FRDC

ANNUAL REPORT 2014–15

In the consultation leading up to the release of the FRDC's RD&E plan 2015–20 we heard the concerns and aspirations of fishers and fish farmers from across Australia.

Our listening process has taken place over the last year and many people took the opportunity to drop us a word in our 'shell-like'.

Quick guide to the annual report

If you do not have time to read this report in detail, look first in the following sections:

- For an outline of the FRDC's investments and income, read pages iv–v and the financial statements starting on page 133.
- For an overview of operations during the past year, read 'The directors' review of operations and future prospects' starting on page 5.

More detailed coverage is in these sections:

- The key strategic imperatives that drive the FRDC's activities are shown on pages 5–19.
- Outcomes by recent and current projects are in the research and development (R&D) programs reporting starting on page 38 (Environment), page 51 (Industry), page 64 (Communities), page 75 (People development) and page 84 (Extension and adoption).
- Performance reporting for the Management and accountability program starts on page 111.
- Financial contributions by industry and governments are listed on pages iv and 154.
- Coverage of corporate governance information is in the section starting on page 119.
- The financial statements start on page 133.

Key events in 2014–15

- Received approval under the Rural Research and Development (R&D) for Profit grants program for a $3 million project to further develop Yellowtail Kingfish aquaculture.
- Updated and published the Australian Fish Names Standard AS 5300.
- Created an Indigenous subprogram to be managed by the Indigenous Reference Group to drive the FRDC's investment in this area.
- Developed national guidelines for developing fishery harvest strategies.
- Technically reviewed formal harvest strategies to assist in the revision of the Commonwealth's harvest strategy policy
- Developed a methodology to measure the economic value of recreational fishing at a national level.
- Developed and tested social objectives for fisheries management.
- Made significant progress in the development of octopus aquaculture.
- Assessed the vulnerability of benthic habitats to impacts by demersal gears in Australia's exclusive economic zone of the Southern Ocean.
- Contributed to the development of the National Marine Science Plan 2015–25.
- Validated the use of near-infrared spectroscopy to age fish.
- Developed a management framework and harvest strategies for small-scale multi-species, multi-method community-based fisheries, using the South Australian Lakes and Coorong Fishery as a case study.
- Five industry partnership agreements signed with peak industry sectors.
- Identified viable refrigerant alternatives for use in the Northern Prawn Fishery.
- Developed a methodology to forecast the spatial distribution of Southern Bluefin Tuna in the Great Australian Bight fishery.
- Completed and signed a Commonwealth funding agreement with the Department of Agriculture.
- Developed a method to add value to seafood processing waste through the recovery of bioactive molecules.

Survey shows greater stakeholder engagement by FRDC

(FRDC project number: 2011/514)

Performance reporting: Personal contact and digital communications are part of the mix keeping the FRDC in contact with stakeholders and improving its value to the fisheries and seafood sectors.

In the past three years the FRDC has made a conscious effort to increase engagement with its end users and the success of these efforts is evident in the results of its latest stakeholder survey.

Intuitive Solutions conducted the survey for the FRDC, with 274 fishers taking part in December 2014 and February 2015. This included 72 participants who were part of large businesses, defined as operations among the top 300 within Australia by value. The other participants are involved in smaller businesses.

A total of 93 per cent of those surveyed reported direct or indirect contact with the FRDC—a major increase in the level of fisher engagement reported in the previous stakeholder survey in 2011, when it was only 52 per cent (see figure below). This is a positive result for the FRDC's outreach efforts, both on a face-to-face and digital level.

In 2012, the FRDC launched its new online presence with a major overhaul of its website and its entrance into the social media space, which evolved into the creation of extremely successful accounts on Facebook, YouTube, Twitter and Vimeo. In 2013, the FRDC also launched the Fishfiles website (www.fishfiles.com.au), targeting consumers with the aim of encouraging more seafood consumption.

The value fishers placed on the role of the FRDC also increased. In response to the question 'How important is it for the Australian fishing industry to have an organisation like FRDC?', the FRDC's importance scored 8.5 out of 10. In the 2011 survey this response was 7.8 out of 10.

"The extra effort in consultation and stakeholder engagement helps focus the FRDC's investment in the areas most relevant to fishing and aquaculture," says FRDC Executive Director Patrick Hone.

Overall, the results of the latest survey are positive and show an improved performance on previous years, an upward trend the FRDC intends to continue.

INCREASE IN STAKEHOLDER ENGAGEMENT WITH THE FRDC, 2011 TO 2015.

TOTAL CONTACT WITH THE FRDC

Direct contact with the FRDC

	2015		2011
Total direct contacts	**50%**	▲	**32%**
Person-to-person contact	**32%**	▲	**21%**
Events and workshops	**42%**	▲	**28%**

Indirect contact with the FRDC

	2015		2011
Total indirect contacts	**93%**	▲	**52%**
Digital	**35%**	▲	**23%**
Communications	**88%**	▲	**53%**

Digital includes Facebook, Twitter and other online services.

Communications includes printed materials such as *FISH* magazine and others.

Of those surveyed, 91 per cent were male and the average age was 52.6 years. The majority (89 per cent) were involved in catching or growing seafood and were located all over Australia, with Queensland, Western Australia and New South Wales the most represented states. Satisfaction with how the FRDC funds are allocated was rated on average 6 out of 10, an improvement from 5.4 in 2011.

The FRDC rated well as a go-to information hub with its website rated fourth out of all possible sources of information about research and ways to improve business.

Further details are available in *FISH* magazine, volume 23, number 2, June 2015.

FISH magazine

FISH magazine continues to be a clear leader in terms of enhancing the FRDC's visibility to industry, with 53 per cent of respondents pointing to it when asked where they had heard of the FRDC.

Overall, *FISH* magazine is a well-received publication, with 53 per cent of interviewees happy with the current mix of content and 24 per cent providing suggestions for additional content, particularly on fisher-related experiences.

Although *FISH* magazine is available online, on the FRDC website and as an iPad app, only five per cent of readers receive it in its electronic form only. Of the readers receiving hard copies, 78 per cent pass it on to others or keep it for future reference.

Nearly half—46 per cent—read it thoroughly, and about the same number follow up on stories they have found in the magazine, while 62 per cent of readers reported learning something useful for their business in it.

2014–15 achievements through investment

Five years at a glance

TABLE 1: FINANCIAL INDICATORS OF R&D INVESTMENT

Expenditure	2010–11	2011–12	2012–13	2013–14	2014–15
	$m	$m	$m	$m	$m
Total expenditure	**25.76**	**29.68**	**25.69**	**27.56**	**28.16**
Total of R&D projects	**21.56**	**25.98**	**22.14**	**22.87**	**24.85**
R&D Program 1 (Environment)	10.14	11.80	8.25	10.20	10.44
R&D Program 2 (Industry)	8.34	9.47	9.57	8.33	10.09
R&D Program 3 (Communities)	0.16	0.47	0.74	0.75	0.83
R&D Program 4 (People development)	1.90	2.12	1.80	1.94	1.49
R&D Program 5 (Extension and adoption)	1.02	2.12	1.78	1.65	2.00
Management and accountability	**4.20**	**3.70**	**3.55**	**4.69**[1]	**3.31**
Total income	**26.70**	**25.42**	**25.98**	**26.89**	**31.75**
Industry contributions	8.69	7.70	7.98	8.46	8.57
Total government contributions	16.53	16.63	17.23	17.93	18.71
Project funds from other parties	0.89	0.46	0.48	0.17	4.27
Other revenue	**0.59**	**0.63**	**0.29**	**0.33**	**0.20**
Australian Government funding[2]	11.03	11.12	11.66	11.97	12.49
Maximum matchable (government) contribution[2]	5.52	5.56	5.83	5.99	6.25
Actual government matching	5.50	5.51	5.57	5.96	6.22

1. In 2013–14, FRDC had a $1.2 million write down of assets which increased the cost of Management and accountability.
2. Government funding and maximum matchable contribution (the maximum amount to which the Australian Government will match industry contributions) are detailed on page 185.

FIGURE 1: EXPENDITURE AND INCOME DURING 2014–15

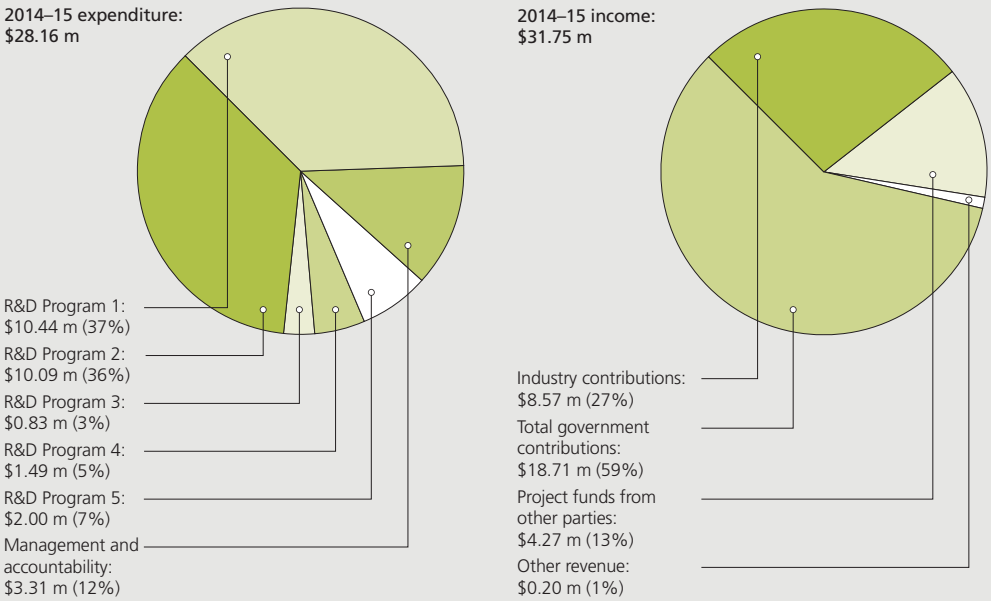
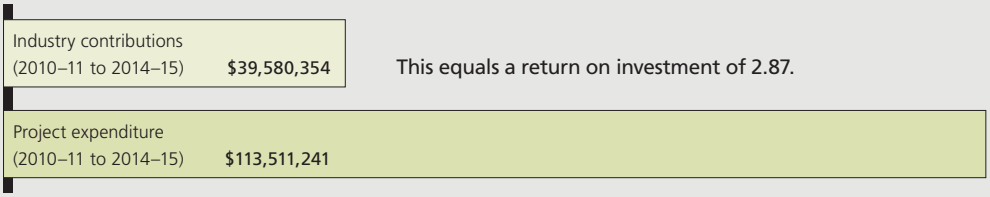


FIGURE 2: FRDC PROJECT INVESTMENT



	2010–11	2011–12	2012–13	2013–14	2014–15
Number of approved new projects	141	146	123	94	81
Total number of active projects under management	412	483	476	428	394
Number of final reports completed	111	129	138	132	105

Summary of contributions

TABLE 2: CONTRIBUTIONS, MAXIMUM MATCHABLE CONTRIBUTIONS BY THE AUSTRALIAN GOVERNMENT AND RETURN ON INVESTMENT, 2014–15

	A	B	C	D	E	F
Jurisdiction—by year	Maximum matchable contribution ($) [note 1]	Contributions ($) [note 2]	Per cent of matchable (%)	Distribution of FRDC spend ($) [note 3]	Return on contribution (D/B) [note 4]	
					2014–15	5 years
Australian farmed prawns [5]	165,730	189,250	114	189,116	1.00	1.66
Commonwealth [6]	827,158	1,007,941	122	3,221,949	3.20	3.46
New South Wales	326,768	636,505	195	2,176,740	3.42	3.47
Northern Territory	125,921	177,698	141	1,152,380	6.49	2.54
Queensland	559,245	618,731	111	2,516,646	4.07	4.66
South Australia	962,225	766,149	80	4,600,672	6.00	2.69
Tasmania	1,831,043	2,198,811	120	5,209,168	2.37	2.19
Victoria	195,893	305,256	156	1,959,388	6.42	3.28
Western Australia	1,251,188	1,258,300	101	3,775,621	3.00	3.32

1. Maximum matchable contribution is the maximum amount to which the Australian Government will match industry contributions in accordance with the criteria detailed on page 185.
2. The contribution figures are accrual based. Contributions come from the commercial and recreational sectors, research partners, government and project specific contributions.
3. Distribution of FRDC spend is based on the estimated flow of RD&E benefits to the respective jurisdictions. It includes a deduction of prior project refunds.
4. Ratios in column F are derived from the distribution of FRDC spend (column D) for 2014–15 and the previous four years.
5. The Australian Prawn Farmers Association has unspent funds in its 2014–15 allocation.
6. There are timing issues in some jurisdictions therefore matching may not occur in the year in which the invoice is raised.

Australian Government
Fisheries Research and Development Corporation

25 September 2015

The Hon. Barnaby Joyce MP
Minister for Agriculture
Parliament House
CANBERRA ACT 2600

Dear Minister,

On behalf of the directors of the Fisheries Research and Development Corporation (FRDC), I have pleasure in presenting the Corporation's annual report for the year ended 30 June 2015.

It has been prepared in accordance with section 28 of the *Primary Industries Research and Development Act 1989*; and approved by the Board in accordance with section 46 of the *Public Governance, Performance and Accountability Act 2013*.

The contents of the report highlight achievements and activities against the FRDC's Research, Development and Extension Plan 2010–15. It is intended to enable you and members of the Australian Parliament to make an informed judgement of the Corporation's performance during the year.

The report is also intended to inform the FRDC's other stakeholders—in particular the financial contributors from the fishing industry and other sectors; as well as the broader members of the commercial, recreational and Indigenous sectors of the fishing industry; and members of the research and development community and general public.

I take this opportunity to acknowledge the strong support of my fellow directors in guiding the Corporation towards outcomes that will greatly benefit members of the Australian fishing industry, and the Australian community.

Yours faithfully,

The Hon. Harry Woods
Chairman

Fisheries Research and Development Corporation
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FRDC

ANNUAL REPORT 2014–15

Contents

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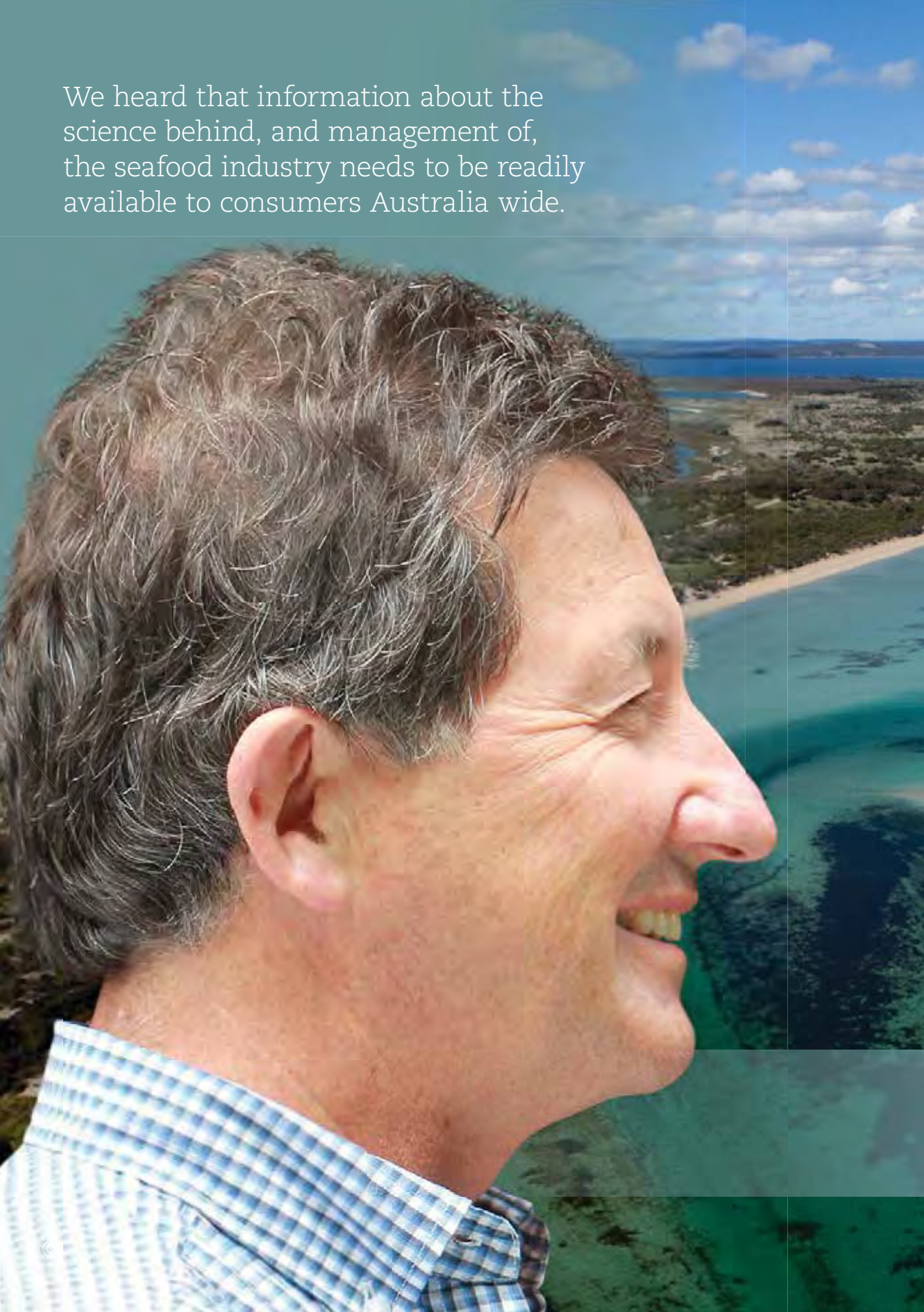
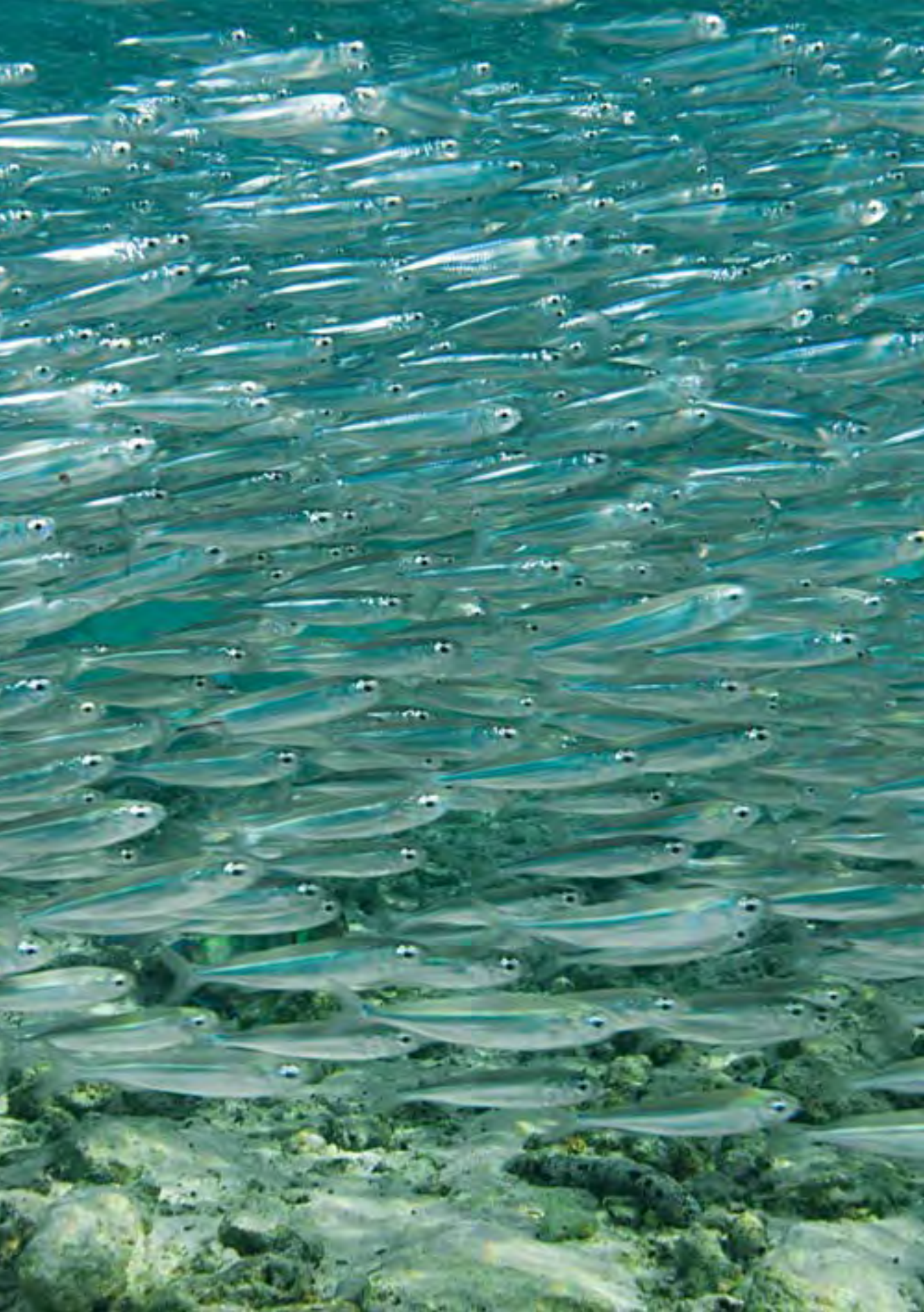


Report of Operations Part 1

The directors' review of operations and future prospects



The year in review

External environment—looking out

The operating year 2014–15 was both highly challenging and productive. It was a year in which the FRDC consulted and engaged heavily with stakeholders across Australia on marketing and to assist develop a range of strategic plans—most importantly the FRDC RD&E Plan.

At the macro level, Australia's signing of new free trade agreements with South Korea and China will have long-term benefits for our export-focused seafood producers in particular, following the four-year reduction of tariffs. In addition, the weakening Australian currency during the year saw a significant increase in the competitiveness of seafood exports and has improved the financial performance of a number of Australian fisheries. It has also led some fisheries to consider exporting as a feasible option—for example oyster growers.

Access to marine resources, and the allocation of these resources between user groups has seen robust debate, especially between commercial and recreational fishers. Three states have implemented fisheries reviews and reforms that will have lasting impacts on the commercial fishing industry. In addition, broader community debate about establishing marine parks in state and Commonwealth waters has seen commercial and recreational fishers combining forces to question continued access.

The Commonwealth government progressed the goal of transferring rights in the Torres Strait to the Indigenous community. Elsewhere, governments continue to formalise Indigenous fishing access.

Australian fisheries in general continue to lead the world in sustainable management practices. A focus on sustainability management efforts over the past two decades is now showing results with the small number of previously-troubled Australian fisheries and important marine species returning to stock levels not seen for a long time—some even approaching the threshold to be taken off environmental watch lists, for example Southern Bluefin Tuna whose stocks have doubled in the past decade. While the improvement of numbers in species such as whales, turtles, sharks and seals is pleasing it means there are increased opportunities for interactions with humans and fishing. Fisheries managers will be challenged to incorporate new strategies, practices and technologies to enable fishing to co-exist.

Aquaculture continued to expand around the country with Atlantic Salmon farming being the most conspicuous example, though other sectors like oysters, prawns and abalone are making significant production gains. However, the expansion comes with further community scrutiny as has been seen in the Senate enquiry into the finfish aquaculture industry in Tasmania.

Attention has been focused on a range of issues such as country-of-origin labelling and a review of research and development (R&D) levies. During the year, FRDC participated in at least four Parliamentary enquiries covering both Commonwealth and state jurisdictions.

National peak or representative organisations continue to struggle to be adequately resourced. This impacts on the ability of the various sectors to develop national policy and programs to take advantage of opportunities and address collective risks facing all seafood sectors.

Fisheries ministers meeting

On 10 December 2014, the Commonwealth Parliamentary Secretary to the Minister for Agriculture, Senator the Hon. Richard Colbeck, hosted the first fisheries ministers meeting in over a decade.

Ministers and senior officials from all Commonwealth, state and territory governments met to discuss a collaborative approach to the management of wild-catch commercial, recreational and Indigenous fisheries and aquaculture. The FRDC was invited to the meeting and asked to provide updates for eight of the 10 key RD&E issues and projects on the agenda.

The meeting provided an opportunity to strengthen relationships and ensure effective and coordinated management of Australia's fish stocks. A major focus was on the streamlining of regulations with the goal of reducing the fishing industry's compliance costs. A second meeting will be held in late 2015.

