
17BE (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 (GST inclusive):		
	(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	Yes	74, 124–125
	(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	Yes	116
17BE (p)	Any significant activities and changes that affected the operation or structure of the entity during the reporting period	Yes	iii, 13–17
17BE (q)	Particulars of judicial decisions or decisions of administrative tribunals that may have a significant effect on the operations of the entity	Yes	76
17BE (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		90–91
	(b) a Parliamentary Committee, or	n/a	_
	(c) the Commonwealth Ombudsman, or	n/a	_
	(d) the Office of the Australian Information Commissioner	n/a	_
17BE (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	_
17BE (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	87
17BE (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,	Yes	85
	(b) the name of each member of the audit committee,	Yes	86
	(c) the qualifications, knowledge, skills or experience of each member of the audit committee,	Yes	86
	(d) information about each member's attendance at meetings of the audit committee,	Yes	86
	(e) the remuneration of each member of the audit committee	Yes	86
17BE (ta)	Information about executive remuneration	Yes	121
17BE (u)	Provide an index identifying where requirements of 17BE are to be found	Yes	137

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TABLE 17: GOVERNMENT POLICY AND ASSOCIATED REPORTING REQUIREMENTS

Section	Comply	Page
Australian Government Cost Recovery Policy	Yes	75
Australian Government Foreign Exchange Risk Management Guidelines	Yes	76
Australian Government priorities	Yes	21
Rural Research Priorities		
Strategic Research Priorities		
Australian Government Commonwealth Procurement Rules	Yes	76
Australian Government Commonwealth Property Management Framework	Yes	76
Australian Government Protective Security Policy Framework (PSPF)	Yes	76
Australian Government's Public Sector Workplace Relations Policy 2020	Yes	76
Comcover Risk Benchmarking Survey	Yes	74
Commonwealth Disability Discrimination Act 1992 (National Disability Strategy 2010–20)	Yes	73
Commonwealth Fraud Framework 2017	Yes	74
Environment Protection and Biodiversity Conservation Act 1999 (Section 16A)	n/a	_
Freedom of Information Act 1982, quarterly and annual lodgements	Yes	76, 127
National Code of Practice for the Construction Industry and the	n/a	_
Commonwealth's Implementation Guidelines		
OLSC [Office of Legal Services Coordination] Legal Expenditure annual return	Yes	76
Work Health and Safety Act 2011	Yes	77



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ABOUT THIS REPORT

This report describes the extent to which 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 Indigenous, commercial and recreational fishing and aquaculture sectors and in the R&D community.

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Postal address: Locked Bag 222, Deakin West ACT 2600

Canberra office: Fisheries Research House, 25 Geils Court, Deakin, Australian Capital Territory

Adelaide office: Corner of Botanic and Hackney Roads, Adelaide, South Australia

Telephone: 02 6122 2100; from overseas + 61 2 6122 2100

E-mail: frdc@frdc.com.au
Website: www.frdc.com.au

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FRDC invests in research, development and extension activities to improve economic, social and environmental outcomes for Australian fishing and aquaculture and the wider community.



FRDC is a co-funded partnership between the Australian Government and fisheries and aquaculture. Funds are collected by the Commonwealth, state and territory governments as part of their fisheries management activities and through a farmed prawn levy. FRDC is responsible for ensuring these funds are directed towards research that assists the management of fisheries and aquaculture resources for their ongoing sustainability and for the benefit of Indigenous, commercial and recreational fishing, and aquaculture, while also delivering a public good benefit to the Australian community.