Small Pelagic Fishery

The FRDC has been working closely with the Expert Panel on a Declared Commercial Fishing Activity (Small Pelagic Fishery), the Department of Agriculture and the Australian Fisheries Management Authority to fund priority research to improve the knowledge base for key pelagic species across Australia. Research using the daily egg production method is now complete for both Jack Mackerel and Blue Mackerel with the results to be used in the management of these species.

The community and government have been closely scrutinising the operation of the Commonwealth Small Pelagic Fishery, as evidenced by the Report of the Second Expert Panel on a Declared Commercial Fishing Activity: Final (Small Pelagic Fishery) Declaration (No. 2) 2013; and the decision to allow the *Geelong Star* to start fishing.

During the year the FRDC also ran two technical workshops related to pelagic fisheries to identify best fisheries practice and management, and to look at options for reducing marine mammal interactions for small pelagic species.

Rural Research and Development for Profit—first round projects announced

The Federal Government announced, as a government election commitment, the Rural Research and Development for Profit program to boost funding to the rural research and development corporations (RDCs) and fund nationally coordinated, strategic research to deliver real outcomes for Australian producers.

The FRDC and its industry partners put forward a number of applications to the program. On 6 May 2015, the Minister for Agriculture announced the results of the first round of funding.

The FRDC was successful in obtaining $3 million from the program for a project: *Growing a profitable, innovative, collaborative Australian Yellowtail Kingfish aquaculture industry: bringing 'white' fish to the market*. The $6 million project, is a collaboration between FRDC, industry companies (Clean Seas and Indian Ocean Fresh), state fisheries agencies (South Australian Research and Development Institute and New South Wales Fisheries), and Challenger TAFE.

A steering committee was formed involving all partners to coordinate the research program centred on nutrition and feeds for Yellowtail Kingfish. The overall aim is to reduce the feed conversion ratio and subsequently the cost of production. Specifically the project will focus on: feeds and improving diet formulation (nutrition), improved feeding strategies to increase profit (feeding strategies) and improved nutritional health to boost productivity (health).

Development of a National Marine Science Plan

A new National Marine Science Plan was developed over the course of the year. The Plan draws together the knowledge and experience of more than 23 marine research organisations, universities and government departments and more than 500 scientists.

The Plan identifies seven critical challenges facing Australia and provides recommendations about how, in a coordinated way, marine science can support Australia in meeting those challenges. The FRDC was a principal driver for the development of the food security challenge. The Plan's recommendations are:

1. Create an explicit focus on the 'blue economy' throughout the marine science system.
2. Establish and support a National Marine Baselines and Long-term Monitoring Program, to develop a comprehensive assessment of our estate, and to help manage Commonwealth and State Marine Reserves.
3. Facilitate coordinated national studies on marine system processes and resilience to enable understanding of development and climate change impacts on our marine estate.
4. Create a National Oceanographic Modelling System to supply the accurate, detailed knowledge and predictions of ocean state that defence, industry and government need.
5. Develop a dedicated and coordinated science program to support decision making by policy makers and the marine industry.
6. Sustain and expand the Integrated Marine Observing System to support critical climate change and coastal systems research, including coverage of key estuarine systems.
7. Develop marine science research training that is more quantitative, cross-disciplinary and congruent with the needs of industry and government.
8. Fund national research vessels for full use.

For further information—www.marinescience.net.au

The plan was launched by the Hon. Ian Macfarlane MP, Minister for Industry and Science at Parliament House on 11 August 2015 with more than 100 key marine science stakeholders present.

Inquiry into R&D levies in the agricultural sector

On 2 September 2014, the Senate referred the existing arrangements for agricultural sector R&D levies to the Rural and Regional Affairs and Transport References Committee for inquiry and reporting by 24 November 2014. Following extensive consultation the Committee completed its review and tabled its report on 30 June 2015.

The inquiry has the potential to impact on the FRDC's operations should the recommendations be endorsed by Government.

Northern Australia Cooperative Research Centre

On 18 June 2015, the Australian Government released the Developing Northern Australia White Paper. As part of this commitment the government will be providing $75 million to establish a cooperative research centre (CRC) for developing northern Australia.

In a lead up to this decision, the FRDC and a number of other organisations progressed discussions on how the fishing and aquaculture industry should be involved in this CRC.

The CRC goal is to 'deliver high impact research that will lower investment barriers enabling significant capital to flow to agricultural development in the north'; and delivered through four research programs:

1. Transformative economic investments.
2. Sustainable water and land management.
3. Technologies for agriculture/aquaculture.
4. Development policies and regional change.

Following the announcement the FRDC has reaffirmed its commitment to be part of the development of the new Northern Australia CRC along with its industry partners

Seafood CRC legacy

The Seafood CRC agreement with the Australian Government ended on the 30 June 2015. The FRDC has been working closely with the Seafood CRC and its participants to ensure the legacy of their investments endures, and continues to deliver benefits to end users.

The FRDC worked with the Seafood CRC to transition activities and uncompleted projects for ongoing management to the FRDC.

The Seafood CRC Company will formally cease during the 2015–16 financial year after completing the required finalisation of finances and corporate responsibilities, especially reporting to Australian Government.

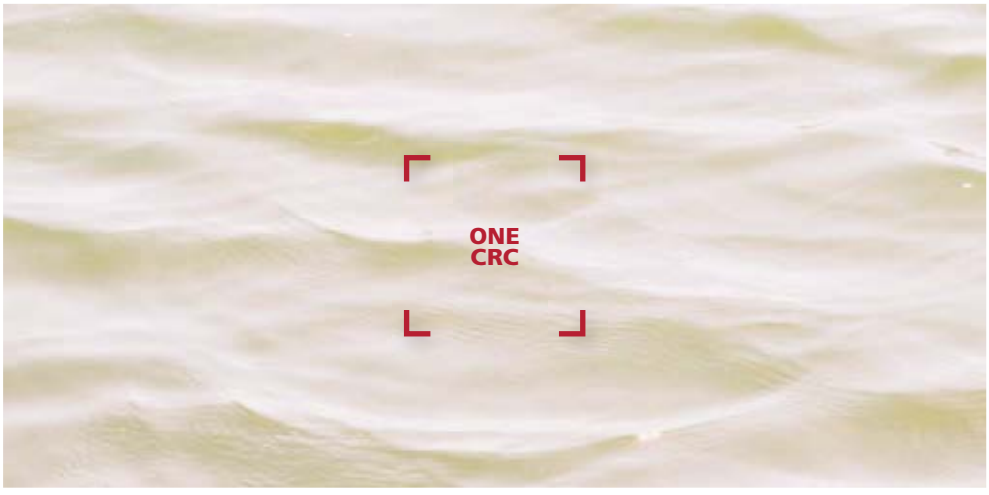
The FRDC has been the largest investor in the Seafood CRC contributing around $31 million over the last eight years of operation. This means for most of the projects completed, the FRDC contributed around 71 cents in every dollar.

During its life, the Seafood CRC produced many outputs and outcomes (see page 53 for more details), some of these included:

- Conducting over 540 projects which provided many technical solutions to industry problems.
- Having 67 graduate students complete their higher degrees through the CRC, with more than half the students already being employed in the seafood industry.
- Helping prawn farmers and fishers work together to develop and implement the Love Australian Prawns® market development strategy which delivered industry cohesion and increased the value of Australian prawns sold on the domestic market.
- Investigating in detail 10 seafood supply chains from across Australia leading to improved efficiency and profitability and a reduction in waste.
- Establishing the SafeFish Advisory Committee to provide consolidated technical advice and risk assessments to support Australia's seafood safety standards and market access negotiations. This group made significant advances including gaining international agreement on more efficient testing using mouse bioassay techniques.

Throughout the life of the Seafood CRC there was a strong collaborative relationship with FRDC. The FRDC will continue to drive Seafood CRC legacy activities, and will retain copies of all Seafood CRC materials to ensure that they can be extended and adopted for use.

A full report of operations is available from www.seafoodcrc.com.au.



The year in review

Internal environment—looking in

FRDC Board changes

It was with great sadness that the Board farewelled director David Thomason who passed away in November 2014.

Interviews for FRDC directors were undertaken in June 2015 overseen by a panel headed by presiding officer Professor Glenn Hurry. A shortlist of potential Board members was provided for selection and approval to the Minister for Agriculture and the Parliamentary Secretary. See significant events after 30 June 2015 (page 16) for details of appointments.

Commonwealth funding agreement

On 28 May 2015, Senator the Hon. Richard Colbeck, Parliamentary Secretary to the Minister for Agriculture, wrote to the FRDC advising that he had signed the 2015–19 funding agreement which had been negotiated between FRDC and the Department of Agriculture.

The agreement sets out the expectation for FRDC performance, transparency and accountability to stakeholders, the government and the community. It defines and governs key aspects of the relationship between the FRDC and the Department of Agriculture. The agreement is part of a more consistent framework supporting the government's relationship with all rural RDCs, both statutory and industry owned.

Ministerial direction

The funding agreement now incorporates, directions previously outlined in a letter from former Minister for Resources, the Hon. David Beddall, under subsection 143(1) of the *Primary Industries Research and Development Act 1989* (PIRD Act). These directions required the FRDC to spend funds raised from a particular fishery on projects relevant to that fishery sector or state/territory and to consult through the relevant industry sectors in that state or territory.

Request to relocate FRDC outside Canberra

On 12 May 2015, the Minister for Agriculture, the Hon. Barnaby Joyce wrote to the FRDC requesting that it consider relocation of its office and staff to a regional base and, if possible, co-locate with a regional university. He also requested that the FRDC consult with its industry representatives to gain their views.

The Board commenced stakeholder consultation and a rigorous due diligence process to inform a decision in the 2015/16 year.

Strategic direction for FRDC

The Board reviewed the FRDC's enterprise strategy and organisational design, including its Fisheries Research Advisory Bodies (FRABs) in 2014–15. It is anticipated significant changes will flow from these reviews and following further stakeholder consultation. Both reviews aimed to improve the efficiency and effectiveness of the delivery of services, and to best structure staff and resource needs.

FRDC's RD&E Plan 2015–20

The FRDC's Research, Development and Extension Plan 2015–20 reached its final stages of review before being submitted for approval by the Parliamentary Secretary Senator the Hon. Richard Colbeck. See also significant events after 30 June 2015 (page 16) for further details.

The Plan was developed through a comprehensive process of assessment of the operating environment for fishing and aquaculture, consultation, analysis and stakeholder engagement.

This process identified three national priorities that will be the focus of FRDC's investment under the new Plan:

- Ensuring that Australian fishing and aquaculture products are sustainable and acknowledged to be so.
- Improving productivity and profitability of fishing and aquaculture.
- Developing new and emerging aquaculture growth opportunities. This means concentrating on outcomes that will have a greater impact on the future of fishing and aquaculture in Australia.

This process has also helped FRDC to develop new approaches to implement the Plan:

- **Lead**: FRDC will allocate a significant portion of the Australian Government's public-good funding it receives and take the lead in priority setting for RD&E with a national focus.
- **Collaborate**: FRDC will provide mechanisms and incentives for those under partnership agreements to leverage their funding where there is alignment with priorities at the national level.
- **Partner**: There will be greater responsibility given to the end users of RD&E to set priorities under partnership agreements for both sectors and jurisdictions. Funding for this RD&E comes from industry contributions, the matching contribution from the Australian Government, and some additional funding from the jurisdictions.

The FRDC will develop and maintain partnerships with various fishing and aquaculture sectors and jurisdictions, encouraging them to take a major role in developing RD&E priorities. It is expected that sector, jurisdictional and national RD&E priorities will interact and mutually contribute to their achievements.

Developing the FRDC's marketing function

The *Rural Research and Development Legislation Amendment Bill 2013* was passed by Parliament on 12 December 2013. It gave the FRDC the power to undertake marketing activities. The FRDC has focused on consulting and engaging with industry to understand what they want in relation to marketing—either at a sector or national level.

The FRDC will use industry views to inform its future direction with respect to marketing. A key focus will be to assist those sectors wanting to move towards a statutory marketing levy and the development of infrastructure that can be used and applied to all sectors—such as mapping supply chains, acquiring market data and market research to better understand consumers. More information on marketing is on page 98 and http://seafoodmarketing.frdc.com.au/

The Public Governance, Performance and Accountability Act

As of 1 July 2014, the *Public Governance, Performance and Accountability Act 2013* (PGPA Act) replaced the *Commonwealth Authorities and Companies Act 1997*. The PGPA Act introduces a number of new performance-related tasks. Key changes for the FRDC include:

- The FRDC is now a 'corporate Commonwealth entity'.
- As a corporate Commonwealth entity, the FRDC Board is the 'accountable authority'.
- An employee of the FRDC (Commonwealth entity) is now an 'official'.
- The Act requires an 'accountable authority' to prepare several specific documents.
  - Budget estimates (covering four years),
  - Annual report (covering one year, plus trends),
  - Financial statements (covering one year, plus previous year),
  - Performance statements (covering one year), and
  - Corporate plan (covering four years)—noting FRDC is exempt from this requirement on the basis that it prepares an RD&E plan and an annual operational plan.

Annual performance statements are seen as a way to balance financial performance information. This is a new task that will require a measuring and assessment process, just as is required for financial information.

Regional fisheries management organisations memberships

During the 2014–15 Australian Government budget process, the FRDC was advised that the costs of Australia's membership of the following regional fisheries organisations would be funded from the existing FRDC budget:

- Commission for the Conservation of Southern Bluefin Tuna.
- Indian Ocean Tuna Commission.
- Western and Central Pacific Fisheries Commission.
- Southern Indian Ocean Fisheries Agreement.
- South Pacific Regional Fisheries Management Organisation.
- Network of Aquaculture Centres in the Asia-Pacific.

In October 2014, amendments to the PIRD Act were tabled in the House of Representatives to enact this government decision. The Bill was subsequently the subject of a Senate inquiry and is yet to pass both houses of parliament.

Should the amendment to the PIRD Act pass into law, the FRDC will need to provide $1,146,000 for these memberships in 2014–15.

Aquatic Animal Health Subprogram review

A review was completed of the FRDC Aquatic Animal Health Subprogram in 2014–15. The review found that the subprogram is working effectively and recommended a number of minor changes.

Australian Fish Names Standard

The FRDC is an accredited Standards Development Organisation and is responsible for the management and maintenance of the Australian Fish Names Standard (AS 5300). Following a significant review and update of the standard, the FRDC published the new version in May 2015. This revised version incorporates all new and amended fish names approved by the Fish Names Committee.

Thank you

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

The Board thanks its four representative organisations for their continued strong support. The FRDC is also dependent on the support of numerous other bodies and agencies for its success, these include:

- industry councils (including recreational),
- Commonwealth state and territory fisheries management and research agencies,
- Fisheries Research Advisory Bodies,
- FRDC subprogram and coordination leaders and their committees,
- Seafood CRC, and
- the many researchers who work on FRDC projects.

The dedication and passion that the FRDC staff provides is critical to the Corporation's success for which the Board is very thankful.

The Board welcomes feedback and invites you to contact any director and let them know your thoughts after reading this annual report.

Significant events after 30 June 2015

On 2 September 2015, the Hon. Barnaby Joyce MP, Minister for Agriculture and Senator the Hon. Richard Colbeck, Parliamentary Secretary to the Minister, announced new directors for the FRDC. The new directors appointed from 1 September 2015 until 31 August 2018 are:

- Dr Renata Brooks: Chair of Queensland Government's Biosecurity Capabilities Review,
- Professor Colin Buxton: Adjunct Professor, University of Tasmania and Co-Chair Bioregional Advisory Panels, Department of the Environment,
- Mr John Harrison: Chief Executive Officer of the Western Australian Fishing Industry Association,
- Dr Lesley MacLeod: Chief Executive Officer of Dairy Innovation Australia and Board member for Murray Dairy Inc.,
- Professor Daryl McPhee: Associate Dean, Bond University,
- Mr John Susman: Managing Director and owner of Fishheads Seafood Strategy.

The FRDC's Research, Development and Extension Plan 2015–20 was approved by the Parliamentary Secretary Senator the Hon. Richard Colbeck and was launched on 16 September 2015.

Priorities for 2015–16

The FRDC undertook a comprehensive process of assessing the operating environment for fishing and aquaculture, consultation, analysis and consideration in developing its five-year RD&E Plan 2015–20.

Consultation has included the Parliamentary Secretary to the Minister for Agriculture, the Department of Agriculture, those involved in aquaculture, commercial fishers, Indigenous fishers, recreational fishers, research providers, post-harvest processors and fisheries managers from federal, state and territory governments. As part of the process the following areas were identified as key priorities for focus. These priorities were also taken into consideration and added to the FRDC annual operational plan.

Public perception and social licence

The public perception of fishing and aquaculture affects all sectors, both commercially in terms of selling produce and also in terms of access to the resource. Fishing and aquaculture in Australia has a history of improved stewardship and a focus on best practice.

Environmental health

The health of the environment on which fishing and aquaculture rely are not only impacted by fishing and aquaculture sectors but also by environmental change, other industries and development. Marine waters are becoming crowded with more shipping, expanding oil and gas industries and increased coastal development. All of these demands impact on the marine environment and must be considered in the science and management of fishing and aquaculture activities.

Food security, globalisation and market access

Seafood is an important dietary component throughout the world. Aquaculture production shows potential for further productivity increases, both in species currently produced and those that are new and emerging. Bycatch and discards present a potential avenue for increasing the harvest by adding value to the caught product. Likewise wider use of under-valued species and adding value to processing waste presents the potential for increasing seafood availability.

Resource access and allocation

The people and enterprises that catch and grow fish and other seafood products need long-term access to aquatic resources to meet their individual and sectoral needs. However, competition is increasing from within fishing and aquaculture sectors, from external sources, and from the reduction of fishable zones through legislation of marine protected areas. The 'space' for fishing and aquaculture, especially within the marine environment, is becoming very crowded.

Resource management

The focus within natural resources management has changed from single issues (target stocks or generally isolated environmental concerns) to broader interactions between the environment, economy and communities across all sectors of fishing and aquaculture. This is in line with the current expectations of the Australian public and best practice.

Aquatic animal health

Disease-causing organisms, including exotic, new and emerging pathogens, are a significant threat to Australian fisheries, aquaculture and their associated ecosystems. The risk is expected to rise with increased globalisation and impacts from changing environments.

People development and capacity building

All sectors of the Australian fishing and aquaculture industry need strong, effective, connected leadership to respond well to the challenges and opportunities before them.

Technological advancements

The pace of technological change across the world is expected to continue. New technology is being used in many more sectors and industries improving efficiencies and effectiveness.

Marketing

The FRDC has put in place resources, policies and mechanisms to carefully consult with stakeholders how they might benefit from FRDC undertaking marketing activities if requested. This consultation will include how to establish industry funding mechanisms for national and sector-based marketing.

Forecast annual operational plan budget 2015–16

REVENUE	$	$
Total revenues from the Australian Government		
Australian Government 0.5% AGVP	12,698,000	
Matching of industry contributions	6,350,000	
Total revenues from the Australian Government		19,048,000
Contributions revenue from the jurisdictions		7,796,000
Projects revenue from other parties		1,000,000
Other revenue		226,000
Marketing and promotion *		500,000
TOTAL REVENUE		28,070,000
EXPENDITURE		
Projects expenditure		
Environment	9,751,000	
Industry	9,309,000	
Communities	465,000	
People	2,301,000	
Adoption	1,862,000	
Sub-total		23,688,000
Marketing expenditure *		460,000*
Management and accountability		3,947,000
TOTAL EXPENDITURE		27,661,000
NET RESULT FOR THE YEAR		39,165

AGVP: average gross value of Australian fisheries production

* If marketing levies are established.

The Corporation

FRDC's vision

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

The planned outcome for the Corporation

Increased knowledge that fosters sustainable economic, environmental and social benefits for the Australian fishing industry; including Indigenous, recreational, commercial and aquaculture sectors, and the community; through investing in research, development and adoption.

FRDC's role

The FRDC's role is to plan and invest in fisheries RD&E activities in Australia. As a national organisation with strong linkages to industry, managers and researchers it has a fundamental role to provide leadership and coordination.

Stakeholders

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

Portfolio minister

The portfolio Minister for Agriculture is the Hon. Barnaby Joyce MP. The Parliamentary Secretary to the Minister for Agriculture is Senator the Hon. Richard Colbeck.

Representative organisations

The FRDC has four ministerially declared representative organisations.

- National Seafood Industry Alliance (representing the seafood industry),
- Australian Recreational and Sport Fishing Industry Confederation Inc., trading as Recfish Australia (representing recreational and sport fishers),
- Commonwealth Fisheries Association (representing commercial fishers who operate in Commonwealth fisheries),
- National Aquaculture Council (representing the aquaculture industry).

FRDC's people during 2014–15

FRDC Board	
The Hon. Harry Woods	Chair
Ms Heather Brayford	Director
Ms Renata Brooks	Director
Dr Bruce Mapstone	Director
Mr Brett McCallum	Director
Dr Peter O'Brien	Director
David Thomason *	Director
Dr Patrick Hone	Executive Director

* Passed away November 2014.

FRDC staff	
Mr John Wilson	Business Development Manager
Ms Cheryl Cole	Manager Corporate Services
Ms Jessica Swan	Office Administrator
Ms Irene Stefanou (part time)	Office Administrator
Mr Crispian Ashby	Programs Manager
Ms Annette Lyons	Projects Manager—Finance
Dr Carolyn Stewardson	Projects Manager—Research
Ms Jo-Anne Ruscoe	Projects Manager—Research
Mr Joshua Fielding	Projects Manager—Research
Ms Tanya Corcoran (part time)	Quality Manager
Mr Peter Horvat	Manager—Communications, Trade and Marketing
Ms Julie Haldane	Communications Officer
Ms Ilaria Catizone (part time)	Communications Science Writer
Ms Kalya Cho (part time)	Communications (IT) Assistant

Pictured above, the FRDC Board, from left: Bruce Mapstone, Harry Woods, Renata Brooks, Patrick Hone, Heather Brayford, Brett McCallum and Peter O'Brien.

Staffing

The FRDC is governed by a board of directors (see page 121) appointed for their expertise and is led by an executive director who manages the day-to-day operations of the organisation through a small team.

In 2014–15, the FRDC operated with 12.7 full-time-equivalent (15 people). The FRDC staff are the Corporation's most important resource, and a key factor in the ongoing success of the organisation. In addition to the core staff, the FRDC partners with over 100 organisations annually who employ around 200 principal investigators on FRDC research projects, and many more researchers, communicators and technicians—not to mention the numerous industry people who work on projects.

During the year, Joshua Fielding joined the FRDC to help put together two strategic planning documents; the FRDC's RD&E Plan 2015–20 and the National Fishing and Aquaculture RD&E Strategy 2015–20. This process includes facilitating consultations with FRDC's stakeholder groups to ensure that these documents capture the strategic directions of all those involved in RD&E for fishing and aquaculture.

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

Equal employment opportunity

The FRDC has a policy of equal employment opportunity. Merit-based principles are applied in recruitment and promotion to ensure discrimination does not occur. As at 30 June 2015, of the FRDC's staff of 12.7 full time-equivalent (15 people), five are male and 10 are female.

Industrial democracy

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

Disabilities

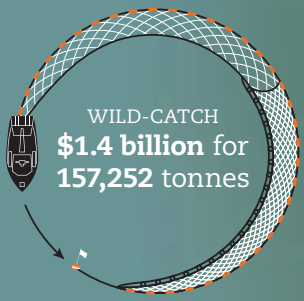
The FRDC's employment policies and procedures align with the *Disability Discrimination Act 1992* in the broader context of the National Disability Strategy 2010–2020. The FRDC's recruitment and staff development practices seek to eliminate disadvantage that may be contributed to by disabilities. Consultation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

Behaviour

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

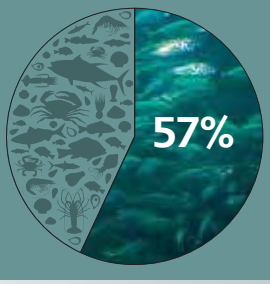
The Australian fishing industry

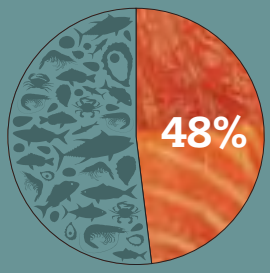
RESULTS 2012–13



OVERALL
$2.4 billion for
233,119 tonnes

The wild-catch sector earned more and caught slightly less.
The aquaculture sector earned less and produced slightly less.
The overall value of production increased but the volume was less.





$1.2 billion

Australian fisheries products export earnings (edible and non-edible) was $1.2 billion.

The wild-catch sector contributed 57 per cent of the gross value of Australian fisheries and aquaculture production in 2012–13. Salmonids accounted for 48 per cent of the total value of Australian aquaculture production and 21 per cent of the total value of fisheries and aquaculture production.

TOP 5

TOP FIVE EXPORT VALUE AND DESTINATION, 2012–13

Species	Value	Destination	Value
Rock lobster	$447 million	Hong Kong	$371 million
Abalone	$186 million	Vietnam	$294 million
Tuna	$163 million	Japan	$269 million
Pearls *	$151 million	China	$48 million
Prawns	$52 million	United States	$39 million

* Includes items temporarily exported and re-imported.

TOP 5

TOP FIVE PRODUCTION BY VOLUME AND VALUE IN 2012–13

Species	Volume	Species	Value
Salmonids	42,978 tonnes	Salmonids	$497 million
Australian sardine	38,437 tonnes	Rock lobster	$451 million
Prawns	21,145 tonnes	Prawns	$277 million
Oyster	12,530 tonnes	Abalone	$190 million
Tuna	11,376 tonnes	Tuna	$177 million

Relationships with stakeholders

On 31 April and 1 May 2015, the FRDC ran its annual stakeholder workshop in Canberra to discuss a number of issues including the new RD&E Plan 2015–20, the National Fishing and Aquaculture RD&E Strategy, a review of the expression-of-interest approach to the annual competitive funding round, and the development of a new extension and adoption strategy.

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

FRDC's stakeholders include:

- Commonwealth, state and territory governments, including fisheries and natural resources managers,
- all fishing and aquaculture sectors,
- the Australian community, on whose behalf aquatic natural resources are managed,
- seafood consumers,
- the research community, including universities, government fisheries organisations, further education organisations (e.g. TAFE), international research organisations and private-sector research providers,
- four ministerially declared representative organisations to which FRDC is accountable under legislation:
  - National Seafood Industry Alliance (representing the seafood industry),
  - Australian Recreational and Sport Fishing Industry Confederation Inc., trading as Recfish Australia (representing recreational and sport fishers),
  - Commonwealth Fisheries Association (representing commercial fishers who operate in Commonwealth fisheries),
  - National Aquaculture Council (representing the aquaculture industry).

FRDC regularly engages with its stakeholders through a range of mechanisms including:

- the Governance Committee that supports the National Fishing and Aquaculture RD&E Strategy and the National Research Providers Network which represents fisheries researchers (FRDC is a member of both groups).
- Fisheries Research Advisory Bodies (FRABs).
- partnerships between FRDC, industry sectors and jurisdictions.
- the Australian Fisheries Management Forum, representing government agencies responsible for fisheries management (FRDC is an observer).
- FRDC subprograms and coordination programs.

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

The FRDC works with its stakeholders and partners to only undertake program management in an effective manner, and to disseminate the results and assist with their adoption, including when appropriate, commercialisation. Over the course of the year, the FRDC will continue to collaborate and work with its stakeholders and partners.

Fisheries Research Advisory Bodies (FRABs)

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

The FRABs represent the fishing industry, fisheries managers and researchers; and most also have environmental and other community interest representation.

Australian Government

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

Australian Fisheries Management Forum

The Australian Fisheries Management Forum (AFMF) is attended by the heads/chief executives of the Commonwealth, state and territory government agencies responsible for the management of fisheries. The AFMF discusses issues relating to fisheries and aquaculture management.

The FRDC understands that adoption of research outputs by management agencies is a key to optimising management outcomes. It will continue to work with AFMF, participating as an invited representative to its meetings, providing advice and ensuring AFMF priorities are incorporated into planning processes.

Consultation with representative organisations

The FRDC has four representative organisations with which it consulted during 2014–15.

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

Under section 6.6 of the FRDC's funding agreement, the FRDC may meet travel and other expenses incurred in connection with consultation between the FRDC and each of its representative organisations. The FRDC aims to meet with these organisations at least twice a year. They often combine their visit to meet with other Canberra-based government agencies. While the FRDC budgeted up to $30,000 to facilitate consultation in 2014–15, payments are only made to reimburse costs when they are associated with this consultation.

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

Consultation with levy organisations—Australian Prawn Farmers Association

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

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

Year	2012–13	2013–14	2014–15	2015–16
APFA contribution	$127,232	$148,956	$189,250	$190,000*
FRDC expenditure on projects	$230,582	$157,576	$150,294	$190,000*

* Approximate investment in coming year.

Sector industry bodies

The FRDC has continued its close relationship with seafood industry sectors and members. Industry partnership agreements (IPAs) are a growing part of the FRDC's business because they provide individual sectors with greater certainty of long-term investment against their RD&E plans.

The FRDC will develop and maintain partnerships with various fishing and aquaculture sectors and jurisdictions, encouraging them to take a major role in developing RD&E priorities. It is expected that sector, jurisdictional and national RD&E priorities will interact and contribute to the achievements of one another. To facilitate this the FRDC has entered into IPAs with the following sectors:

- Abalone Council of Australia,
- Australian Abalone Growers Association,
- Australian Barramundi Farmers Association,
- Australian Prawn Farmers Association,
- Australian Southern Bluefin Tuna Industry Association,
- Oysters Australia,
- Pearl Consortium,
- Southern Rocklobster,
- Tasmanian Salmonid Growers Association,
- Western Rocklobster.

The FRDC is currently negotiating a new IPA with the Australian Council of Prawn Fisheries.

Rural research and development corporations

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

Research partners

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

- fishing and aquaculture industry,
- Department of Agriculture,
- Australian Fisheries Management Authority,
- state/territory fisheries research centres,
- Commonwealth Scientific and Industrial Research Organisation (CSIRO),
- universities,
- cooperative research centres (CRCs),
- other rural RDCs and companies,
- industry groups,
- co-investors from the private sector.

National Primary Industries Research, Development and Extension Framework

The Australian, state and Northern Territory governments, rural RDCs, CSIRO, and universities jointly developed the National Primary Industries Research, Development and Extension Framework to encourage greater collaboration and promote continuous improvement in the investment of RD&E resources nationally. The Agricultural Senior Officials Committee (AGSOC) has oversight for the National Framework.

Under the Framework are 14 sector strategies and eight cross-sector strategies. Implementation of these strategies is overseen by AGSOC's Research and Innovation Committee. *Working Together: The National Fishing and Aquaculture RD&E Strategy* was endorsed by Primary Industries Ministers on 23 April 2010 (see http://www.npirdef.org/). Implementation of the Fishing and Aquaculture RD&E Strategy has been led by the Strategy Governance Committee, and supported through a Research Providers Network.

Development of the National Fishing and Aquaculture RD&E Strategy 2015–20

The National Fishing and Aquaculture RD&E Strategy was established in 2010 and was anticipated to run for five years. The Strategy provided direction to improve the focus, efficiency and effectiveness of RD&E to support Australia's fishing and aquaculture industry. Development of a new Strategy started in 2014.

Working with all stakeholders, the FRDC (as chair and secretariat) and the Governance Committee is participating in the review and revision of the RD&E Strategy. The next iteration will build on the platform established by the first Strategy and provide a nationally agreed, common vision for the industry over the next five years, guiding the investment of millions of dollars of state and national research funding.

The Governance Committee and associated Research Providers Network remain committed to a strategy that identifies major researchers and supports researchers for the various types of R&D to ensure a coordinated and collaborative approach is in place for fishing and aquaculture RD&E nationally.

A major planning workshop with key stakeholders was run in July 2014 with further meetings and stakeholder consultation occurring over the last half of 2014.

The Governance Committee has also finalised the Strategy 'goals', each with a number of priority areas. The goals are:

- Australia's fisheries and aquaculture sectors are managed, and acknowledged to be, ecologically sustainable.
- Security of access to, and allocation of, fishing and aquaculture resources is improved.
- Benefits and value from fisheries and aquaculture resources are maximised.
- Governance and regulatory systems are streamlined.
- Health of habitats and environments upon which fisheries and aquaculture rely are maintained.
- Management of aquatic animal health is improved.

The Fishing and Aquaculture RD&E Strategy was presented to the Research and Innovation Committee in August 2015. It is expected that sign off from parties and partners and launch of the Strategy will occur in late 2015.

RD&E capability audit and assessment for the Australian fishing and aquaculture industry (2013-410-DLD)

This report provides an analysis of the RD&E effort supporting Australia's fishing and aquaculture industries in 2013. Since the release of *Working Together: The National Fishing and Aquaculture RD&E Strategy* in 2009, the FRDC and the Strategy Governance Committee considered that significant changes have occurred in national RD&E capability, especially within state government agencies. The FRDC commissioned RDS Partners to repeat the RD&E capability audit in 2013, to provide Australia's agencies investing in RD&E with an understanding of current RD&E capability, capacity and future demand.

As in the 2009 RD&E capability audit, data was collected through voluntary return and one-to-one follow-up. Of the 108 organisations or individuals invited to participate in the 2013 capability audit, 56 provided a response and 51 of these provided capability information. Comparison between years focuses largely on the 32 organisations that responded in both 2009 and 2013.

A small increase in the number of full-time-equivalent (FTE) researchers was reported across these organisations. Overall, there was a relatively large increase in FTEs in the fisheries, aquaculture and post-harvest capability areas and a large decrease in the number of FTEs in the communication/extension, environment and ecosystems capability area.

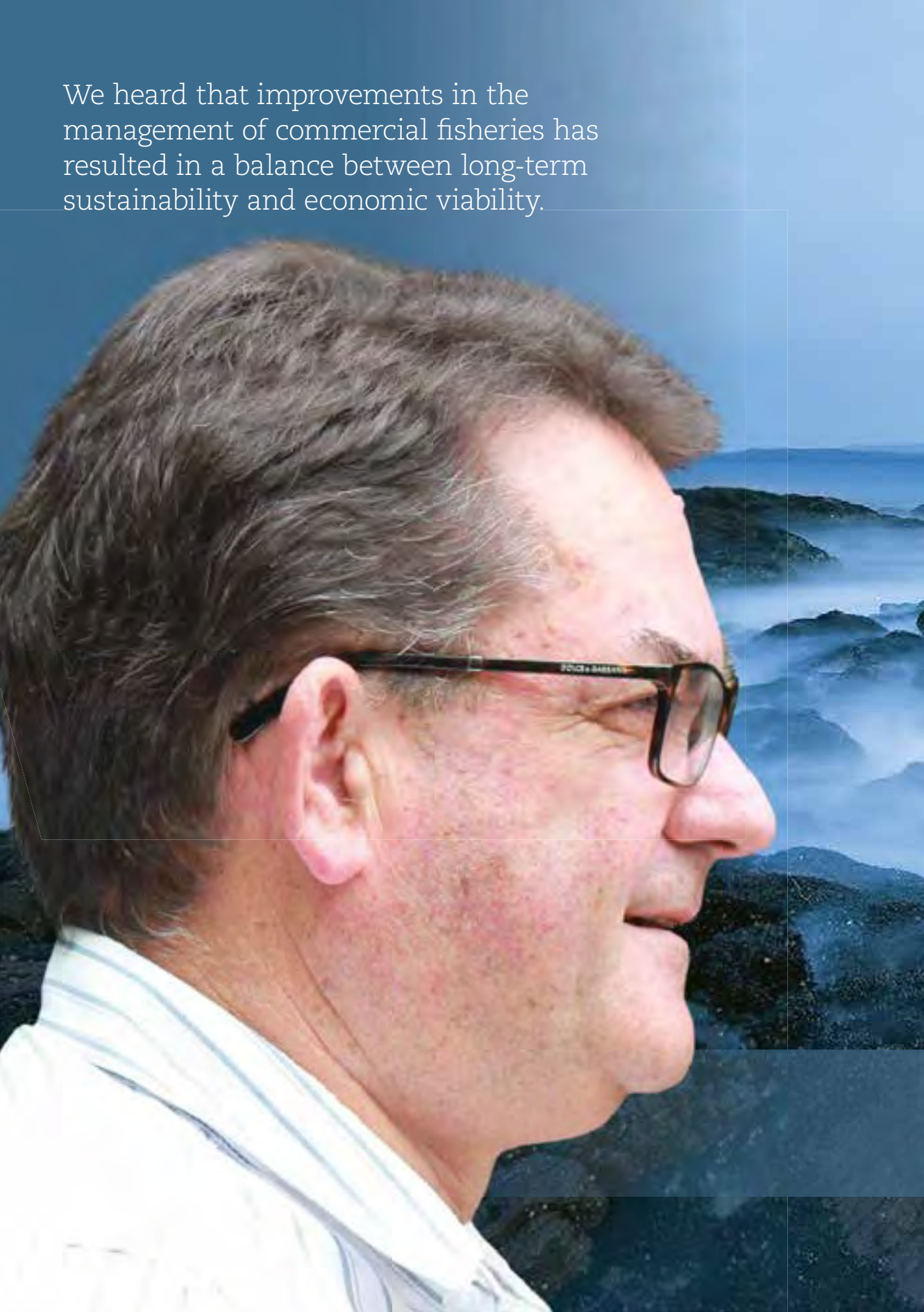
For further information: Tom Lewis, 03 6231 9033, tom.lewis@rdspartners.com.au

2014 Australian Fishing and Aquaculture Overview

This report provides an analysis of the current operating environment for fishing and aquaculture in Australia, including identification of the challenges and opportunities that face each of the sectors. This input helps in the development of the priority areas for RD&E over the coming five-year period. Outputs from this report also helped the FRDC to develop its five-year strategic RD&E Plan.

For further information: Ewan Colquhoun, ewan@ridgepartners.com.au

We heard that improvements in the management of commercial fisheries has resulted in a balance between long-term sustainability and economic viability.



Report of Operations Part 2

The FRDC's operational results

Aligning RD&E priorities

The FRDC takes great care in aligning priorities throughout all its corporate documentation. The object of the PIRD Act provides the structural basis on which the FRDC outcome statement is formed.

The five-year RD&E Plan aligns its program areas to the objectives—environment, industry, people, accountability and governance. The annual operational plan aligns closely with the RD&E Plan. It provides the vehicle to fine tune priorities based on stakeholder needs identified during the year.

The FRDC annual report completes the cycle by reporting key achievements for the year based on its structure and core program areas.

Investment strategy

The FRDC invests in RD&E across the whole value chain of the commercial fishing and aquaculture industry, and is also for the benefit of both Indigenous and recreational fishers. The FRDC seeks to achieve maximum leverage from its investment by providing research administration and services to projects using a value-adding model. This process provides input during the development and assessment phase to ensure each project delivers a specific outcome, and is actively managed and monitored.

The reason for running the value-adding model, instead of a simple 'granting' model for R&D funding (carried out at minimal cost), is that the returns are significantly better. This is because more time is spent ensuring the design and implementation of each project is correct and aligns with the desired outcomes of stakeholders. The FRDC manages the implementation of the value-adding model through its ongoing investment in systems that deliver best practice in project development management and assessment (see below on FRABs), integrated project, financial and human resource management.

The FRDC invests in RD&E through a variety of flexible approaches. These include:

- an open call for project applications,
- formal partnership agreements with industry sectors,
- subprograms and coordination programs that address cross-sector needs at a national level,
- short-term tactical research investment,
- specifically targeted commissioned RD&E, especially where there is market failure by private investment.

Fisheries Research Advisory Bodies (FRABs)

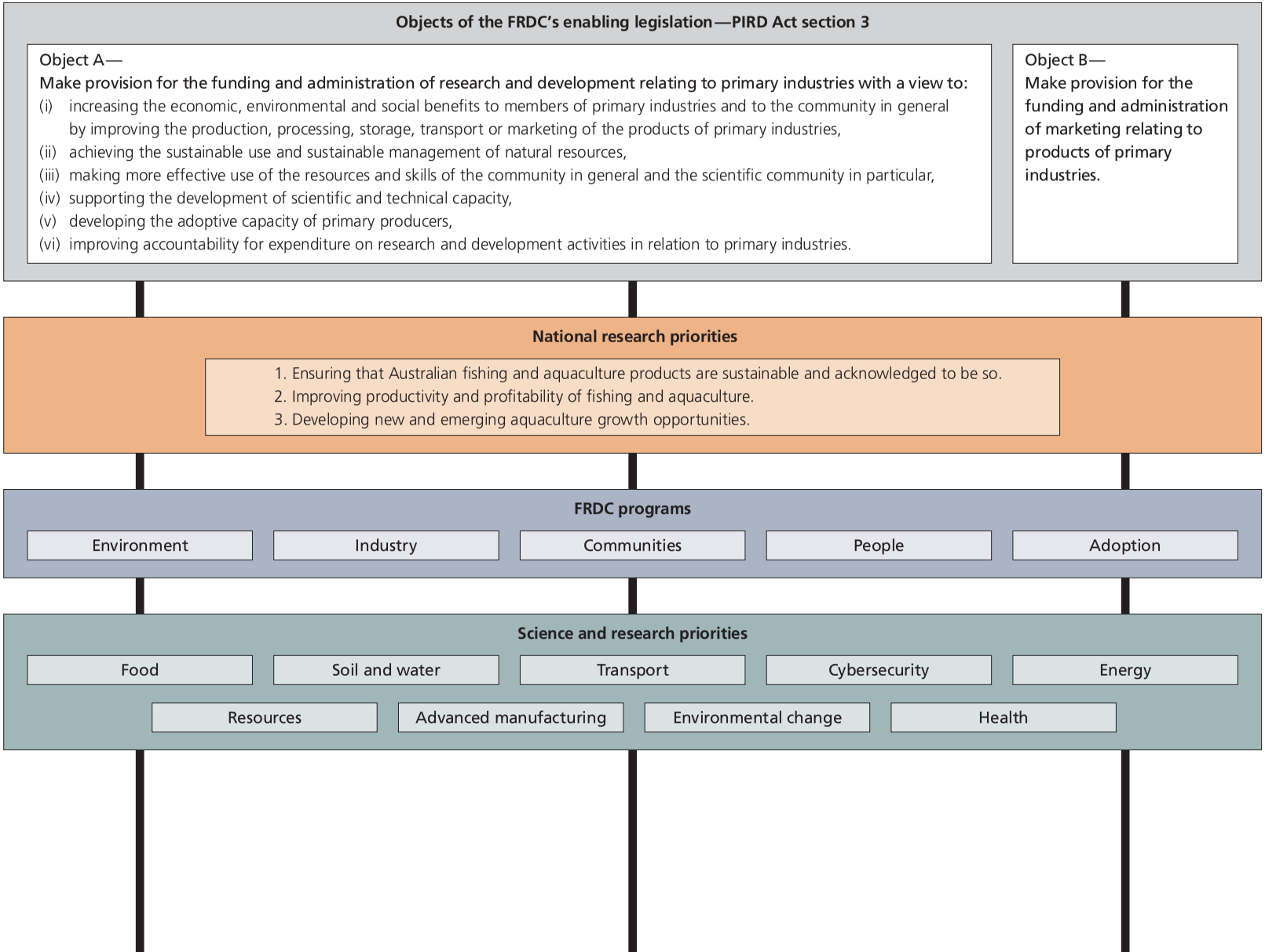
The FRDC supports a network of FRABs covering Commonwealth fisheries and the fisheries of each state and the Northern Territory. The FRABs have an extremely important role in maximising the efficiency of the FRDC's planning and investment processes. In the 2014–15 annual competitive funding round all open call applications were submitted through, or reviewed by, the FRABs. The FRABs also played a role providing advice on tactical research und projects that related to their jurisdiction.

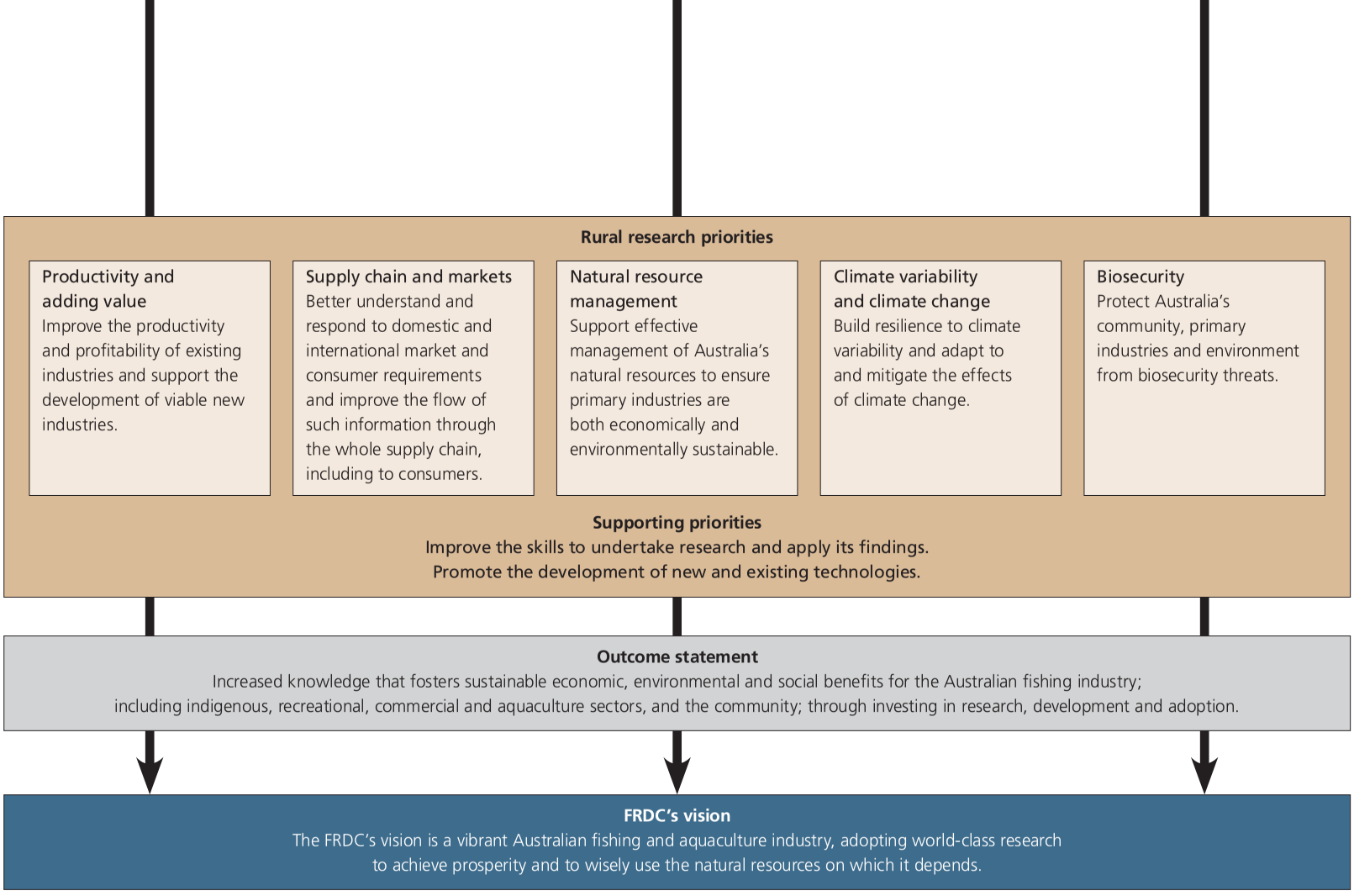
The FRABs represent all sectors of the fishing industry, fisheries managers and researchers, and almost all include environmental and other community interests. Their chairs in 2014–15 were as follows.

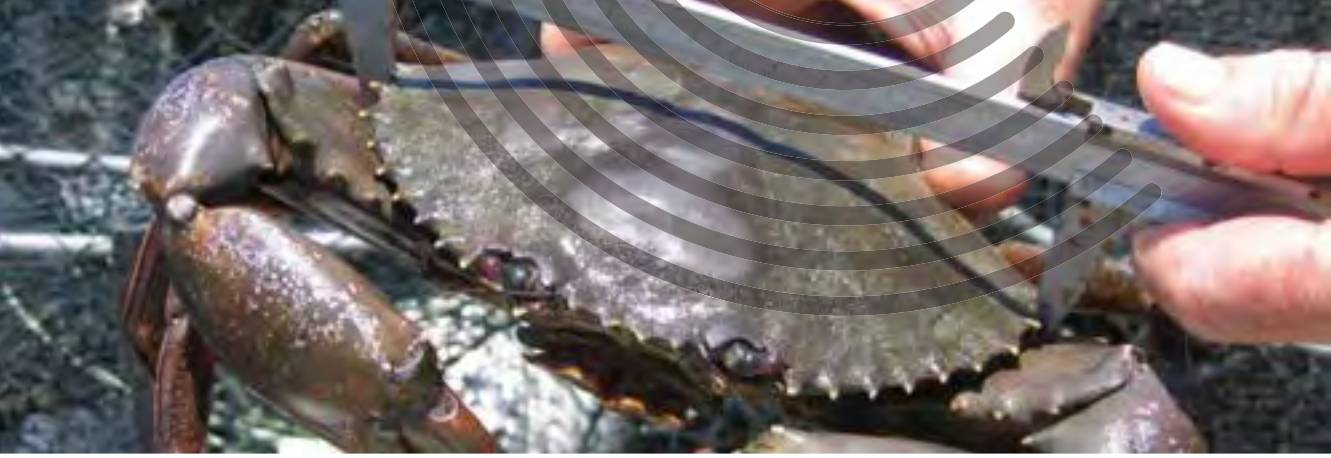
Commonwealth	Ian Cartwright	South Australia	Rory McEwan
New South Wales	Peter Dundas-Smith	Tasmania	Ian Cartwright
Northern Territory	Andria Handley	Victoria	Peter Rankin
Queensland	James Fogarty	Western Australia	John Harrison

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

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




Rural research priorities
Productivity and adding value
Improve the productivity and profitability of existing industries and support the development of viable new industries.
Supply chain and markets
Better understand and respond to domestic and international market and consumer requirements and improve the flow of such information through the whole supply chain, including to consumers.
Natural resource management
Support effective management of Australia's natural resources to ensure primary industries are both economically and environmentally sustainable.
Climate variability and climate change
Build resilience to climate variability and adapt to and mitigate the effects of climate change.
Biosecurity
Protect Australia's community, primary industries and environment from biosecurity threats.
Supporting priorities
Improve the skills to undertake research and apply its findings.
Promote the development of new and existing technologies.
Outcome statement
Increased knowledge that fosters sustainable economic, environmental and social benefits for the Australian fishing industry; including indigenous, recreational, commercial and aquaculture sectors, and the community; through investing in research, development and adoption.
FRDC's vision
The FRDC's vision is a vibrant Australian fishing and aquaculture industry, adopting world-class research to achieve prosperity and to wisely use the natural resources on which it depends.



Assessing the benefits of FRDC RD&E

The FRDC has undertaken and completed an economic evaluation of a statistical sample of nine randomly selected clusters of FRDC investment across three programs and has found that the average return to FRDC investment is 2.6 to 1. The nine cluster analyses and subsequent reports were prepared by Agtrans Research (economics consultants and strategic policy advisors) and are available from the FRDC website—www.frdc.com.au.

The analysis is part of the Council of Rural Research and Development Corporations' work to collaboratively implement a framework of benefit-cost analysis (BCA) to evaluate research and development activities undertaken.

The FRDC's RD&E Plan 2010–15 divides investment into 14 themes. The FRDC has set a target of assessing and evaluating in economic terms all its projects in a revolving program over a five-year period which began in March 2011.

The first population of projects was defined in January 2011 and projects were placed into each of the 14 themes. Some of the themes had far more projects than others and those themes with high numbers of projects were divided into two or more clusters. In all, 25 clusters were defined across the 14 themes.

TABLE 3: FRDC R&D PROGRAMS AND THEMES

Program	Theme
Environment	1. Biosecurity and aquatic animal health
	2. Habitat and ecosystem protection
	3. Climate change
	4. Ecologically sustainable development
Industry	5. Governance and regulatory systems
	6. Resource access and allocation
	7. Production, growth and profitability
	8. Consumers, products and markets
	9. Value from aquatic resources
Communities	10. Resilient and supportive communities
People development	11. Leadership development
	12. Workforce development
	13. Innovation skills
Extension and adoption	14. Extension and adoption

Evaluation of the first eight clusters was completed in October 2012.

In the subsequent 18-month period from July 2013 to December 2014, a further nine clusters were subjected to impact assessment and were completed. The impact assessments all used the same BCA to estimate investment criteria for each cluster of projects.

The nine clusters evaluated in this round of assessment were:

- one cluster from theme 1: Biosecurity and aquatic animal health,
- one cluster from theme 4: Ecologically sustainable development,
- one cluster from theme 5: Governance and regulatory systems,
- one cluster from theme 6: Resource access and allocation,
- four clusters from theme 7: Production, growth and profitability,
- one cluster from theme 8: Consumers, products and markets.

Clusters comprised between seven and 50 projects. Information on the individual projects in the cluster were used to build a cluster profile. This was achieved largely through accessing the FRDC database and contact with principal investigators of projects, government agencies (in particular fisheries managers) and industry stakeholders.

The value of total funding for each of the nine clusters (FRDC plus other investment) ranged from $3.7 million to $44.2 million, with a total value for all clusters of $137.4 million (in nominal dollar terms).

The majority of the benefits identified from the nine clusters (202 projects in total) were primarily economic in nature, although significant numbers of environmental and social/community benefits also were identified. The major beneficiary of the impacts of the nine clusters of research investment has been the fishing industry (51 per cent, with 43 per cent of the identified number of benefits being public in nature and 6 per cent to overseas interests. The results demonstrate the significant spillovers of benefits to the public sector from research targeted at the fishing industry. However there were insignificant spillover benefits identified for other Australian industries.

Benefits were estimated over 30 years from the final year of investment in the research. Benefits and costs were expressed in 2013/14 dollar terms, and discounted to 2013/14 using a discount rate of 5 per cent.

The net present values for total investment for the individual clusters ranged from $6 million to $124 million and the benefit-cost ratios ranged from 1.8 : 1 to 3.9 : 1. FRDC investment in individual clusters ranged from $4 million to $60 million.

When all nine clusters are aggregated, the benefit resulting from the $266.5 million investment was calculated to be 2.6:1. This equates to a value to the seafood industry and Australian public of $684 million.

More details on five of the benefit-cost analysis undertaken as part of the second round of assessments can be found on pages 48, 61, 72, 80 and 92.

SCIENCE FOR SUSTAINABILITY

PROGRAM 1: ENVIRONMENT

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

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

Principal inputs

During 2014–15, there was $10.44 million (about 42 per cent of the total R&D investment) invested in R&D activities within this program.

Summary of performance indicators for Program 1

Strategic challenges	Performance indicators	Targets	Achievements
Biosecurity and aquatic animal health	Development and dissemination of protocols, techniques and technologies to mitigate and minimise the impact of disease outbreaks. Development of knowledge to assist industry to register vaccines and veterinary chemicals.	Establishment of Atlantic Salmon health centre. One project to develop positive control materials for exotic pathogens.	**Achieved**: Atlantic Salmon health centre funded and established. Officially opened by Tasmanian Minister for Fisheries the Hon. Jeremy Rockliff on 13 August 2015.
Habitat and ecosystem protection	Demonstrate improved sustainability performance from the use of RD&E outputs. Development of innovative technologies to reduce fishery take and interaction with bycatch and with threatened, endangered and protected species.	One project to develop techniques to mitigate whale interactions with fishing gear. One project to assess interaction of fishing gear in the Southern Ocean benthos.	**Achieved**: Whale mitigation project completed (see page 87). **Achieved**: Project demersal fishing interactions with marine benthos in the Australian exclusive economic zone of the Southern Ocean: An assessment of the vulnerability of benthic habitats to impact by demersal gears completed.
Climate change	Improvement in understanding of the impacts of climate change that leads to adaptation by fisheries management and industry. Development of mitigation methods to reduce greenhouse gas emissions of industry.	Report on completion of Fishing and Aquaculture Climate Change Program.	**Achieved**: Climate change program completed, with final report submitted.
Ecologically sustainable development	Development of mechanisms and technologies to collect economic, environmental and social data to inform management processes. Improvement in knowledge of the relationship between environmental processes and known biological processes. Development of techniques for incorporation of ecosystem-based fisheries management in fisheries. Development of knowledge to help the industry to meet environmental standards.	Pilot project to assess potential for reporting on social economic and environmental parameters for individual fisheries. Second Status of Key Australian Fish Stocks Reports completed.	**Achieved**: Social indicators project completed. Project examined a range of fisheries documenting and testing a range of indicators. **Achieved**: Second Status of Key Australian Fish Stocks Reports completed and launched by Senator the Hon. Richard Colbeck, Parliamentary Secretary to the Minister for Agriculture on 10 December 2014.

Reporting in relation to the EPBC Act

Section 516A requires annual reports for Commonwealth entities to report against the criteria set out in the section of the Act. The section requires the FRDC to outline how it impacts on the environment through its activities. FRDC's annual report covers its two primary functions—its internal operations and footprint and the external projects is funds.

FRDC internal operations

Mechanisms for reviewing and improving performance are incorporated in the FRDC's ISO-certified quality management system, which provides a structure for continual improvement that permeates all management processes. The FRDC manages the process through its Management and accountability program. The FRDC aims to, wherever possible, minimise and negate its environmental impacts.

RD&E project management

The FRDC identifies RD&E needs, and the means of addressing them, through a planning process and by entering project agreements with research providers; because it does not undertake research itself. Management of fisheries R&D involves reporting against economic, environmental and/or social outcomes—at a strategic level through this annual report and in more detail in the final reports for projects.

As part of the assessment and contracting for projects, the FRDC looks at a range of factors including their environmental impacts; and ensures that appropriate approvals are in place and are obtained. The FRDC project agreement sets out a range of obligations to ensure that not only the FRDC meets its obligations, but researchers working on FRDC-funded projects also adhere to that high standard. Not only does the agreement requires researchers to comply with relevant legislation, such as the EPBC Act, it requires where a project involves changes to the natural environment, or can have an effect on the natural environment that the researchers must ensure all necessary permits or licences are obtained from the relevant state, territory or Commonwealth authority. In addition where an interaction (death or serious injury) occurs with a threatened, endangered or protected species the FRDC must be notified within 10 days.

Large components of the RD&E undertaken by the FRDC focus on providing information that will assist these agencies improve the sustainable use of Australia's aquatic resources. The projects outlined on the following pages highlight the diversity and excellence of the FRDC's current research portfolio. For a full listing of projects funded visit the FRDC website—www.frdc.com.au

Stock status update

Status of Key Australian Fish Stocks Reports 2014 and beyond (Project number 2014/030)

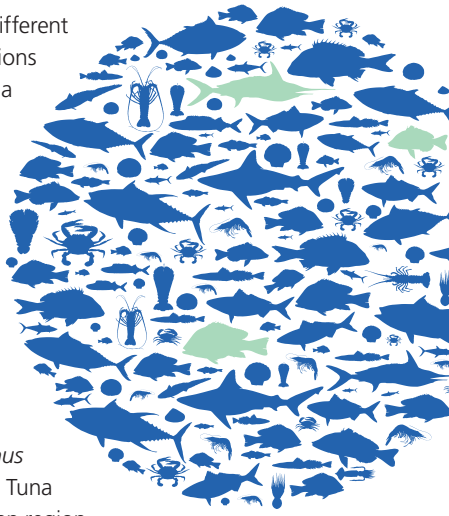
The second edition of *Status of Key Australian Fish Stocks Reports*, released in December 2014, includes 19 new species in addition to the original list of 49 species formally assessed as part of a comprehensive national fisheries reporting system.

The 19 additions mean the reports now encompass 85 per cent of Australia's wild-catch fisheries by volume, or about 118,700 tonnes of 139,700 tonnes in 2012–13. This represents 90 per cent of the value of Australia's wild-catch fisheries.

The reports reflected well on the status of Australian fisheries overall. The long-term aim is to ensure that Australian fisheries are synonymous with sustainability, and that management is based on sound science.

'Sustainability', as used in the reports, relates to the biological sustainability of a stock—rather than referring to broader ecosystem, economic or social viability. Information is also based on biological fish stocks, rather than management jurisdictions, wherever possible.

Assessment results



Of the 68 species or species groups reported on, there were 238 different assessments of stock undertaken, incorporating single populations assessed in multiple jurisdictions, or multiple populations within a single management jurisdiction.

The results show that 129 fish stocks (87.5 per cent of catch by volume) are being fished sustainably, with seven stocks in recovery. There were 19 stocks in decline and 11 identified as overfished.

'Overfished' does not mean a species is in danger, but new management strategies may be required to help the stock recover or, if adequate management is already in place, more time may be required for measures to take effect.

The 11 overfished stocks include Southern Bluefin Tuna (*Thunnus maccoyii*), of which there is only a single global stock, and Bigeye Tuna (*T. obesus*), of which there is a single stock within the Pacific Ocean region.

These stocks are fished by many countries, including Australia, and Australia is part of international management efforts to rebuild the populations of these species. Locally specific stocks of School Shark (*Galeorhinus galeus*), Gemfish (*Rexea solandri*), two stocks of Greenlip Abalone (*Haliotis laevigata*), two stocks of Blacklip Abalone (*H. rubra*), Mulloway (*Argyrosomus hololepidotus*), Golden Snapper (*Lutjanus johnii*) and Black Jewfish (*Protonibea diacanthus*) were also identified as overfished.

Environmental impacts

A new assessment category was introduced to the current report—'environmentally limited'. This identifies stocks affected by environmental factors, such as a marine heatwave or disease, rather than by fishing. This applies to two species—Saucer Scallops and Blue Swimmer Crabs (*Portunus armatus*) (four stocks) impacted by a marine heatwave in Western Australia. There are also 68 stocks for which there are management plans in place, but there is not enough data to provide a confident assessment.

Identifying problem areas allows fisheries managers and fishers to respond to the issues, and gives consumers and the community confidence in Australian fisheries.

More than 100 leading fisheries researchers have been involved in developing the stock status reports as a scientifically robust, simple tool for fishers, fisheries managers, seafood consumers and the public alike to understand the status of the key wild-capture fish stocks around Australia.

As well as identifying how stocks are travelling, the reports include summaries of how numbers were determined, along with information on catch trends, fishing methods and management. There is information on environmental issues and links to key references for interested people to delve into the science and fisheries.

Future editions are expected to increase the number of species considered and broaden the information provided, although it is unlikely to include all of the 600 species commercially fished (from the 4500 known species) in Australian waters. Later editions may also include formal classifications for broader fishery-level issues such as ecological impacts, economic performance, management performance and social good.

The reports were initiated by the FRDC and the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES).

The reports have been produced in collaboration with: government fisheries research agencies in all Australian jurisdictions; the Institute for Marine and Antarctic Studies, Tasmania; the New South Wales Department of Primary Industries; the Department of Fisheries, Western Australia; the Department of Primary Industry and Fisheries, Northern Territory; the Victorian Department of Environment and Primary Industries; the Department of Primary Industries and Regions, South Australia; the South Australian Research and Development Institute; the Queensland Department of Agriculture and Fisheries; and CSIRO.

The second edition of the reports represents another step towards greater transparency and consistency of fisheries reporting across Australia.

For further information: www.fish.gov.au

Jungle Perch go wild

Developing Jungle Perch fingerling production to improve fishing opportunities (Project number 2012/213)

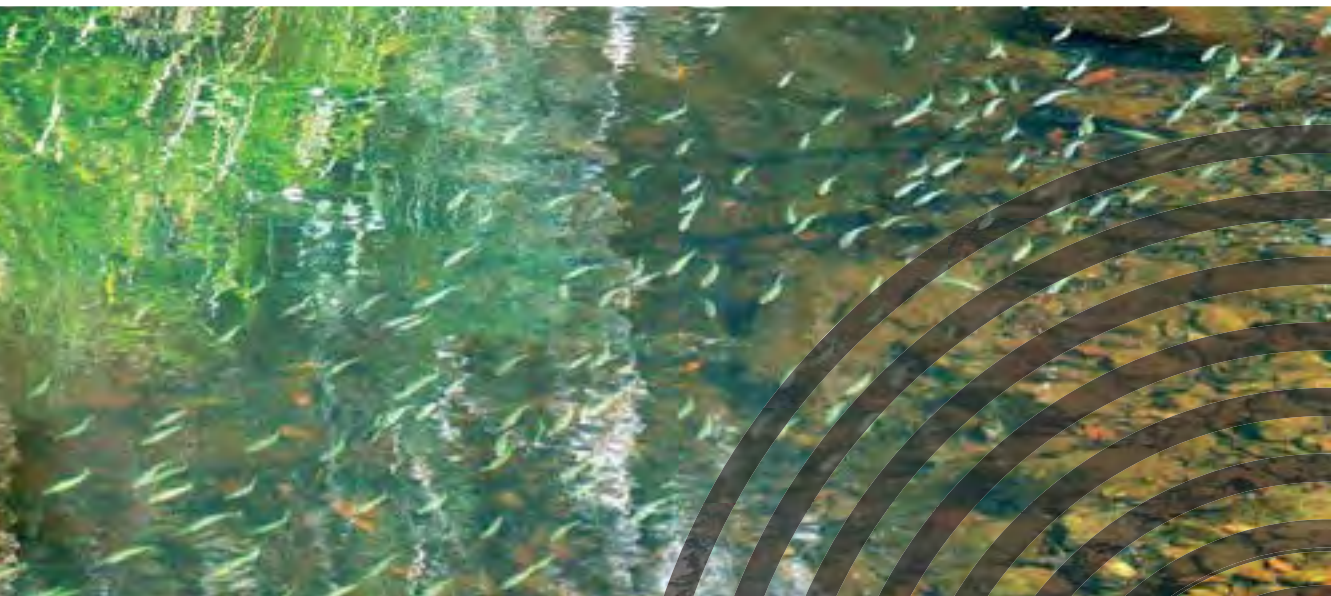
The recovery of Jungle Perch populations in central and south-east Queensland is one step closer following the first ever release of captive bred fingerlings into local streams.

Once a popular fish for anglers, Jungle Perch (*Kuhlia rupestris*) has been in decline for more than 30 years, and wild populations are largely limited to a few areas in northern Queensland. New research has helped breed the species in captivity and is evaluating the potential to rebuild populations in Queensland through a restocking program.

Jungle Perch can grow to more than 50 centimetres in length and weigh more than three kilograms. They readily take flies and lures and are usually targeted for catch-and-release fishing, which has made them an easy and popular target for anglers.

The species was once found from Cape York down to northern New South Wales. However, in the 1950s and 1960s they began to decline, eventually disappearing altogether from most rivers and streams in the southern part of their range and from the Mackay–Whitsunday Island region.

Responding to this decline, three recreational fishing groups—the Freshwater Fishing and Stocking Association of Queensland, the Australian National Sportfishing Association and Sunfish—recognised the need for research to assess the feasibility of a captive breeding and release program to help restore local populations.



Breeding at Bribie Island

This prompted Queensland Department of Agriculture and Fisheries (DAF) researchers at the Bribie Island Research Centre to begin work on captive breeding of Jungle Perch. Preliminary research focused on verifying past distributions of the species, studying their breeding biology and running preliminary captive rearing trials.

In 2012, the FRDC co-funded a project with Queensland DAF to develop Jungle Perch fingerling production, with the aim of running stocking trials and developing a hatchery production manual. In 2014 more than 1000 fingerlings were successfully produced. Most of these were released into a Gold Coast hinterland stream which had an ideal habitat, with a smaller batch released into a stream near Mackay. These were the first successful stockings of captive-reared Jungle Perch.

At this stage, Jungle Perch are not an approved species for restocking in Queensland. Last year's fingerling release trials are an important step in assessing the costs and benefits of restocking as a management measure for the species.

Removing barriers

Barriers to fish migration, such as weirs, barrages and elevated culverts on rivers in the lower catchment, are a likely contributor to the decline of Jungle Perch and are thought to have disrupted their life cycle. While adult fish prefer to live in clear freshwater rivers and streams with bankside shading, they need to migrate to the ocean to spawn.

After spawning, adults return to fresh water. However, juvenile Jungle Perch first migrate into fresh water when they are 40 to 50 days old and about 18 millimetres in length. However, since the 1990s, many redundant structures have been removed from rivers and streams, and fishways have been installed on other barriers. Several catchment groups including the Mary River Catchment Coordinating Committee, South East Queensland Catchments and Reef Catchments have been restoring stream-side vegetation, the loss of which has also been identified as a cause of dwindling Jungle Perch numbers. Restoration has involved replanting vegetation and installing riparian fencing to exclude livestock.

Prior to release, the captive-reared Jungle Perch fingerlings were conditioned to recognise predators likely to occur at the release site. They were also conditioned to take invertebrate (insect and crustacean) foods similar to those they would encounter in the wild. This conditioning is expected to enhance their capacity to survive.

This is the first step towards Jungle Perch forming self-sustaining populations in the stream system. All the stocked fish have been micro-tagged and researchers are now monitoring their progress.

Life-cycle challenges

Jungle Perch larvae are difficult to rear in the early stages of development. The researchers determined that early-stage Jungle Perch larvae need to be reared on the larvae (nauplii) of a type of small planktonic crustacean (copepods) under bright light.

Researchers also discovered that Jungle Perch larvae must be reared in full seawater salinities and aeration of the water needs to be gentle during the early stages of rearing.

If the stocking trials are successful and cost-effective, Jungle Perch could ultimately become an approved species for large-scale stocking in Queensland. Over time, restocking and improved habitat management could help re-establish self-sustaining Jungle Perch populations in the streams where they previously occurred. This would benefit anglers and regional economies.

For further information: Michael Hutchison, 07 3400 2037,
michael.hutchison@daf.qld.gov.au

Diaries monitor recreational fisheries

New and innovative approaches to monitoring of small-scale recreational fisheries (Project number 2008/005)

This study provides confidence in research-angler diary (RAD) and general-angler diary (GAD) programs as innovative approaches to monitoring small-scale recreational fisheries. Both programs were found to be cost effective and scientifically robust if managed diligently and supported by the angling community, fishery managers and researchers as methods suitable for monitoring recreational fisheries.

RAD and GAD programs can foster greater stewardship and engagement of stakeholders in the collection of information needed for fisheries management and sustainable use of key fisheries resources in recreational fisheries. The RAD method provides for valid stock-performance indicators; the GAD method provides for valid fishery-performance indicators.

These innovative monitoring methods provide a basis for a consistent national approach to monitoring and to enhanced management of recreational fisheries. A guide ('toolkit') provides for the establishment of RAD and GAD programs to enhance the ability of government, industry, researchers and recreational fishers to apply angler-diary programs. A Queensland case study demonstrates how angler-diary programs could incorporate routine tag and release of fish for improved understanding of availability and movement of various size classes in a population among regions. Victoria's ongoing angler-diary programs won two prestigious awards as part of the 2011 World Environment Day Awards and media coverage resulting from the awards widely promoted the programs.

For further information: James Andrews, 03 5258 0232, james.andrews@depi.vic.gov.au

Urchin control

Rebuilding Ecosystem Resilience: Assessment of management options to minimise formation of 'barrens' habitat by the long-spined sea urchin (*Centrostephanus rodgersii*) in Tasmania (Project number 2007/045)

Tactical Research Fund: Trial of an industry implemented, spatially discrete eradication/control program for *Centrostephanus rodgersii* in Tasmania (Project number 2011/087)

Can commercial harvest of long-spined sea urchins reduce the impact of urchin grazing on abalone and lobster fisheries? (Project number 2013/026)

Since the establishment of the long-spined sea urchin, *Centrostephanus rodgersii*, in Tasmanian waters in the late 1970s, the sea urchin has spread down the east coast. In several areas along Tasmania's north-east coast they have created extensive 'barrens'—where shallow rocky reefs are stripped bare of seaweeds. Areas of incipient barrens (small patches of bare substrate) can now be found as far south as Tasman Island in the south-east.

In New South Wales, urchins have removed entire kelp beds and created bare, extensive barrens on half of the state's shallow (less than 40 metres) rocky reef habitat. Continued formation of urchin barrens on Tasmania's east coast poses the single largest ecological threat to the integrity of Tasmanian rocky reefs and their associated abalone and rock lobster fisheries.

The Institute for Marine and Antarctic Studies coordinated a recent workshop in Hobart to showcase research on, and discuss strategies to control the effects of overgrazing by, sea urchins on Tasmania's east coast. This included research from several FRDC-funded projects. Representatives from a number of stakeholder groups attended, spanning research, management, commercial and recreational fishing, and conservation sectors.

Research presentations centred around four main areas being considered for controlling the spread and impact of sea urchins in Tasmania: dedicated culling of sea urchins by commercial divers; culling of urchins by abalone divers as they fish for abalone; establishing a viable fishery for urchins; and enhancing population stocks of large Southern Rocklobsters (*Jasus edwardsii*), which are capable of predating emergent sea urchins on rocky reefs.

Commercial culling

Scenario one explored the feasibility of divers conducting targeted culls of sea urchins. A small-scale culling program is already in place in Victoria's Eastern Abalone Zone and has yielded promising results, with a significant recovery of kelp beds observed in areas subject to ongoing culling efforts (to about 15 metres depth).

The research concluded that dedicated culling provides a highly-effective method of protecting small areas of reef of high economic or commercial value, but that large-scale dedicated culling was not currently a feasible control option in Tasmania. It was also noted that culling by divers will be effective to about 15 metres, but dive time limits activity in deeper water.

Opportunistic culling

Scenario two examined the effectiveness of abalone divers opportunistically culling sea urchins as they harvest abalone. Cull rates and spatial coverage achieved by divers were quantified with the use of cameras and GPS loggers. Unsurprisingly, urchin cull rates declined as abalone catch increased and divers became increasingly preoccupied with fishing. As divers moved through an area, their collective efforts removed 7–10 per cent of the total urchin biomass. Although this has no detectable impact on urchin grazing at the 'reef' scale, at a smaller 'patch' scale (1–10 metres) this level of culling is effective in protecting small, targeted areas of reef.

Market demand

Scenario three explored the expansion and future development of an existing small-scale sea urchin fishery currently operating out of north-east Tasmania. Spatial targeting of this fishery to particular 'at risk' areas of reef may be an effective way to reduce the likelihood of further barrens forming.

This option is still in the early stages of exploration, but provides an exciting opportunity for economic and industry benefit while potentially helping to preserve the value of Tasmanian east-coast reefs.

A substantial increase in harvest would be needed to reduce urchin density to the level required to prevent destructive overgrazing. As with culling, this method would not protect reefs deeper than about 15 metres, due to diver limitations at greater depths.

Further research is required to determine the direct impacts of the fishery on urchin populations, but future development of the fishery may prove to be an effective option in shallow water, particularly if used in combination with other proposed control measures.

Natural predation

Scenario four presented the concept of using natural predation by large Southern Rocklobsters to help control sea urchin populations. This management scenario has been identified by large-scale field experiments and two independent ecosystem models as likely to be effective in limiting the risk of future barren formation. A recently implemented cap on rock lobster fishing on Tasmania's east coast is predicted to reduce the risk of new barren formation from 50 to 20 per cent.

However, both the field experiments and ecosystem models indicate that rehabilitation of existing extensive barrens by building the biomass of large rock lobsters is, at best, a long-term prospect, and even then is unlikely.

The workshop demonstrated, through a range of empirical, observational and modelling approaches, that preventing urchin barrens from forming in intact kelp beds was an achievable management challenge. The recent introduction of an east-coast rock lobster catch cap will assist in meeting that challenge. But recovering kelp beds once widespread barrens have formed would be a far more difficult and long-term task.

In Tasmania the ecological threat the urchins represent has been identified at a relatively early stage in the progression from intact kelp beds to widespread barren grounds. As a result, management has been able to be 'proactive' rather than 'reactive', which will greatly enhance the chances of success in restricting further loss of kelp beds on Tasmania's east coast. It is encouraging that the target biomass of rock lobsters to both minimise the risk of ongoing barren formation to an acceptable level and to achieve optimum economic yield in the fishery are essentially the same.

The problem of managing sea urchin grazing in eastern Tasmania is both complex and multifaceted. The participation and cooperation of all stakeholder groups is required to protect east-coast reefs from sea urchin grazing, and to protect the marine productivity and the social and economic benefits derived from the reefs.

For further information: Sean Tracey, 03 6227 7286, sean.tracey@utas.edu.au;
Craig Johnson, 03 6226 2582, craig.johnson@utas.edu.au;
Craig Mundy, 03 6227 7232, craig.mundy@utas.edu.au

National approach to harvest strategies

Development of a national harvest strategy framework (Project number 2010/061)

The National Guidelines to Develop Fishery Harvest Strategies outlined in this report provide a national framework to support a consistent and more harmonised approach to harvest strategy development across Australian fisheries jurisdictions. Harvest strategies offer an effective fisheries management tool to integrate the ecological, social and economic dimensions of fisheries management into a single framework for fisheries management decision making. As evidenced by their wide use internationally, and throughout Australian fisheries management jurisdictions, harvest strategies represent a best-practice approach to fisheries management decision making. The national guidelines aim to provide practical technical assistance to all government fisheries management agencies in Australia (state, territory and Commonwealth) to develop fishery-specific harvest strategies and to facilitate a consistent and more harmonised approach across fisheries throughout Australia.

The national guidelines aim to help inform policy makers involved in the development of overarching harvest strategy policies and assist in ensuring a national best-practice approach to the development of such policies. A national approach to harvest strategy development will enable common challenges to be addressed in a consistent and coordinated manner, thereby avoiding unnecessary duplication of effort and resources, and ensuring more targeted investment in ways to address common challenges.

For further information: Sean Sloan, 08 8226 8103, sean.sloan@sa.gov.au

Western Rocklobster larvae

Sustainability of the rock lobster resource in south-eastern Australia in a changing environment: Implications for assessment and management (Project number 2009/047)

This study delivered a new understanding of the mechanisms by which the open ocean, seaward of the continental shelf, controls the health of larval rock lobsters. This will support improved predictions of the links between environmental changes and strength of the fishery. The results of this project provided several new potential predictors that modellers can use to forecast the strength of a fishery. These are highly testable and, because they are based on mechanistic oceanography, they are likely to provide a major improvement over previous work, particularly when generic correlations fail.

For further information: Anya Waite, University of Western Australia, 08 6288 3082

BCA THEME 1

An economic analysis of FRDC's investment in Theme 1: Abalone, Yellowtail Kingfish and oysters (pearls and edible)

Background

The Environment program (Program 1) in the FRDC's RD&E Plan 2010–15 has four themes:

- Theme 1: Biosecurity and animal health
- Theme 2: Habitat and ecosystem protection
- Theme 3: Climate change
- Theme 4: Ecologically sustainable development

The objective of Theme 1 is to develop the capability, systems, knowledge and technologies to detect and identify pathogens to mitigate their impact on aquatic animals, ecosystems, profitability and viability.

Abalone, Yellowtail Kingfish (YTK) and oysters represent significant value in the Australian fisheries industry. Wild production and aquaculture combined had a gross value of production of $178.3 million in 2010/11 (ABARES, 2012). Oyster production is among the largest five species in terms of volume totalling 13,951 tonnes during 2010/11 (ABARES, 2012).

In recent years, abalone and oysters particularly have been plagued by disease outbreaks associated with high mortality rates. In 2004/05, oyster production in the Hawkesbury River was significantly affected by an outbreak of QX disease. An outbreak of oyster oedema disease occurred in 2006 affecting pearl oysters and Pacific Oyster mortality syndrome was detected in New South Wales in late 2010. Similarly in late 2005, abalone viral ganglioneurities, a herpes-like abalone virus, spread through the Victorian abalone industry, causing mortalities through farmed and wild-catch populations. The virus was also detected in seafood processing facilities in Tasmania during 2011 (NSW Department of Primary Industries, 2012a).

Within the Environment program is Theme 1, Biosecurity and animal health. This analysis includes a cluster of investments made as part of Theme 1 in the abalone, YTK and oyster industries from 2002 through to 2011. Benefits from this cluster predominantly stem from preventing, managing and containing disease, in addition to generally increasing the understanding of health of the species. The benefits can be translated to increases in yield (or avoiding yield loss), decreases in production costs from better managing disease and animal health, and increasing the general sustainability of wildstock through minimising the spread of disease. The cluster contains seven projects relevant to abalone, three pearl oyster projects, two meat oyster projects and one project relevant to YTK.

Summary of projects

There are 13 projects in the Theme 1: Abalone, YTK and oysters cluster.

Project no.	Project title	Total ($)
2002/200	Abalone Aquaculture Subprogram: Preventing summer mortality of abalone in aquaculture systems by understanding interactions between nutrition and water temperature	104,340
2002/201	Abalone Aquaculture Subprogram: A national survey of diseases of commercially exploited abalone species to support trade and translocation issues and the development of health surveillance programs	214,113
2003/220	Innovative Solutions for Aquaculture: Potential for parasite interactions between wild and farmed kingfish, discrimination of farmed and wild fish and assessment of migratory behaviour	200,265
2004/080	Aquatic Animal Health Subprogram: Development of a national translocation policy using abalone and prawns as templates for other aquatic species	24,391
2004/084	Aquatic Animal Health Subprogram: Investigating and managing the Perkinsus related mortality of blacklip abalone in New South Wales, phase 1	85,103
2004/086	Aquatic Animal Health Subprogram: Identification and distribution of an intracellular ciliate in pearl oysters	110,984
2004/233	Abalone Aquaculture Subprogram: Investigating the immunology of stressed abalone (*Haliotis* spp.)	61,647
2005/074	Management of bioeroding sponges in wild stocks of *Pinctada maxima* in Western Australia	726,409
2005/076	QX resistant oyster challenge trial 2005–06	10,000
2006/062	Aquatic Animal Health Subprogram: Identification of host interactions in the life cycle of QX disease	88,874
2006/064	Aquatic Animal Health Subprogram: Development of diagnostic tests to assess the impact of Haplosporidium infections in pearl oysters	76,452
2006/243	Aquatic Animal Health Subprogram: Development of management strategies for herpes-like virus infection of abalone	62,980
2007/006	Aquatic Animal Health Subprogram: Development of molecular diagnostic procedures for the detection and identification of herpes-like virus of abalone (*Haliotis* spp.)	344,133
		2,109,691

Source: FRDC project management database.

Public versus private benefits

Both private and public benefits will arise from the investment. On the basis of the distribution of the eight benefits to Australia, and equal weighting for each benefit, it could be concluded that public benefits to Australia could make up 38 per cent of the total benefits. If the subjective weightings are taken into account, the public benefits would still make up about 27 per cent of the total benefits.

Distribution of benefits along the supply chain

The direct beneficiaries of the projects are likely to be producers mainly through diagnosis and prevention of disease and subsequent avoided production losses. However some of the benefits accruing to producers are likely to be captured along the supply chain including by consumers.

Benefits to other industries

It is unlikely that benefits will accrue to industries beyond the fisheries industry.

Benefits overseas

Outputs from some of the projects have been used in overseas research. Overseas producers and consumers may therefore benefit from technical and scientific capacity created from the investments.

Observations for future investment and evaluation

Observations for future investment and evaluation include:

1. It would be of value to economic assessments such as this if industry information on disease costs, including treatment, mortality, and productivity losses could be monitored more comprehensively over time. As well as aiding evaluation of past research, such information may be useful in priority setting for future research investment. Also, as aquaculture industries are growing in importance, it would be helpful to evaluation if representative gross margin budgets could be compiled for the various aquaculture industries.
2. Some difficulties were found in contacting relevant personnel to verify impacts of selected projects. This created time lags in completing evaluations and lessened the degree of confidence in assumptions.

The number of projects in the cluster that contribute to the two Theme 1 key performance indicators (KPIs) is shown below.

KPI	Description	No. of projects
1	Development and dissemination of protocols, techniques and technologies to mitigate and minimise the impact of disease outbreaks	13
2	Development of knowledge to assist industry to register vaccines and veterinary chemicals	0

Conclusions

In general the outputs from projects were not always immediately usable, however significant scientific capacity and industry preparedness have been built by many of the projects. In some respects this has made for difficulties in quantifying benefits from the cluster, due to various assumptions that would have to be made regarding future disease incursions and difficulties in linking projects with impacts.

Of the 13 projects within this cluster, seven were relevant to abalone, three to pearl oysters, two to meat oysters and one was relevant to YTK. Although the cluster included multiple species, abalone projects largely dominated the cluster in number of projects. To gain coverage across the different species it was necessary to evaluate some projects (such as the only one applicable to YTK) almost individually. The species are also vastly different in terms of production and the diseases affecting them, so this did not allow for easy grouping for the purposes of quantification of benefits.

The principal benefits from the cluster largely focused on attempting to avoid yield losses through protocols, diagnostic techniques and increased understanding of disease and general health. Three impacts were valued from the investment in this group of projects. A majority of the benefits stemmed from the investments were from the abalone projects, contributing to 93 per cent of the total benefits valued. Some benefits were not quantified due to difficulty in valuing or linking impacts to the project. For this reason the resulting investment criteria could be viewed as conservative. Also, there was considerable industry and scientific capacity built for future disease management initiatives but only a part of this was valued.

Total funding from all sources for the 13 projects in the cluster totalled $7.80 million (present value terms). This investment was estimated to produce aggregate total benefits of $29.87 million (present value terms). The project group produced a benefit cost ratio of 3.83 to 1.

SCIENCE INFORMING BEST PRACTICE

PROGRAM 2: INDUSTRY

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

Principal inputs

During 2014–15, there was $10.09 million (about 40.6 per cent of the total R&D investment) invested in R&D activities within this program.

Summary of performance indicators for Program 2

Strategic challenges	Performance indicators	Targets	Achievements
Governance and regulatory systems	Development of processes and technologies to improve the efficiency of governance and regulatory systems for fishing and aquaculture. Development of methods to incorporate economic knowledge into fisheries management.	Extension of National Harvest Strategy Guidelines undertaken. Methods for setting economic target reference points multi-species fisheries completed.	**Achieved**: National Harvest Strategy Guidelines project completed. Summary user guide developed and circulated to fisheries managers and fishers. **Achieved**: Project setting economic target reference points for multiple species in mixed fisheries complete.
Resource access and allocation	Development of processes for efficient, transparent allocation of shares and associated property rights for all aquatic resource users.	One report on Indigenous cultural fishing and fisheries governance.	**Achieved**: Two reports completed including facilitation of the FRDC Indigenous Reference Group to progress RD&E outcomes, which outline approaches to providing input into fisheries.
Production, growth and profitability	Development of knowledge, processes and technologies to improve productivity and profitability of the commercial sectors. Development of knowledge and technologies in the areas of domestication and breeding genetics to support growth of the aquaculture sector.	Transition of Seafood CRC projects and outputs to FRDC.	**Achieved**: FRDC has worked with the Seafood CRC establishing a process and mechanisms to transition and novate uncompleted projects and assets to the FRDC to ensure completion and utilisation.
Consumers, products and markets	Development of knowledge and technologies to support the industry's development of new products. Development of knowledge and technologies to improve seafood value chains and support trade and market access.	Two industries undertaken market development activities into export markets.	**Achieved**: The FRDC via its contribution to the Seafood CRC successfully mapped two supply chains in 2014–15 and a total of 10 during the life of the Seafood CRC.
Value from aquatic resources	Development of knowledge, processes and technologies to understand and enhance the societal and personal values obtained from recreational and Indigenous customary fishing. Development of knowledge regarding Indigenous customary fishing practices, and processes to incorporate this knowledge into fisheries management.	Establishment of two new FRDC subprograms to address priorities for the Indigenous and recreational sectors.	**Achieved**: Recfishing research and the Indigenous Reference Group were both established and funded as FRDC subprograms.

Seafood CRC farewell

The Australian Seafood CRC officially opened for business on 6 August 2007 and the agreement with the Australian Government ended on the 30 June 2015. The FRDC was the largest partner investor in the Seafood CRC contributing around $31 million over the last eight years of operation. This means for most of the projects completed the FRDC contributed around 71 cents in every dollar.

The FRDC has worked closely with the Seafood CRC to transition activities and uncompleted projects for ongoing management and to ensure the legacy of their investments endures, and continues to deliver benefits to its participants and end users. By the numbers here are some of the work of the Seafood CRC.

- **1 Seafood CRC**. The Seafood CRC's mission was to contribute to the economic growth, and the industrial and commercial success of the Australian seafood industry by assisting end users to deliver safe, high-quality, nutritious Australian seafood products to premium markets, domestically and overseas. The Seafood CRC's headquarters was based at Flinders University in Adelaide but research projects were conducted throughout Australia, and even in China.
- **4 programs**. The Seafood CRC had four planned outcomes to help link researchers with industry and government, with a focus on research application. These outcomes were presented as programs.
  - Program one: Production Innovation, aimed to substantially increase the production and profitability of selected wild-catch and aquaculture species.
  - Program two: Program and Market Development, was given responsibility for increasing demand and access to premium markets for Australian seafood while fulfilling consumer demands for safe, high-quality, nutritious seafood products and increasing profitability throughout the value chain.
  - Program three: Communication and Education, delivered additional outcomes in the form of skilled scientists, industry-ready graduate students, informed industry personnel and increased social capital among all participants.
  - Program four: Commercialisation and Utilisation, was directed to the delivery of the outputs from the other three programs.
- **8 years**. The Seafood CRC ran from 2007 to 2015.
- **10 staff**
- **14 Board members**
- **34 participants**
- **67 graduate students** completed their higher degrees with the support of the Seafood CRC.
- **97 travel bursaries**. With the support of the Seafood CRC, recipients attended a variety of educational and professional development activities in Australia and overseas.
- **100+ usable project outputs or products developed**. These have had direct and practical application to aquaculture, ocean fisheries, domestic and export markets.
- **176 milestones achieved**. This is all but one of the milestones in its Commonwealth Agreement.
- **300 research publications**.
- **540 projects**.
- **30,000 Cobia sent to market**.
- **5 million healthy fish fed on improved diets**.
- **12 million healthy Southern Bluefin Tuna larvae**.
- **$68 million**. The value of in-kind contributions provided by the CRC's participants.
- **$83 million**. Total cash expenditure by the Seafood CRC over its life. This comprised $35.5 million contributed by the Australian Government and $44.5 million contributed by its core participants and supporting participants.
- **5 billion** genetically improved oyster spat distributed.

Brave new world of octopus farming

Development of octopus aquaculture (Project number 2009/206)

Further development of commercialisation of Artemia culture (Project number 2010/212)

Countering territorial behaviour and the propensity of octopus to escape from even the most securely closed tank systems have been among a number of achievements and world firsts to come from Australian efforts to develop aquaculture techniques for the species.

Octopus was once considered bycatch in the rock lobster industry and used primarily as bait, but is now considered a gourmet seafood and Australian consumers just cannot get enough. However, wild-capture fisheries are unable to keep up with demand, leading fishers to investigate the aquaculture potential of the species.

Western Australia's octopus fishery is relatively new; it was officially established in 1999 and targets *Octopus tetricus*. But even in its first few years, it was clear that demand exceeded supply. Founded by brothers Ross and Craig Cammilleri, Fremantle Octopus Pty Ltd and its subsidiary Occoculture Pty Ltd, have been the main drivers behind research into octopus aquaculture. The brothers were keen to move from octopus fishing to 'ranching', where wild-caught juveniles, the bycatch of adult harvest, are grown in land-based tanks or offshore cages.

With ranching gaining popularity in Europe—especially in Spain, Italy and Greece, as well as in Mexico—*O. tetricus* offers real commercial possibilities and with its excellent eating qualities and high growth rates (up to three kilograms a year).

Fremantle Octopus were granted an aquaculture licence and lease at Garden Island, Western Australia, to ocean-ranch juvenile octopus, but it is not possible to source enough juveniles from the wild-capture fishery to make ranching independently commercially viable. This requires closing the life cycle of the species and developing tank-based production systems to breed juveniles in sufficient numbers to supply ocean-based ranches.

The dual advantages of this are the preservation of wild stock and the production of controlled-sized animals (about one-and-a-half kilograms) to meet the market.

In order to move from ranching to a whole-of-lifecycle approach in an aquaculture setting, the Cammilleri brothers approached the Western Australian Department of Fisheries.

Model octopus farm

Researchers working on the FRDC-supported project, made major gains in understanding the behaviour and life cycle of *O. tetricus*, while analysing its commercial viability for aquaculture.

This includes the development of a 15-tank model octopus farm at the Western Australian Fisheries and Marine Research Laboratories based at Hillarys Boat Harbour, north of Perth.

The aim was to imitate commercial reality and develop a system that could be replicated in any country and be a profit-yielding enterprise. The costs of running the system—including equipment set-up, such as tanks and pumps, as well as resources, such as labour, electricity, water and feed—were analysed.

Ranching

There were several issues in developing the commercial tank-based ranching system. In the wild, octopus exhibit territorial behaviour and will aggressively defend their range. In Spain and other countries developing this type of aquaculture, this behaviour is controlled by providing 'hides' in the form of PVC tubes, so each octopus has its own territory in which to grow and develop. However these hides limited the biomass in the tank as well as the harvesting and maintenance.

The research team discovered that is was possible to intensively grow octopus in tanks without hides when individuals were all of a similar size. When this occurred, none of the individuals displayed aggression or cannibalism, as they inevitably did in a mixed-size population. There was an inverse relationship between octopus density in the tank and the degree of aggression and cannibalism. When many octopus were added to the tanks, flat PVC sheets were installed, so they would have more surface to attach to as the tank walls were completely occupied.

Not having hides saved up to 80 per cent of the tank cleaning and maintenance work that would otherwise have been required, which translated into cost savings.

World firsts

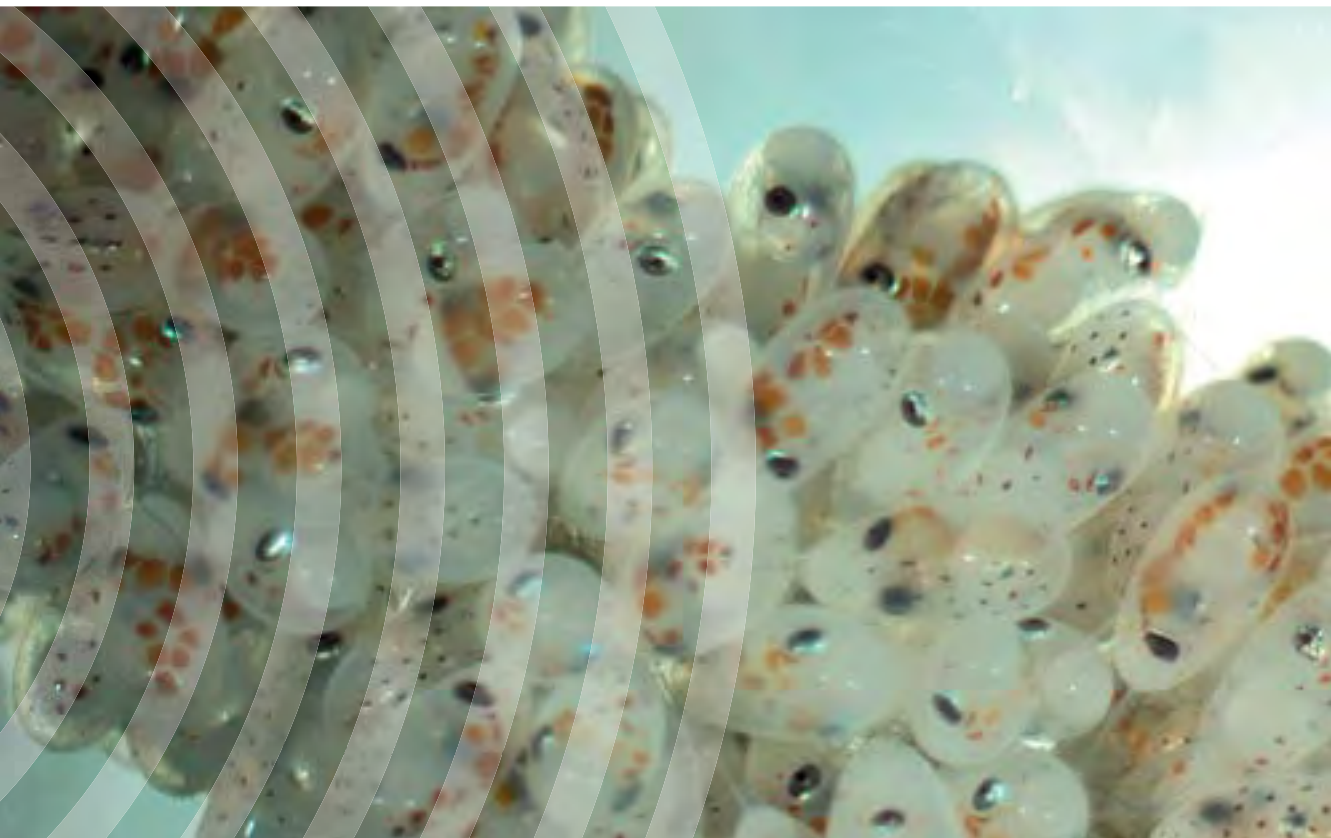
In Spain, the maximum biomass harvested from aquaculture systems using hides is 15 kilograms per cubic metre of water. The Western Australian octopus farm harvested 54 kilograms per cubic metre, a biomass production rate never before achieved in octopus aquaculture.

It was also a 'world first' to recognise that octopus could be tank-grown without hides and that in high-density, size-matched populations octopus behaviour was modified and switched from being individual and territorial to behaving as a 'school', with no signs of cannibalism or aggression.

Another first was developing a simple mechanical method of preventing them from engaging in the kamikaze habit of hurling themselves out of the tank and onto the floor. Octopus are known to be masters of escape and heavy steel mesh is usually used to cover tanks to prevent this.

Looking for alternatives, the research team first tried a low-voltage pulsing electric fence positioned a few centimetres above the perimeter of the tank, but the escapes continued.

The solution ultimately devised is both simple and elegant: a band of woven shade cloth around the perimeter of the tank. Shade cloth has a porous, woven structure that permits airflow, but prevents an octopus latching on with the suckers on its tentacles, which require a vacuum to work. The solution completely prevents escape and has the added advantage of being easy to drop down during feeding or when cleaning the tank.



Breeding bottleneck

Early in the project it became apparent that survival rates of paralarvae represented a significant 'bottleneck' in the system and would be the most difficult aspect of closing the life cycle.

Octopus species display one of two types of egg production. In some species, up to 150 'large' eggs (like a ball bearing) are produced and the individuals that hatch are 1.5 to 2 centimetres and look and behave like miniature versions of the adult.

In the second form of egg production which occurs in *O. tetricus* 100,000 to 200,000 very small eggs are produced and they hatch to produce embryos (called paralarvae) with leg buds, an ink sac and a primitive digestive system. In nature, the chances of any one paralarva from this second group surviving to an adult are much lower than that of a juvenile octopus hatched fully developed.

While the ultimate goal of closing the life cycle of *O. tetricus* was not fully achieved, major advances in understanding were made. Management and natural-induced spawning of octopus broodstock was achieved and eggs and paralarvae can now be produced on demand. Larval systems, environmental conditions and nutrition were all developed and knowledge gained in these areas will assist in accomplishing a commercial octopus breeding program in the future.

The researchers acknowledge the need for more research to unlock the nutritional and environmental code required to close the octopus life cycle in aquaculture conditions. But what they have achieved is a number of world firsts in octopus aquaculture and the development of a model grow-out system.

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Market makeover for Australian salmon

Centre of Excellence Science, Seafood and Health (CESSH): Post Harvest Research Program (Project number 2013/711)

Centre of Excellence Science, Seafood and Health (CESSH): Answering the Western Australian seafood industry's research questions (Project number 2013/214)

Weak demand and low prices, rather than reduced fish numbers, have been responsible for the decline in commercial catches of Australian Salmon since the mid-1990s. However, this could be about to change thanks to a Seafood CRC project that is using an existing technology to improve fish quality. The project is also fostering collaboration between researchers and industry, and contributing to some clever new seafood product development.

Western Australian Salmon (*Arripis truttaceus*) is a sea perch from the family Arripidae. It is closely related to its eastern counterpart Arripis trutta (*Eastern Australian Salmon*), but despite the name, neither are related to the true Salmon—including Atlantic Salmon (*Salmo salar*)—of the family Salmonidae. Australian Salmon is only one of many underutilised finfish species that will be included in the database developed as part of this Seafood CRC project and the first species to be studied in depth.

The database will include challenges specific to each of the underutilised species that make it difficult to bring a reliable quantity of quality product to the marketplace.

The focus of the post-harvest supply-chain improvement program at CESSH, is to improve the performance of seafood supply chains through science and innovation. This includes the development of new seafood products, which need to be driven by end users.

Each year in Australia, about 25,000 tonnes of finfish that could be sustainably harvested are overlooked. The reasons for this are diverse. For example, sardines and Australian Salmon both have a comparatively short shelf life. They require an exacting supply chain to reach the market in good condition. This means they must be caught and processed quickly so they reach the market in the shortest possible time to maintain their quality.

Other species might only be found in remote locations where there is a lack of infrastructure, such as chilled or frozen storage space, to harvest and process them, and bring them to markets in good time and in good condition. And if market demand for a specific species is relatively weak, when additional tonnages are harvested the fish are destined for lower-value products such as bait or aquaculture feed.

Consumer perceptions can also be a challenge. Australian Salmon has been perceived as an 'average' eating fish. However, when processed quickly and served in the right way, consumers have rated it close to Barramundi (*Lates calcarifer*) in desirability.

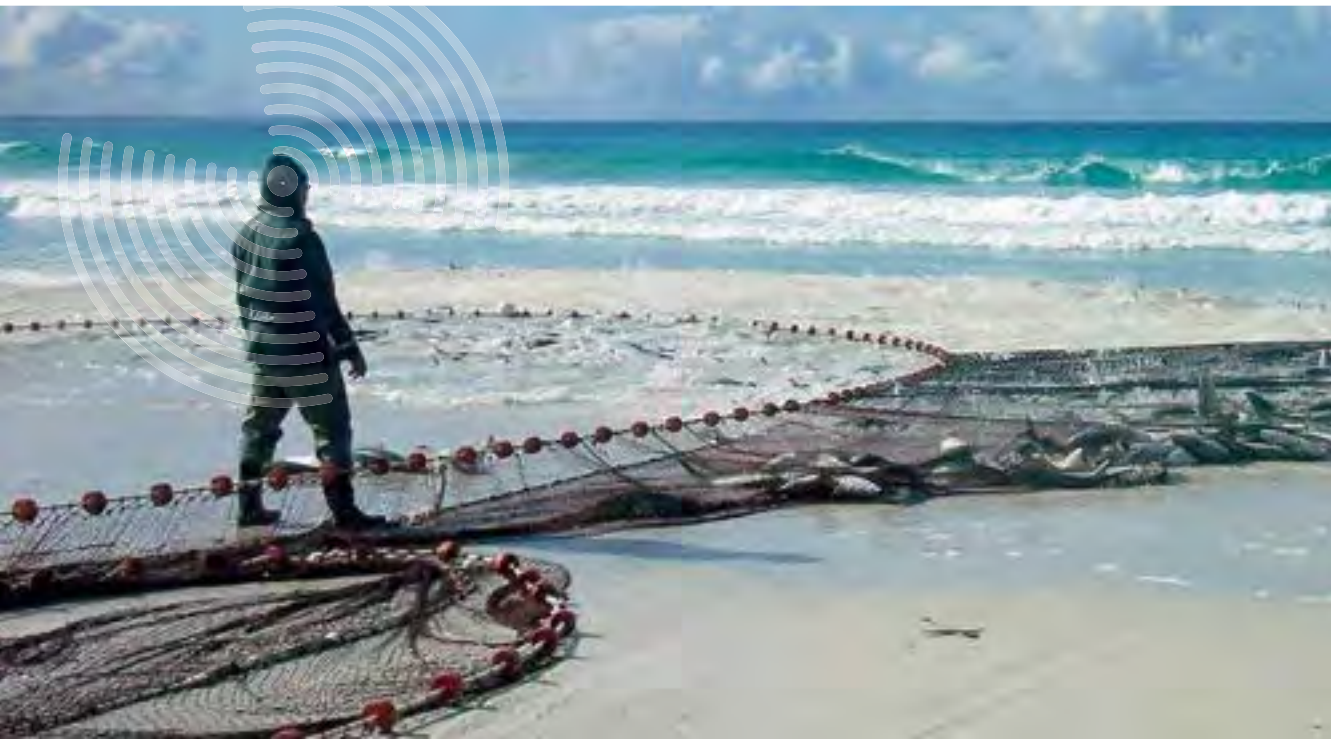
Harvesting challenge

Early in the analysis of Australian Salmon, an industry development group was formed and fishers, processors and marketers held a workshop to identify the best practice processes that would bring fish to market in the best possible condition. This included the need to process fish as quickly as possible to maintain flesh quality.

Studies show that when a fish dies slowly, it runs out of oxygen, which leads to a build-up of lactic acid in the tissues. This produces opaque flesh and lowers pH, causing sour-tasting fish. It also makes the flesh soft, which means a shorter shelf life. Avoiding such pitfalls and harvesting to promote quality is a fundamental step in the chain of events leading to quality marketable Australian Salmon products.

The Australian Salmon industry group looked at what other sectors of the seafood industry were doing to maintain quality, including processes to kill fish quickly and without causing them stress. A portable 'stunning machine', the size of a large office desk, emerged as the possible key to revolutionising the Australian Salmon industry in Western Australia.

Originally developed by Queensland company Seafood Innovations for the Atlantic Salmon industry in Tasmania, it uses compressed air to stun fish in order to preserve good eating quality. A fish's environment should also be as natural as possible until the moment it dies.



With this in mind, researchers developed a series of stunning machines that simulate an environment where fish are enticed to swim into them. The machine then delivers a high-speed blow to the skull.

Considered to be one of the most humane and efficient ways of killing fish, the technique is known as 'percussive stunning'. If fish entering the machine are all the same species, the same level of stunning may be used for fish ranging from 1–15 kilograms.

A trial with Australian Salmon was held at Bettys Beach on Western Australia's south coast, where fish were harvested with beach haul nets. Fish were taken from the nets on the beach, stunned, hand bled and placed in ice slurry for transport to a processing plant in Albany. A total of 1.4 tonnes of frozen fish was produced for market trials and new product development.

Salmon products

Value-added products produced from the 'quality' fish samples included eight flavours of canned smoked Australian Salmon, an Australian Salmon fish burger and Thai fish cakes with 100 per cent Australian fish. A dog food range of dried slices and cuts and seafood jerky have been suggested but not yet developed.

In a consumer taste trial at Curtin University, microwaved frozen fillets of Australian Salmon were presented alongside similar products of Spanish Mackerel, Barramundi, mullet, snapper and whiting. Overall, the salmon was fourth in preference, but close to Barramundi.

In another survey, also at the university, 83 per cent of respondents said they would be more likely to choose products from a well-managed fishery and 66 per cent said they would pay a premium price for them.

The future

Fishers are very interested in developing a range of new markets. They are willing to adjust their methods of handling and potential volume of catch to meet market expectations, particularly to achieve improved quality.

The Western Australian Fishing Industry Council, also sees a lot of potential for the Western Australian Salmon fishery. There is an opportunity to provide real value-adding to a product historically regarded as somewhat low in value and an opportunity to fit into a marketplace where it is becoming increasingly difficult to purchase wild-harvest fish.

A high-quality fish at lower cost will fit well into the shopping cart of those who cannot afford premium-priced product. It's Australian, attractive in taste and likely to be competitively priced. There is also the potential to stimulate the economy, as this fishing industry will be economically viable.

There will also need to be an increased infrastructure capacity in Albany to manage increased harvest volume. Work is continuing with the industry development group on these issues, as well as the value-added product development and on exploring new markets.

The underutilised finfish species database is expected to be complete by late-2015, although new species may be added as market conditions change. Two or three other underutilised species from the database will be chosen for further work. Stakeholder consultation has so far provided positive responses with producers in Esperance, the Pilbara trawl and the Great Australian Bight requesting project development for other finfish species.

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Torres Strait aquaculture

People development program: FRDC Indigenous development scholarship—Frank Loban (Project number 2008/326.34)

Aquaculture opportunities are currently limited in the Torres Strait region due to a lack of knowledge and experience. This project was undertaken to gain knowledge, understand aquaculture methodologies and explore potential opportunities throughout the region. This was achieved by visiting several aquaculture sites and speaking to experts in the field. The project included a visit to Pohnpei, Micronesia, in the Pacific Ocean to see the clam aquaculture farm and its community-based setup and partnership with the local Indigenous population. The Darwin Aquaculture Centre was also visited to better understand the challenges of aquaculture within Australia. Lastly, Aquarium Industries in Melbourne was visited to better understand the potential markets for farmed marine products, not only for the aquarium trade, but to better understand the process of product handling, product storage and preparation for market.

The knowledge and experience gained from this project was significant and will be used to develop the most appropriate aquaculture venture suitable for the Torres Strait region in the future.

For further information: Frank Loban, Torres Strait Regional Authority, 07 4069 0700

Award for recovered waste

Seafood CRC: Waste transformation methods for value added products for the catering market (Project number 014-704)

Researchers from Curtin University, have won the Health Sciences Prize in the Curtin Commercial Innovation Awards 2014 for their work to minimise waste in the seafood industry. The research looked to find sustainable ways of designing and manufacturing products from the waste created from processing Blue Swimmer Crabs (*Portunus armatus*).

Crabs that were going to landfill or being made into low-cost products such as fertiliser and pet food, now meet the needs of niche consumer markets, in a cost-efficient way at an industrial scale. An example is the gourmet fishcakes created from Blue Swimmer Crabs, which are being sold to high-end restaurants.

The FRDC and the Seafood CRC helped to fund this research.

For further information: Search 'Curtin finds new value in seafood waste' on YouTube

Economics 101 transforms pipi fishery

Development of a national harvest strategy framework (Project number 2010/061)

Fifteen years ago, pipis (also called clams or cockles) had fallen out of fashion as a food product in Australia and were mostly sold for bait. But when the human consumption market began to expand again, more fishers began to work in the South Australian Pipi Fishery, which is part of the Lakes and Coorong Fishery. This caused major concerns about the stock levels. Strict quotas were introduced to protect and rebuild the resource, but getting all stakeholders to agree on a process to set the total allowable catch (TAC) levels was causing considerable angst within the community.

In 2012, the Australian Fisheries Management Forum, a group comprising heads of state and territory government agencies responsible for fisheries, was tasked with developing the National Guidelines to Develop Fishery Harvest Strategies. The aim was to meet a need for a coordinated, nationally consistent approach to creating harvest strategies across all fisheries. The project was led by Sean Sloan, director of fisheries and aquaculture policy from the Department of Primary Industries and Regions, South Australia, and supported by the FRDC.

The pipi fishery served as an early test case for the guidelines. The group sat down with scientists, fishers and government and industry representatives from the fishery to develop an annual harvest strategy that everyone could agree on.

The pipi fishery posed some interesting challenges as it was a small fishery catering to both the recreational fishing bait market and the human consumption market. The science was showing that stocks had improved so the catch could be increased, but fishers predicted that prices would go down if more catch was put onto the market, which meant working harder for the same money. What was needed was a decision-making process to set the TAC annually.

It was clear the fishers were asking for economic data to be taken into account when setting the annual catch levels. Usually, setting TAC levels is based on biological data. When economics is factored in, it often takes complicated and very costly modelling to produce a maximum economic yield estimate.

The pipi fishery needed a process that was much less expensive, that would take less than 12 months to turn around and that all the fishers could understand. Researchers used a tool called the gross margin calculator which is widely used to set supply levels and was applied to the pipi situation. It showed that the pipi market in Australia was responsive to supply. They developed a simple preliminary fishery gross margin model, which was then critiqued by one of Australia's leading fisheries economists.

The subsequent report suggested that it did work, but there were some considerations to keep in mind —predicting price for example. Julian Morison, one of Australia's top fisheries economists was then commissioned to take the model and make it very robust from an economic point of view.

From there, the pipi fishery could develop an annual harvest strategy that takes into account both stock levels and market drivers. Thus far the strategy has proven to be highly accurate and has resulted in more conservative annual catch levels than might otherwise have been applied.

There are two key elements to the strategy. The first is that the fishers participate in independent surveys that are conducted on the beach three times a year by scientists to estimate the relative biomass activities on the beach—the size and numbers of pipis. This then provides a reference point for the scientists to propose catch levels for the year.

The second element is to look at what the economic outcome for the fishers would be if the TAC changed for the year. If the science shows that the catch could be increased, but the economics show that the fishers would make less money, everyone can agree not to increase the catch that year.

The success of the model hinges on the fact that the pipi market in Australia is almost entirely a domestic market unlike an international market like rock lobster which is unpredictable. It has been a positive test case for the national harvest guidelines with the next step to develop more case studies to test the practical application of the guidelines.

For further information: Sean Sloan, 08 8226 8103, sean.sloan@sa.gov.au;
Goolwa PipiCo, www.goolwapipico.com

BCA THEME 5

An economic analysis of FRDC's investment in Theme 5: Governance and regulatory systems

Background

The Industry program (Program 2) in the FRDC's RD&E Plan 2010–15 has five themes:

- Theme 5: Governance and regulatory systems
- Theme 6: Resource access and allocation
- Theme 7: Production, growth and profitability
- Theme 8: Consumers, products and markets
- Theme 9: Value from aquatic resources

Theme 5 delves into issues relating to the cost effectiveness and efficiency of regulatory processes and co-management arrangements and aims to improve systems in these areas. To achieve this, priorities include reducing costs, complexity and duplication in regulatory systems, more collaborative participation in management, development of more efficient management by enabling maximum economic yield, developing fine-scale and spatial approaches to management, and more efficient multi-fishery and multi-sector management arrangements when more than one jurisdiction is spanned.

The projects funded in this cluster covered increased fisheries participation in management, new means of compliance and improved economic efficiency. The main benefits therefore generated through this cluster include reductions in fishery management costs, increased fishery profitability through improved management arrangements, and increased long-term sustainability of fisheries.

See summary of projects on the following page.

Public versus private benefits

Private and public benefits will both arise from the investment. On the basis of the distribution of the seven benefits to Australia, and equal weighting for each benefit, it could be concluded that benefits to the Australian public make up 43 per cent of the total benefits. If subjective weightings are taken into account, the public benefits would make up 31 per cent of the total benefits.

Distribution of benefits along the supply chain

The majority of benefits are likely to be captured by fishers through improved sustainability of wild-catch fisheries, increased profits and reduced costs. However some of the benefits accruing to fishers are likely to be captured along the supply chain, including by seafood consumers.

Benefits to other industries

It is likely that most benefits will be confined to, and not accrue beyond, the fishing industry.

Summary of projects

There are 22 projects in the Governance and regulatory systems cluster.

Project no.	Project title	Total ($)
1999/147	Greening Australia's Fisheries—a national strategy for application of environmental management systems in the Australian fishing industry	83,841
2001/069	Compliance program evaluation and optimisation in commercial and recreational Western Australian fisheries	54,635
2002/085	Development of risk assessment procedures in national fisheries compliance programs	271,119
2003/059	Developing and implementing measures of economic efficiency in Commonwealth fisheries	300,993
2003/060	Byproduct: Catch, economics and co-occurrence in Australia's longline fisheries	33,149
2003/061	Evaluation of alternative strategies for management of Commonwealth fisheries in south-eastern Australia	495,501
2004/022	Bringing economic analysis and stock assessment together in the Northern Prawn Fishery: A framework for a biological and economically sustainable fishery	476,940
2004/030	Development of an individual transferable catch quota model for the Coral Reef Fin Fish Fishery of the Great Barrier Reef	48,730
2005/024	Abalone Industry Development: Local assessment and management by industry	58,631
2005/027	Facilitating industry self-management for spatially managed stocks: A scallop case study	238,924
2005/036	A preliminary study of the dynamics of recreational fishing in the Western Rocklobster fishery for use in integrated fisheries management	49,049
2006/026	Development of co-management arrangements for Queensland fisheries—Stage 1 picking the winners	66,571
2006/234	Development and implementation of an integrated electronic weighing, recording and video monitoring of catch landings—South Australian Southern Zone Rocklobster Fishery	156,700
2007/025	Competition to collaboration: Exploring co-management models for the Spencer Gulf Prawn Fishery	269,997
2007/052	Improving economic efficiency through detailed review of input controls in the Western Rocklobster fishery	1,429,399
2008/006	Exploration of the effectiveness of alternative management responses to variable recruitment	446,766
2008/042	Tactical Research Fund: Development of a plan to address national needs for recreational fishing data for fisheries management and development	172,789
2008/044	Assessing operational feasibility of stereo video and evaluating monitoring options for the Southern Bluefin Tuna farm sector	178,192
2008/052	Empowering Industry R&D: Cost-benefit analysis of management options for the Northern Prawn Fishery	525,531
2008/059	Tactical Research Fund: Co-management strategies for Western Australian state managed fisheries using the Exmouth Gulf Prawn Trawl Fishery as a case study	256,000
2008/100	Tactical Research Fund: Investigating suitable units of certification in the Commonwealth fisheries for potential Marine Stewardship Council certification	49,689
2008/900	Seafood CRC: Improving profitability in the Western Rocklobster fishery using a rock lobster trap	88,277
		5,751,423

Source: FRDC project management database.

Benefits overseas

There may be a small spillover of benefits to overseas, most likely in the area of scientific capacity.

Additionality and marginality

The investments within the cluster have been categorised as high priority. FRDC contributed 38 per cent of total funding for the whole cluster. It is still likely that many of the projects would still have gone ahead if public funding was not available, but probably to a lesser extent.

Observations for future investment and evaluation

Observations for future investment and evaluation include:

1. Contacting relevant personnel to provide feedback on project impacts proved difficult in some cases and created time lags in completing the evaluation. This was particularly difficult due to the age of some projects, where researchers had long since moved on from their previous positions. It might be helpful for future evaluations if there existed a database containing the up-to-date contact information of key fisheries researchers.
2. It may aid future evaluations for historical data on licence fees for different fisheries to be made available.
3. The percentage for FRDC funding of total funding for the cluster's projects was 38 per cent. This was relatively similar to the average percentage of 40 per cent found for 18 clusters in 2009. The percentages are worth summarising as they may assist in assessing FRDC current and perspective roles in different R&D areas and where public benefits occur but external funding is difficult to come by.

Key performance indicators

The number of projects in the cluster that contribute to the two Theme 5 key performance indicators (KPIs) is shown below.

KPI	Description	No. of projects
1	Development of processes and technologies to improve the efficiency of governance and regulatory systems for fishing and aquaculture	17
2	Development of methods to incorporate economic knowledge into fisheries management	10

Conclusion

FRDC investment in the Governance and regulatory systems cluster produced a range of benefits. The major economic benefits have been quantified. Four broad benefit categories were identified, with three being valued. Of the 22 projects in the population, 15 were valued jointly, while two were valued individually.

Overall, the investment criteria estimated for total investment in the project group of $28.65 million (present value of costs) were positive with a present value of benefits of $110.52 million, a net present value estimated at $81.88 million and a benefit-cost ratio of 3.86 to 1, all estimated using a discount rate of 5 per cent (benefits estimated over 30 years from the final year of investment).

SCIENCE TO ENGAGE COMMUNITIES

PROGRAM 3: COMMUNITIES

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

Principal inputs

During 2014–15, there was $0.83 million (about 3 per cent of the FRDC's R&D investment) invested in R&D activities within this program.

Summary of performance indicators for Program 3

Strategic challenge	Performance indicators	Target	Achievement
Resilient and supportive communities	Development of knowledge to better inform the community's perceptions of the industry and to increase support for the industry. Development of knowledge that can help the industry to adapt to change.	One report that develops and tests social objectives for fisheries management completed.	**Achieved**: Social indicators project completed. Project examine a range of fisheries documenting and testing a range of indicators.

Social indicators identified for fisheries management

Developing and testing social objectives for fisheries management (Project number 2010-040)

The importance of including social objectives in fisheries management is recognised in many policies and programs that are intended to guide sustainable fisheries management. This includes the principle of ecologically sustainable development (ESD) that underpins Australian fisheries management and is commonly agreed as the way forward in fisheries and marine ecosystem management, the Marine Stewardship Council certification process and the UNESCO Food and Agricultural Organisation's Code of Conduct.

Until now, fisheries management has mostly been directed by ecological and economic objectives. However, the call for a more integrated triple-bottom-line approach to assessments of the industry performance has driven the need to identify social objectives because it had been remained largely unaddressed.

The lack of available information has resulted in social issues often being confused with economic issues, and economic indicators have often been presumed to be adequate proxies for social responsibility reporting. Such economic indicators, even if associated with a particular objective, do not address issues of stewardship, compliance, non-economic livelihoods, barriers to participation, community engagement with management initiatives, protection and access to iconic species for Indigenous community members or the many other social issues that have an important and legitimate role in the effective management of aquatic resources for long-term sustainability.

This led to research and development being undertaken on the boundaries of social responsibility that fisheries management have in areas such as employment, skills, instilling of stewardship and industry/community education. In this context, it was also essential to ensure any trade-offs that may have to be accepted between the social, ecological and economic objectives provide the optimal outcomes in the context of both fisheries and other external drivers.

A number of Australian projects have 'nibbled' at the edges of establishing social objectives in fisheries from an industry perspective, but none have explicitly aimed to establish a set of generic social objectives for fisheries managers, applicable to the development of fisheries management systems (e.g. management plans and harvest strategies) and decision-making processes across different jurisdictions.

Despite this work, it has not resulted in the social dimensions of sustainable fisheries management being documented or agreed upon. In particular, there is little guidance available for fisheries managers to assist them in identifying the social objectives they are managing for, or in collecting information that helps them more successfully manage for these objectives.

To address this, researchers developed a two-part guide, titled 'Managing the Social Dimensions of Fishing' (the Guide). The Guide takes fisheries managers and other key stakeholders through the steps of implementing social objectives, in an ESD context, by helping them identify, document and manage social objectives relevant to their fishery. The Guide also helps fisheries managers identify what aspects of the social dimensions of fisheries they can influence and what factors remain outside their direct influence. This will help fisheries managers better target the identification and management of social objectives to those issues that they can address. Fisheries managers and other key stakeholders as a result of the research are now able to monitor the performance of a fishery from a social perspective and make decisions regarding future management.

The development of these social objectives and associated indicators for Australian fisheries was, in line with ecological and economic objectives, and was achieved through three phases.

First, there was a review of the literature on the social dimensions of fishing, existing requirements of all Australian jurisdictions in relation to fisheries legislation and policy, and of existing national and international frameworks that consider social dimensions of fishing. Then a set of draft social objectives and associated indicators was developed. These draft social objectives and indicators were revised at a workshop held with fisheries managers and policy makers from across Australia, which also included representatives from commercial, recreational and Indigenous fisheries from all states and territories. The workshop also considered how fisheries managers might best be able to engage with the proposed project outputs.

Second, case studies of the Queensland East Coast Trawl Fishery, the South Australian communities of Ceduna, Port Lincoln and Wallaroo (in which a diversity of fisheries operate) and the Indigenous community of Narunnga from South Australia were used to test the draft social objectives and indicators, identify how best to select and apply them to the circumstances of specific fisheries and to identify low-cost approaches that can be used by fishery managers to enable them to more explicitly incorporate social objectives in their management.

The results of the case studies were used to revise and refine the objectives, and to develop indicators designed to inform each objective. The outcome was a set of recommended social objectives and associated indicators, as well as recommended processes for selecting, measuring, and analysing them in different contexts. Testing in multiple case studies ensured that the resulting social objectives and associated indicators included in the Guide are appropriate for fisheries management across different jurisdictions, at the state, territory and Commonwealth level.

Third, the revised social objectives and indicators were workshopped with the fisheries managers that had participated in the first phase of the project. This provided the basis for developing the two-part Guide that is the final output of the study. The draft Guide was reviewed by fisheries managers from across Australia, and their comments and feedback incorporated into revisions of the Guide.

Throughout the project, the objectives and indicators were developed with future integration into potential fisheries status report frameworks, such as the Status of Key Australian Fish Stocks Reports, in mind. To that end, the social objectives and indicators included in the Guide are high level and include options that enable individual fisheries management jurisdictions to select options for measuring social objectives that best fit their needs, resources and budgets.

It is envisaged that the framework developed in this project, and detailed in the Guide, will enable the integration of the social dimension of sustainable management of fisheries into fisheries management practices. These outputs facilitate the monitoring of performance of a fishery from a social perspective and provide robust benchmarks to assist in making decisions that incorporate social considerations, as well as ecological and economic objectives and imperatives.

For further information: Lianos Triantafillos; lianos.triantafillos@sa.gov.au

Indigenous perspectives step up

People development program: FRDC Indigenous development scholarship—Matthew Osborne (Project number 2008/326.36)

For Matt Osborne, a member of the Kaurna and the Narungga people of South Australia, the ocean is an important part of his cultural heritage. This includes learning and practising customary fishing techniques that target many different species. Some of the species highly prized for cultural significance are also well-recognised commercial species—for instance, abalone and Southern Rocklobster. Others, such as the Dusky Morwong, have little value to either commercial or recreational fishers.

Many Indigenous Australians have been restricted or legally prevented from carrying out the traditional practices of their people. This is beginning to change slowly, with many jurisdictions around Australia now providing for and protecting Indigenous access to fisheries. However, there remains a gap in many cases between legislation and initiatives on the ground.

Supporting efforts to encourage greater Aboriginal and Torres Strait Islander participation in fisheries—not only in preserving traditional fishing practices and cultural knowledge but also in commercial and recreational fishing and fisheries management is important.

Working with Rural Solutions SA, the service-delivery arm of Primary Industries and Regions South Australia, Matt has been involved in several projects aimed at expanding Indigenous participation. This includes a feasibility study for abalone aquaculture as an Aboriginal business initiative.

In the past two years, Matt participated in the National Seafood Industry Leadership Program and has built skills and expanded networks through the program and through an FRDC-sponsored Indigenous Development Scholarship. The FRDC scholarship involved travelling to the Northern Territory, Queensland, Western Australia and the Torres Strait Islands, to speak with both fisheries managers and Indigenous community representatives.

In the Northern Territory, Yirralka rangers are involved in both fisheries management and compliance and help manage the Laynhapuy Indigenous Protected Area, which covers 4500 square kilometres of coastal vegetation, heathlands, mangroves, floodplains and wetlands.

As well as being authorised to conduct compliance activities, such as checking for commercial crabbing equipment, Indigenous people had a substantial influence in defining compliance operations to manage and protect their sea country.

Indigenous knowledge and participation assists government agencies to manage the long-term sustainability of the fisheries for the benefit of the entire community.

Matt is now a member of the FRDC's Indigenous Reference Group, which works to define fisheries-related aspirations of Indigenous Australians and relevant RD&E activities needed to support these. The FRDC's investment in Indigenous research provides strong recognition of the significance of the sector. Other sectors of the fishing community will also benefit from recognition of Indigenous fisheries through improved decisions and a true triple-bottom-line approach that meaningfully incorporates all users.

For further information: Matt Osborne, 08 8226 9959, matt.osborne@sa.gov.au

Industry toolkit focuses on communication and the community

People development program: Third-party sponsorship of the National Seafood Industry Leadership Program (Project number 2012/401)

Connecting with younger Australians has been the focus of several initiatives from the FRDC's 2014 National Seafood Industry Leadership Program (NSILP), including children's books and online resources for teachers. The 14 members (see page 76) of the 2014 NSILP program graduated in Canberra in September, where they launched their vision and mission for the future of the fishing industry and outlined the projects they developed during the program. Collectively these projects form a toolkit to help different sectors promote the industry through the effective presentation of information.

Children's books

NSILP participants identified there were few books about fishing aimed at children, especially those aged six to eight. To address this, the group produced an illustrated storybook 'Captain of my Fishing Boat' and a photographic picture book 'Coastal Crabber: life as a professional fisher'. The storybook is already in use in an ACT school and the picture book can be downloaded free from www.blurb.com. There is also a link to a YouTube video that gives children 'real' visuals of how the industry operates.

Resource list

The resource list 'Schools of Fish' is an effort to create an online collection of seafood industry resources. The list aims to give teachers and curriculum writers access to information about seafood industry sectors so that fisheries can be more easily incorporated into the school curriculum.

Cookbook

The cookbook 'Fisherman and the Chef' was devised to showcase Australian seafood and promote seafood producers and recreational fishers, as well as engage well-known chefs. The group gathered profiles, photographs and recipes from fishers and farmers, as well as recipes from chefs, and compiled these into a book, which is also available as a PDF.

Video resources and QR code

A six-and-a-half-minute video, 'The sustainable Mud Crab Story', was produced by the NSILP's video resources and quick response (QR) code group. The video features a day in the life of Mud Crab fisher Troy Billin, with cooking tips from celebrity chef Fast Ed (Edward Halmagyi).

Infographics

Providing simple but potent communication and education tools for industry was the goal of the Seafood Knowledge Condensed: Infographics team. Infographics are a powerful tool for conveying key messages and gaining attention. The group produced sample infographics and a step-by-step guide for industry to develop their own.

Role of leadership

The seafood industry is changing rapidly and industry must invest in developing people to initiate and manage this change across the board. There is always a role for leadership, regardless of position. The NSILP is delivered over six months through three residential sessions of three days each. The program focuses on developing skills at three levels: personal, business and national industry. It is funded through the FRDC and developed, managed and delivered by Rural Training Initiatives.

For further information: Jill Briggs, 02 6035 7284, 0409 455 710, jill@ruraltraininginitiatives.com.au, www.ruraltrainingintiatives.com.au

Indigenous rangers boost regional research capability

Optimising the management of tropical reef fish through the development of Indigenous scientific capability (Project number 2013/017)

By drawing on a unique blend of theoretical, practical and local knowledge, an Indigenous marine ranger training program is boosting research capability in northern Australia.

Researchers at the Northern Territory Department of Primary Industry and Fisheries (NT DPIF) identified that the first need was to address knowledge gaps in the biology of key coastal reef fish species.

Stock assessments in the Northern Territory have identified that current harvest levels of Golden Snapper (*Lutjanus johnii*) and Black Jewfish (*Protonibea diacanthus*) are unsustainable in the Darwin region and fisheries managers require information on stock structure of these species to effectively respond to the situation.

The second need was the aspiration of Indigenous communities to develop their own scientific research capability and be involved in sustainably co-managing their sea country fisheries resources.

Indigenous community members, keen to be involved in monitoring and managing aquatic resources, were offered places in the newly developed Certificate II Vocational Education and Training (VET) course in measuring and analysis. Students were nominated for the course by community ranger coordinators based on their interest in resource management.

The course incorporated literacy and numeracy learning pathways with mentor support to expand the program to a wider range of participants.

Course participants were taught how to follow set procedures to collect samples, accurately record data in the field and use equipment such as scales, callipers and microscopes to conduct basic laboratory analysis and accurately record—by hand—observations and measurements, then enter this data into software.

The laboratory component of the course involved dissecting whole fish collected from other projects, as well as fish from the students' sea country. This allowed them to learn how to take and record important measurements and extract samples for analysis.

The course was conducted in Darwin in June 2014 with 17 students from six Indigenous communities and they all passed with flying colours.

The program will boost the regional research capability of the FRDC and government agencies across northern Australia between the Kimberley region of Western Australia and across the Northern Territory to Cape York in Queensland.

Researchers and management are concerned about the sustainability of important reef fish species but it is not economically feasible for government agencies to sample from such a wide area, and often in remote regions. The obvious solution was to engage with Indigenous communities that lived in these regions to find the best way of conducting the work that offered maximum benefit to both parties.

Initial discussions indicated Indigenous communities wanted to be more active in managing their aquatic resources and, at the same time, provide development opportunities for community members.

Indigenous marine rangers

The new marine ranger program is designed to deliver a blend of theoretical and practical knowledge to participants who already have local knowledge.

The marine ranger coordinator at NT DPIF says the initial Indigenous marine rangers used their local knowledge of species' locations to provide samples for fisheries researchers in the field. However, they were not trained in the specific technical skills needed to collect fish samples and data with a minimum of supervision.

The development of a vocational course with the outcome of technically-trained rangers has meant more significant industry engagement and smarter business for the department. It also increases community awareness of susceptible species and the rangers have scientific backing to manage species more sustainably. It is also important for rangers to understand the link between data gathered in the field and what happens in the laboratory, and why the information is critical to fisheries management.

Post-certification sampling

A total of six ranger groups from across northern Australia were represented at the course. These were: Larrakia rangers from Darwin, Djelk rangers from Maningrida, Dhimurru rangers from Nhulunbuy (Gove), Lianthawirryarra rangers from Borroloola, Gumurr Marthakal rangers from Elcho Island and Anindilyakwa rangers from Groote Eylandt.

Now that 17 participants have passed the course, the aim is to continue collecting the remaining samples for the stock structure component. Two days have been allocated for sampling at sites near each ranger's community, which will be an important 'performance indicator' for the results of the course.

A graduate of the Certificate II course, is a Larrakia ranger who described the course as an "awesome" experience—especially meeting other Indigenous rangers from across the Northern Territory and the opportunity to understand their different perspectives and how they work on their own country. Part of her work has involved monitoring reef fish for NT DPIF, which she says has given her more opportunities to work with other government departments.

In the past three years, NT DPIF has also supported the development of Indigenous fishing businesses, including small-scale businesses that catch and sell small quantities of fish to their local communities. A percentage of each catch is put aside for analysis.

Fish are captured either by line or net fishing. Datasheets are completed to record location and species and the fish are then separately bagged and stored on ice to preserve sample integrity. Length, sex, size at maturity and reproductive parameters are recorded for each species. Back in the laboratory, otoliths (ear bones), DNA and parasite samples are collected.

Going forward

The Certificate II VET course has had immediate benefits and subsequent visits to communities with newly-trained graduates have found that the graduates have become more active in collecting data for resource management. Benefits have included samples for the population-structure project, as well as collecting biological data from fish caught in emerging Indigenous fisheries and providing fish samples for heavy-metal analysis.

The excellent quality of the data collected by the trainees means that they can now conduct this work on a 'fee for service' basis which provides the benefits of employment opportunities for new ranger positions from the money generated.

The qualification each of the trainees received also provides the additional benefit that they are more competitive if they decide to apply for jobs outside of their community in the area of resource management. To train Indigenous rangers to collect samples is good but the program wants to achieve more.

The qualification is a pathway to employment, and an increased role in the management of aquatic resources and it looks like happening within the span of the project, which finishes in 2016. It is envisaged that future courses will involve students outside ranger groups and in other communities outside the Northern Territory.

For further information: Thor Saunders, 08 8999 2065, thor.saunders@nt.gov.au; Simon Xuereb, 08 8999 2170, simon.xuereb@nt.gov.au; Carl Joswig, 08 8985 4638, ranger.manager@larrakia.com

Caring for fisher health

Staying Healthy: Industry organisations' influence on behaviours and services used by fishers (Project number 2012/402)

A report has found there was a need for specific attention to the physical and particularly the mental health of people in the Australian commercial fishing industry. This included a better understanding of the issues, logistical and social barriers to good-health practices, and avenues of health communication and treatment. The 2013 Staying Healthy study echoed the Rural Industries Research and Development Corporation's Collaborative Partnership for Farming and Fishing Health and Safety program, which advocated research into health, wellbeing and resilience in rural primary industries.

The report and program, coupled with widespread anecdotal accounts describing very poor physical and mental health within the fishing industry, including accounts of suicide and attempted suicide. As a contributor to a body of scholarly research, this study is supported by other literature.

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BCA THEME 6

An economic analysis of FRDC's investment in Theme 6: Resource access and allocation

Background

The Industry program (Program 2) in the FRDC's RD&E Plan 2010–15 has five themes:

- Theme 5: Governance and regulatory systems
- Theme 6: Resource access and allocation
- Theme 7: Production, growth and profitability
- Theme 8: Consumers, products and markets
- Theme 9: Value from aquatic resources

Theme 6 is focused on developing and maintaining access to aquatic resources, as well as managing competition between different users of these resources (FRDC, 2010). Due to the finite nature of fishery resources, R&D in this area is essential to ensure the ongoing sustainability of fisheries. To assist in achieving these goals, the following priorities have been set:

- The development of improved processes and technologies to quantify rights between different users and mechanisms for allocating shares.
- The development of methods to value the rights of recreational and customary users.
- Increased knowledge amongst diverse groups of stakeholders about each other's expectations regarding resource access and allocation.

The projects funded in this cluster focused on the effect of marine protected areas on stakeholder access, allocation between commercial and recreational users, and the socio economic nature of fishing communities. Therefore the main benefits to come from this cluster include an improved resource allocation that increases total utility for the various users of the fishery. In addition, there were also benefits relating to increased scientific capacity, avoided social costs, and enhanced sustainability of ecosystems and the environment.

Summary of projects

There are seven projects in the Theme 6: Resource access and allocation cluster.

Project no.	Project title	Total ($)
1999/162	Evaluating the effectiveness of marine protected areas as a fisheries management tool	409,168
2002/223	National atlas of fishing activities and coastal communities	629,048
2003/039	Dynamic modelling of socio-economic benefits of resource allocation between commercial and recreational use	154,200
2004/247	A scenario analysis of the social impact of the Western Rocklobster industry management options on fleet hosting communities	427,287
2006/071.20	Evaluating the performance of Australian Marine Capture Fisheries—Expert assessment to assess outcomes of Australian fishing management	91,434
2007/053	Regional impact assessment for the Moreton Bay Marine Park	173,871
2007/050	Developing mechanisms for the transfer and/or adjustment of rock lobster shares between sectors in Western Australia and South Australia	169,009
		2,054,017

Source: FRDC project management database.

Public versus private benefits

The investment will result in both public and private benefits. On the basis of the seven benefits listed in the analysis, and an equal weighting for each benefit, it could be concluded that the public benefits to Australia could make up 57 per cent of the total Australian benefits. If the subjective weightings are taken into account, the public benefits would make up 40 per cent of total Australian benefits.

Distribution of benefits along the supply chain

The majority of private benefits will initially be captured by fishers but benefits (and costs) are likely to ultimately be shared along the supply chains, including seafood consumers.

Benefits to other industries

It is unlikely that benefits will accrue beyond the fisheries industry.

Benefits overseas

Overseas producers may receive minor benefits from scientific information and methods.

Additionality and marginality

The investment in the projects in this cluster has been categorised as medium to high priority. FRDC contributed 53 per cent of total funding on the seven projects (in real terms), but this varied greatly across projects. If the FRDC had not received funding from government, some of these investments would probably still have been supported by the FRDC but to a far lesser extent. Some of the investment may have been funded through other sources if the FRDC had not contributed.

Observations for future investment and evaluation

Observations for future investment and evaluation include:

1. Contacting relevant personnel to provide feedback on project impacts proved to be difficult in some cases and creating time lags in completing the evaluation. This was particularly difficult due to the age of some projects, where researchers had long since moved on. It might be helpful for future evaluations if there existed a database containing the up-to-date contact information of key fisheries researchers.
2. The percentage for FRDC funding of total funding for the cluster's projects was 53 per cent. This was well above the average percentage of 40 per cent found for 18 clusters in 2009. The percentages are worth summarising as they may assist in assessing FRDC current and prospective roles in different R&D areas, particularly where public benefits occur but external funding is difficult to come by.

Key performance indicators

The number of projects in the cluster that contribute to the Theme 6 key performance indicator (KPI) is shown below.

KPI	Description	No. of projects
1	Development of processes for efficient, transparent allocation of shares and associated property rights for all aquatic resource users	6

Of the projects in this cluster, six were deemed to be directly contributing towards the theme's key performance indicator. The remaining project did not make a direct contribution focused on providing more detailed and accessible data for industry stakeholders, and as such may have made contributed through an indirect pathway.

Conclusion

FRDC investment in Theme 6 produced a number of benefits. Of the seven projects in the population, the impacts from four were valued. While the major economic benefits have been valued, there were a number of benefits not valued. These include the majority of social, environmental and scientific capacity benefits, which are likely to be significant.

It is likely that many of the benefits identified from this cluster of projects may not result directly from the outputs of these projects. For those projects used to inform policy it should be recognised that several factors may be involved in informing policy, so it can be difficult to link outputs directly to impact. Furthermore, some of the projects were data-collection exercises which were used to inform other research and decision making, rather than create their own direct impacts.

Overall, the investment criteria estimated for total investment in the project group of $8.03 million (present value of costs) were positive with a present value of benefits of $15.70 million, a net present value estimated at $7.67 million and a benefit-cost ratio of 1.96 to 1, all estimated using a discount rate of 5 per cent (benefits estimated over 30 years from the final year of investment). Due to the number of minor benefits which were identified but not valued and the conservative nature of many of the assumptions made, the resulting investment criteria are likely to be a lower-bound estimate of total benefits.

INVESTING IN TOMORROW'S FISHERS

PROGRAM 4: PEOPLE DEVELOPMENT

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

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

Principal inputs

During 2014–15, there was $1.49 million (about 6 per cent of the FRDC's R&D investment) invested in R&D activities within this program.

Summary of performance indicators for Program 4

Strategic challenges	Performance indicators	Targets	Achievements
Leadership development	Provision of knowledge and opportunities to develop leadership skills and diversity across all sectors of the industry and across aligned stakeholder groups, including researchers and resource managers. Development of knowledge, skills and processes to support industry to engage in debate, adapt to change, and move toward co-management of fisheries.	Seventeen participants complete leadership courses.	**Achieved**: Seventeen participants complete the National Seafood Industry Leadership program and two participants complete the Australian Rural Leadership Program.
Workforce development	Development of knowledge and tools to meet future workforce and skill needs.	Second capability audit completed for research capacity.	**Achieved**: Capability audit completed—see page 29 of National Primary Industries Research, Development and Extension Framework section.
Innovation skills	Mechanisms and tools to attract and nurture RD&E capability in priority areas. Opportunities to acquire insights, knowledge and skills to create innovative, market-driven enterprises and organisations.	Fifteen participants complete bursary program.	**Achieved**: Sixteen bursaries provided during the year. This included Nuffield scholarships, travel bursaries, young scientist awards.

Above: 2014 National Seafood Industry Leadership Program graduates (from left) Jacqui Johnson—seafood industry teacher, New South Wales; Donna English—promotion and marketing officer, Northern Territory; Trent O'Brien—sales and refitting, Queensland; Nathan Adams—abalone fisher and licence holder, Western Australia; Stephanie Williams—marketing and public relations executive, New South Wales; James Florisson—research officer, Western Australia; Jane Wilson—salesperson, Queensland; Troy Billin—commercial fisher, New South Wales; Luyin (Camay) Young—inventory and procurement manager, New South Wales; Charlotte Connell—communications manager, New South Wales; Jamie Sellen—owner and manager, South Australia; Naomi Brydon—assistant director, Queensland; Patrick Sachs—liaison officer, Australian Capital Territory; and John Maloney—general manager, Queensland.

Right: Stacey Loftus has been awarded a 2015 Nuffield Scholarship, supported by the FRDC, to study marketing and branding in oyster production. She is the business manager of the family oyster farm at Wonboyn Lake in New South Wales which farms nine leases over 13 hectares, producing close to 360,000 oysters for the domestic market, mostly wholesale into Brisbane and Sydney. Stacey says historically the Sydney Rock Oyster industry has not branded or marketed itself well, a situation she wants to improve.

Innovation award to help oysters shape up

People development program: Australian Agricultural Industries Young Innovators and Scientists Awards (Project number 2008-339)

What do you look for when you shop for Sydney Rock Oysters? Plump meat sitting in a beautiful cupped shell? The perfect shell ratio for restaurants and processors is 3:2:1, according to researcher Emma Wilkie, where three is the oyster's length, two is the width and one is the depth.

As the winner of the FRDC-sponsored 2015 Science and Innovation Award for Young People in Agriculture (presented by Executive Director Patrick Hone at left and FRDC Chair Harry Woods), Emma Wilkie received a grant of up to $22,000 and will use it to research breeding oysters with this sought-after shape.

Working for the industry-owned Select Oyster Company, Emma plans to develop husbandry guidelines to improve shell shape for the $35-million-a-year Sydney Rock Oyster industry. The project will include comprehensive best-practice instructions, a cost-benefit analysis of each husbandry technique, access to seed for farmers, photos and a DVD.

The Science and Innovation Awards for Young People in Agriculture is a competitive grants program that supports young scientists, researchers and innovators to undertake a project on an innovative or emerging scientific issue. The awards are announced at the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) Outlook conference in March each year.

For further information: www.agriculture.gov.au/abares/conferences-events

Rural leaders harvest new skills

Australian Rural Leadership Program (Project number 2012/400)

Oyster farmers Ben Cameron and Jedd Routledge have more than one thing in common. They are managers of family-owned businesses with considerable history in the industry and both are participants in the 20th intake of the Australian Rural Leadership Program (ARLP).

The FRDC provided two $50,000 scholarships for the 50-day program to allow both to take part in the ARLP, which is held over 17 months and includes residential sessions in Australia and one component in India. The aim of the ARLP is to foster personal growth and assist participants to develop the knowledge, skills and networks to be effective leaders in their communities and industries. It also aims to develop 'contextual intelligence' so leaders can understand the drivers that shape rural Australia and its primary industries.

Ben Cameron is general manager at Cameron of Tasmania, and came into the family business after completing a Bachelor of Economics and a Bachelor of Arts in Public Policy and Political Science. Jedd Routledge is managing partner at Natural Oysters, based in Coffin Bay, South Australia.

Positive impact

In 2013, Ben was the recipient of the Tasmanian and the Australian Young Achiever of the Year industry award. He was motivated to apply for the ARLP because his father had been accepted for the third course, which had a major positive impact on his father's business and industry life.

Both Ben and Jedd have busy professional lives. Ben contributes to the management of several aquaculture industry bodies and for the past three years has been a director of the Tasmanian Oyster Research Council. He is also a member of the industry working group on Pacific Oyster mortality syndrome, where the goal is to support research into oyster viruses and biosecurity issues.

Jedd began his academic studies with a law degree and although he has never practiced law, it has been useful for understanding the legal framework of business. More recently, he completed a professional management program and is currently studying for a Masters in Business Administration. He is vice-president of the South Australian Oyster Growers Association and is the South Australian R&D representative for Oysters Australia. He is also director of a new company named Natural Angasi, which is in the R&D phase and focused on Native Oysters (*Ostrea angasi*).

Ben and Jedd both agree that through the course they have learned to better understand different personality types, which has made it easier to understand different points of view and individual 'filters' people might be applying, to improve team operations.

Skills and experience

Ben cites media training at the ABC [Australian Broadcasting Corporation] as a particularly useful part of the course as well as the intensive negotiation training which focuses on how to concentrate on the negotiation process for the best possible outcome rather than concentrating on winning. It is also about not missing opportunities due to lack of negotiation.

Both participants agree that the two-week Kimberley tour was an amazing start to the course: a physically and emotionally challenging experience with others who were at that time strangers but who are now part of their wide-ranging leadership network.

The course has recently become accredited and participants receive a Graduate Certificate in Rural Leadership from James Cook University, Queensland.

Applications for the next ARLP and details are available at: www.rural-leaders.com.au

For further information: Ben Cameron, 03 6253 5111, ben@cameronsoysters.com; Jedd Routledge, 0428 844 487, jedd@naturaloysters.com.au

Below: Jedd Routledge, with Ben Cameron (inset).

Students sample career choices on the water

Seafood Industry Partnerships in Schools—Phase 2 Program (Project number 2012/302)
People development program: Linking Australian schools with primary industries (Project number 2010/403)

It is not every day that students find their classroom on the deck of a boat, sailing the River Derwent, or taste-testing fresh shellfish at a local oyster farm. But for 50 Hobart-based Year 9 students this will become their reality, as part of a three-day careers education program 'Working on Water' (see photo page 75).

The initiative emerged from conversations among friends over coffee about eight years ago to become a regular event on the calendar for a diverse range of marine-related businesses and institutions.

Sam Ibbott was working as a marine scientist at the Tasmanian Aquaculture and Fisheries Institute and was one of those keen to introduce more young people to the many careers on offer in the seafood and maritime industries. The initial team included Emily Ogier, who was working at the Tasmanian Seafood Industry Council (TSIC), Kevin Redd, a PhD candidate at the University of Tasmania, and James Garde, the training manager at Seafood Training Tasmania.

The team wanted to bring together students from all schools who were genuinely interested in a marine career, not just speak to groups of students on a school excursion, many of whom were not interested.

Students were asked to apply for the program and are shown potential career pathways in marine research and management, Antarctic research, wild-catch fishing, aquaculture, naval architecture, marine policing, and tourism.

The three-day program includes visits to CSIRO's research facilities in Hobart, including the Antarctic division, and the Institute for Marine and Antarctic Studies at the University of Tasmania, along with a day on a tourist boat, touring salmon and oyster farming operations. There is also a visit to fish processing facilities where students get hands-on experience.

An FRDC-funded workshop four years ago helped those involved to evaluate why the program was successful, and how to make it sustainable so that it was not dependent on the enthusiasm of one or two people, or a huge financial impost on industry.

TSIC manages the administration and finances and participating institutions and businesses have essentially internalised the program as part of their core operations—a scheduled event in their calendars.

Although there is no formally tracking of the careers of participants, there have been some successful work placements and school-based apprenticeships with a couple of students having gone on to study marine science. The program is tweaked each year in response to feedback from students and from the Tasmanian Department of Education, which has been a strong supporter.

In recent years, careers advisers from local schools have joined students on tours, to expand their understanding of marine-related career options. The latest program included a special presentation about marine and seafood industry careers at the state's career adviser's conference.

Hobart is ideally placed for such a program, with leading research and aquaculture businesses within a 30-minute drive from the city. However, the program has also provided a model for similar initiatives including the Seafood Industry Partnerships in Schools Program in Sydney.

A copy of the program manual is available from the FRDC website—www.frdc.com.au.

For further information: Julian Harrington, TSIC, 03 6224 2332, tsic@tsic.org.au; www.primaryindustrieseducation.com.au

BCA THEME 8

An economic analysis of FRDC's investment in Theme 8: Consumers, products and markets (Part A)

Background

The Industry program (Program 2) in the FRDC's RD&E Plan 2010–15 has five themes:

- Theme 5: Governance and regulatory systems
- Theme 6: Resource access and allocation
- Theme 7: Production, growth and profitability
- Theme 8: Consumers, products and markets
- Theme 9: Value from aquatic resources

Theme 8 is concerned with satisfying consumer expectations and developing and maintaining markets. The objective of Theme 8 is production of high-quality products that satisfy expectations of existing and potential consumers.

Theme 8 is divided into two clusters, Part A and Part B. This analysis addresses Part A, including consumers/markets, products and supply chains. Part B of Theme 8 will cover quality and this is addressed in another analysis. The projects funded in Part A covered a range of industry development issues including market research, processing, market and product development, and market access initiatives. Many of the projects will result in improved demand for seafood, with most of the investment being targeted more specifically at domestically-produced product through marketing and promotion, market research, market development and improving market access overseas, improved seafood quality, and improved processing and new product development. Other projects may directly result in lowered costs along the value chain.

Summary of projects

There are 35 projects from Theme 8 Part A (Consumers, products and markets) included in this analysis.

Project no.	Project title	Total ($)
2001/231	Upgrade of national fisheries database to include images and common names of Australian fishes	315,422
2001/402	Developing case ready retail and bulk catering pack for seafood using modified atmosphere packaging (MAP) technology	36,691
2002/233	Seafood Services Australia Ltd: Adding value throughout the seafood supply chain	1,930,000
2004/401	Seafood CRC: A market access guide for seafood exporters. International residues standards	42,870

Project no.	Project title	Total ($)
2004/404	Identification of demand drivers, distribution requirements and supply chain efficiencies to assist development of the Hiramasa Kingfish™ (*Seriola lalandi*) and Suzuki Mulloway™ (*Argyrosomus hololepidotus*) brands in Melbourne	30,000
2004/412	Extending innovation in integrated environment and product management: Implementation of value chain management and traceability in the Australian Southern Rocklobster industry	30,000
2005/223	Rock Lobster Post Harvest Subprogram: Evaluation of alternative processing technologies applicable to crustaceans	353,978
2005/241	Progressing the recommendations from the scoping study report for abalone marketing and promotion	25,000
2006/213	Rock Lobster Post Harvest Subprogram: Expand and develop the Western Australia specific global lobster market database for strategic planning by Australian rock lobster industries	162,050
2006/216	Development of supply chain, distribution and communication tools to support entry of Australian Southern Rocklobster into the super-premium-fine-dining sector in the United States	560,622
2006/216.20	United States market development project: Establishing the United States market requirements	50,300
2006/217	Repositioning the Australian prawn farming industry for growth	38,480
2006/236	Seafood industry market awareness project	50,000
2006/237	Consumer research to assist growth for Australian farmed prawns	24,940
2006/239	Marketing and promotion levy for the Australian Prawn Farmers Association	27,390
2006/246	A scoping study to provide FRDC with advice on future investment options in species identification	3,000
2006/312	Omega 3 Centre development	24,400
2006/409	Case study of the Eyre Peninsula seafood and aquaculture trail	5,000
2007/203.20	Review of Seafood Services Australia: The next generation 2007–12	48,310
2007/209	Southern and Eastern Scalefish and Shark Fishery Industry Development Subprogram: Adding value to an underutilised fish species (Silver Warehou)	53,800
2007/247	Tactical Research Fund: Establish the acceptability of the Queensland Endeavour prawn as a product of choice in the Queensland domestic market	75,000
2007/249	Market investigation of the impact of rock lobster aquaculture	74,269
2007/704.20	Seafood CRC: Assessment of new market opportunities and development of effective market penetration strategies for Australian Southern Rocklobster in the United States, Middle East and Europe	16,941
2008/224	Australian Mussel Association—formation and levy setup	61,446
2008/753	Seafood CRC: Oyster Consortium marketing projects investment meeting	5,382
2008/776	Seafood CRC: South Australian Marine Fin Fish to Europe Market Development Plan	15,833
2008/909	Seafood CRC: Market access for abalone	51,246
2009/215	Development of an independently driven production reporting and forecasting survey for Australian farmed Barramundi	5,000

Project no.	Project title	Total ($)
2009/216	Tactical Research Fund: Tracking the impacts on seafood consumption at dining venues arising from the Northern Territory's seafood labelling laws	75,000
2009/723.20	Seafood CRC: Analysis of product differentiation opportunities for Australian Wild Caught Abalone in China—Stage 1	83,605
2009/742	Seafood CRC: Farmed prawns in Brisbane and Sydney—a consumer study	4,100
2009/752	Seafood CRC: Overseas market access for shellfish	5,001
2009/786	Seafood CRC: Commercial value chain analysis of the Spencer Gulf and West Coast prawn fisheries (domestic retail and restaurants)	53,090
2010/716	Seafood CRC: Consultation with the Southern Rocklobster industry on market development opportunities	17,705
2010/760	Seafood CRC: Abalone Council of Australia market intelligence study tour to Beijing, China— combination industry bursary, research travel grant and student internship	10,575
		4,366,446

Source: FRDC project management database.

Public versus private benefits

The investment will result in both public and private benefits. On the basis of the eight benefits listed, and equal weighting for each benefit, it could be concluded that public benefits to Australia could make up 50 per cent of the total Australian benefits. If the subjective weightings are taken into account, the public benefits would still make up 33 per cent of the total Australian benefits.

Distribution of benefits along the supply chain

The private benefits and costs from increased demand for seafood and from lowered costs (and higher incomes) of seafood producers could be captured initially anywhere along the supply chains. However, these costs and benefits will most likely ultimately be shared along the supply chain participants, including seafood consumers.

Benefits to other industries

It is likely that most industry benefits will be confined to the seafood industry.

Benefits overseas

It is likely that there may be some small spillover benefits to overseas interests, mainly in the form of product access and quality.

Additionality and marginality

The investment in the projects in this cluster has been categorised as of medium priority. FRDC contributed 50 per cent of total funding for the whole cluster but this percentage varied considerably for individual projects.

If FRDC had not received funding from government, some of these investments would probably still have been supported by FRDC but to a lesser extent. Some investments may have been funded from other sources if FRDC had not contributed.

Observations for future investment and evaluation

1. The FRDC project management system was found valuable in being able to easily extract funding information by project by financial year across a range of individual R&D areas. However, an improvement would be if summary tables of financial contributions could be made with regular alignment of columns of financial years, FRDC contributions and contributions from other funds and sources.
2. The ratio of FRDC nominal funding to total nominal funding for projects in this cluster was 50 (FRDC) to 100 (total) or 50 per cent. This was above the average percentage of 40 per cent found for 18 clusters in 2009. The percentages for each cluster are worth summarising as they may be important in assessing the FRDC's current and prospective roles in different R&D areas and where public benefits manifest but external funding is difficult to attract.
3. A number of projects in this cluster were associated with issues that could be termed industry 'management and industry organisational issues', rather than R&D issues. In that regard such issues should be the complete responsibility of, and funded by, the industry. However, it could be argued that assistance from the FRDC in addressing such issues made some contribution to the facilitation and augmentation of more effective R&D investment in that industry.

Key performance indicators

The number of projects in the cluster that contribute to the Theme 8 key performance indicators (KPIs) is shown below.

KPI	Description	No. of projects
1	Development of knowledge and technologies to support the industry's development of new products	8
2	Development of knowledge and technologies to improve seafood value chains and support trade and market access	31

Four of the 35 projects were considered to have contributed to both KPIs. Twenty seven projects contributed only to the second KPI and four projects contributed only to the first KPI.

Conclusion

Investment was made in a total of 35 projects within the cluster and FRDC contributed approximately 50 per cent of the total nominal costs of investment.

On the basis of the eight benefits listed in the analysis, and equal weighting for each benefit, it could be concluded that public benefits to Australia could make up 50 per cent of the total Australian benefits. If the subjective weightings are taken into account, the public benefits would still make up 33 per cent of the total Australian benefits.

The three principal benefits valued from this cluster of projects were enhanced demand for seafood, reduced costs along the supply chain, and improved research resource allocation. Of the 35 projects, 31 projects would have contributed to varying degrees to increased demand, 14 projects to reduced costs and three projects improving research resource allocation. Some projects were considered to contribute to more than one category of benefit. Also, a number of projects potentially contribute to ecosystem/environmental implications and some contributed to capacity building.

Overall, the investment criteria estimated for total investment of $15.9 million (present value of costs) in the cluster were positive with a present value of benefits of $30.4 million, a net present value estimated at $14.5 million and a benefit-cost ratio of 1.9 to 1, all estimated using a discount rate of 5 per cent.

PROGRAM 5: EXTENSION AND ADOPTION

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

Principal inputs

During 2014–15, there was 1.65 million (about 7 per cent of the FRDC's R&D investment) invested in R&D activities within this program.

Summary of performance indicators for Program 5

Strategic challenge	Performance indicator	Target	Achievement
Extension and adoption	Increase in rates of adoption.	Eighty per cent of projects complete extension strategies at start of project.	**Achieved**. Extension strategies completed for over 80% of projects funded in 2014–15.

Culinary young guns tour Tasmania

Appetite for Excellence program and producer tour (Project number 2014/504)

No exploration of Tasmania's finest food offerings would be complete without seafood and seafood was the theme of the first day of the week-long culinary expedition around Tasmania held for the national finalists in the Electrolux Appetite for Excellence Young Chef and Young Waiter awards.

During the tour, the young leaders of Australia's hospitality industry had the opportunity to taste and discuss a broad range of food with the primary producers who grow, catch and cultivate it. The tour is sponsored by the FRDC, Meat & Livestock Australia, Australian Pork Ltd and Dairy Australia, and included visits to producers of oysters, lamb, dairy foods, wine and Atlantic Salmon.

For the FRDC showing these young food professionals where the 'ingredients' come from and that Australian fishers and farmers are using some of the best research, development and practices in the world to underpin the effort that goes into their production is important. Knowing Australian seafood is being sustainably produced based on science is also vital for those who grow or harvest it.

The opening day was spent at Huon Aquaculture with an on-water tour was followed by product tasting and a presentation on all aspects of Atlantic Salmon farming. Huon Aquaculture conducted the tour, which included the opportunity to inspect their new salmon pens, which have been designed to be better for both the people working on them, and the fish swimming in them.

The Appetite for Excellence tour used one of Robert Pennicott's wilderness journey boats to get out on the water to see the salmon pens. While this was not a normal trip for the tourism operator's crew, it provided them with an opportunity to extend their knowledge of the aquaculture industry, which they see almost every day.

Oyster life cycle

The tour then visited oyster supplier Cameron of Tasmania at Eaglehawk Neck looking at all aspects of the business. The group was shown around by Ben Cameron who is also undertaking the Australian Rural Leadership Program—see page 77.

The group saw both the land-based operation sites and the lease on the water, gaining an overview of oyster production from grow-out, through to harvesting and processing. To complete the tour of Cameron's fully vertically-integrated business, the group called into the Dunalley hatchery (one of the few buildings in this area to survive the 2013 bushfires), for an explanation of the oyster-growing process.

Closing out the day, chefs had an opportunity to showcase their culinary skills by cooking some top-quality Tasmanian seafood—Huon Atlantic Salmon, flathead, Gummy Shark, scallops, Spring Bay Blue Mussels and Cameron of Tasmania's Pacific Oysters—for members of the local seafood industry.

Long-time supporter of the Appetite for Excellence tour, the Parliamentary Secretary to the Minister for Agriculture and Senator for Tasmania, the Hon. Richard Colbeck, attended the dinner.

A participant in the first Appetite for Excellence tour of Tasmania in 2006, Senator Colbeck said it was a great initiative, educating the chefs and the hospitality industry on where produce came from. He said it was important they knew the work and research that went into primary production in Australia.

Industry participation

Several fishing industry representatives also attended dinner with the finalists to add their views on the seafood industry, including Ian Cartwright, Australian Fisheries Management Authority commissioner (and former FRDC director), Martin Excel, general manager of environment and policy with Austral Fisheries, and Pheroze Jungalwalla, chair of the National Aquaculture Council.

Ian Cartwright noted it was "an inspirational event" and a "wonderful showcase for Tasmania and Tasmanian seafood production".

Martin Exel said he felt it was great for the finalists to gain an insight into not only salmon and oyster production but also the complexity of fisheries in general.

Pheroze Jungalwalla took the opportunity to highlight public perception as the single biggest issue facing fishing and aquaculture. He said people in the hospitality industry, such as the finalists, had an important role in delivering good messages about seafood. He commended the FRDC for organising the tour, saying that such events are great for the education of both sides of the production–consumer fence.

Peter Horvat, FRDC's Communication Manager said "The finalists are the next generation of opinion leaders in the food sector and we want to help educate them about what producers are now doing … Programs like this are not only good for the finalists but also for the primary producers. They get a direct link with people who are cooking with their product, as well as with the front-of-house staff who are engaging with the consumer."

The Electrolux Appetite for Excellence program was established to identify, recognise and nurture the finest emerging young talent within the Australian food industry.

For further information: www.appetiteforexcellence.com

Whale watch for rock lobster fishers

Tactical Research Fund: Cost-benefit analysis of mitigation measures to reduce interactions between commercial fishing gear and whales (Project number 2013/037)

Mitigation measures to reduce entanglements of migrating whales with commercial fishing gear (Project number 2014/004)

The rise in whale numbers along Western Australia's coast has prompted new research to reduce the risk of entanglements in fishing gear. The West Coast Rock Lobster Managed Fishery in Western Australia has been a spectacular success story since moving from an input control management system to an output (or quota) control management system in 2010–11.

The quota system with a year-round fishing season has allowed fishers to spread the catch throughout the year. In doing so, higher beach prices have been maintained. Fishers now fish to demand and catch the amount and sizes that will deliver the best profit. It has also contributed to a healthier rock lobster population.

But the year-round fishing has also coincided with an increase in the number of whales getting caught in rock lobster fishing gear. Since 1990, there have been 130 entanglements recorded in Western Australia; of these, 128 involved commercial fishing gear. There has been a dramatic increase in the number of whale entanglements in commercial gear since 2010. In 2013, there were 18 reported entanglements in lobster gear, well above the long-term average of whale entanglements for this fishery, which until then was between zero and four per year.

Entanglements can lead to injury or death of the animal (although no deaths have been recorded as being caused by rock lobster gear), sometimes many hundreds of kilometres from the initial site of the entanglement. Whales are a protected species under Australian legislation and the West Coast Rock Lobster Managed Fishery is acutely aware of the need to reduce the number of entanglements.

The industry is working collaboratively with researchers, as part of an FRDC-funded project, to trial measures including modifications to fishing gear, technologies such as audio pingers and acoustic or anode remote release systems.

Researchers know whales move through the Western Australia coast from May to November. The rock lobster season ends in June, by which point there is not a lot of fishing occurring, with low catch rates and poor weather conditions. So most whale migration occurs when no one is out fishing. However, the change to the rock lobster season length cannot be the only reason for the increase in entanglements.

It is clear there are a lot more whales in the region. The Humpback Whale population that uses the Western Australian coast is one of the fastest recovering whale populations in the world. Humpback Whales account for more than 90 per cent of entanglements with rock lobster gear.

Researchers suspect that differences in the timing of entanglements between years may be the result of changes in the timing of whale migrations, which have seen whales arriving on the west coast later than in other years, or weather conditions that may exacerbate entanglements. The FRDC is funding further research to evaluate the impact of these issues.

Industry assistance has also been encouraging. While it would be good to have more feedback from fishers, several have taken time and considerable effort to test the new gear and undertake a number of surveys. Industry is working strongly with government to find a solution which is for the good of both the industry and the whales.

Phone app to assist in research

As part of the project, a phone app was developed and allows users of Western Australia's coastal waters to assist with whale migration research, by reporting sightings on their smart phones. The app will help researchers learn more about whale movement patterns and assist in ongoing work to reduce the potential for entanglements with fishing gear.

'Whale Sightings WA' enables water users to submit their sightings of whales along the coast. While an android is being developed the present version can be downloaded for free from iTunes—https://itunes.apple.com/au/app/whale-sightings-wa/id897799081?mt=8

For further information: Jason How, 08 9203 0247, jason.how@fish.wa.gov.au

Crab app enhances fisheries monitoring

Biological and fisheries data for managing deep sea crabs in Western Australia (Project number 2001/055)
Tactical Research Fund: Establishing industry catch sampling for Western Australia's Crystal Crab fishery (Project number 2011/254)

A new smartphone app that allows commercial crab fishers to collect detailed, near-real-time catch data is proving a cost-effective alternative to traditional monitoring.

Take a pair of Vernier callipers, add wireless Bluetooth capacity and link it to a smartphone data-recording app and what emerges is a new tool that is revolutionising monitoring for Western Australia's Crystal Crab fishery.

It allows for the ongoing gathering of information as fishers fish across the entire fishery, which spans more than 1000 kilometres of coastline from Fremantle north to Carnarvon. It is a tool that has the potential to be adapted for the monitoring of a wide range of other crustaceans, according to scientists leading the project at the Western Australian Department of Fisheries.

Crystal Crabs (*Chaceon albus*) are endemic to Western Australia, and are part of the West Coast Deep Sea Crustacean Managed Fishery. The species is slow-growing, lives for up to 30 years and is highly sought after by seafood connoisseurs. They are considered one of the best-tasting crab species; the tender, white flesh has a subtle, sweet taste, thought to be a result of the deep, cold and clean water in which they live.

But collecting high-quality catch data to assist with stock assessments, while keeping monitoring costs down, has been a major challenge for the fishery.

Catch length and frequency data are essential for stock assessments and setting catch quota. In the past this has been collected by research technicians from the Western Australian Department of Fisheries. However, the size and sex ratios of this species vary with depth and location, so data collected a few times a year by technicians was not seen as representative of the entire fishery.

Given the distances involved, and that there are relatively few boats in the fishery, these monitoring trips are also prohibitively expensive.

Seeking to overcome these challenges, Curtin University researcher Roy Melville-Smith has led an FRDC-funded project to develop a more comprehensive and cost-effective monitoring system. The system that emerged from the project is called the iCalliper sampling system. It has adapted the widely-used Vernier callipers, fitting them with a Bluetooth function that links with a smartphone via a specially designed app.

This app enables the size and sex of the crabs to be combined with the date, time and location-recording capabilities of smartphones. The result is a system capable of capturing and transmitting high-quality data to scientists hundreds of kilometres away in Perth, whenever fishers return to land.

Modifications to the callipers were made based on fisher feedback to make the system as user-friendly as possible, and to ensure fishers could collect data efficiently without hindering their own operations. This included changing touch-screen switches that were too sensitive for rough sea conditions and relocating buttons on the equipment so that those used most often were within closest reach.

The Western Australian Department of Fisheries oversees the crustacean fishery monitoring program and the usability of technology is crucial when the department seeks assistance from fishers with monitoring activities. Researcher Jason How relies on the fishing industry to supply information, so making data easy to collect is vital to the project.

Further developments

The data the department has received in the year since the iCalliper system was introduced has been both good quality and useful in monitoring efforts and there are now plans to modify the system to further enhance its usefulness.

The changes would allow fishers to record additional inputs for undersized crabs captured in modified research mesh pots. With this information, researchers can better understand the numbers of animals moving into the fishery and will have more certainty about how the fishery is performing.

This recruitment data will be particularly useful for the Crystal Crab fishery in Western Australia as it prepares to undergo Marine Stewardship Council certification.

The ability of the iCalliper system to gather information more efficiently and to reduce the cost of monitoring means it also has great potential for other fisheries. With a few minor modifications, it can be used in a suite of monitoring activities for all crustacean fisheries in the state, or across Australia.

For further information: Jason How, 08 9203 0247, jason.how@fish.wa.gov.au

From research to real world—
Australian Marine Sciences Association conference

People development program: Sponsorship of AMSA student prizes (Project number 2008/351)

Collaborative research and practical benchmarks to assess the success of fisheries management were among key topics for discussion when the nation's marine scientists came together for the 51st annual Australian Marine Sciences Association (AMSA) conference.

The importance of interdisciplinary interactions was highlighted during the conference, which was held in Canberra in July 2014, with the theme of 'Investigating our marine nation'.

The event drew 330 researchers from around the country, representing diverse scientific disciplines. Ngunnawal Elder Judy Barlow provided an official welcome and AMSA patron Joe Baker urged participants to "cross boundaries" and network with researchers from other disciplines. Australia's Chief Scientist Ian Chubb's opening address focused on the importance of nurturing the scientific disciplines underpinning marine science, including mathematics, chemistry, physics and biology.

Over the four days of the conference, more than 260 presenters contributed to 21 sessions. The plenary speaker was the director of meteorology and chief executive officer of the Bureau of Meteorology (BoM), Rob Vertessey, who outlined the many synergies between meteorologists and marine scientists and described BoM's marine services that could be of use to researchers. Climate-related themes were also part of the conference's dedicated fisheries session, sponsored by the FRDC.

For further information: Australian Marine Sciences Association, www.amsa.asn.au

Connectivity science claims AMSA Award

Sponsorship of the AMSA Fisheries Symposium "Beyond jurisdiction-based fisheries stock management" (Project number 2013-303)

At the awards dinner on the final day of the AMSA conference (see story above), the FRDC's Executive Director Patrick Hone presented the FRDC AMSA 2014 Student Award to John Ford (at right of photo), for his presentation 'Empirical evidence for source-sink dynamics in a marine fish meta-population'.

The presentation, based on John's PhD research, focused on the connectivity among fish populations.

"When fishing a species with many separate stocks, it is important to understand to what degree those stocks are connected. How are the stocks reliant on one another? Does fishing one stock affect the other? From a fisheries management perspective, it is critical to effectively manage the more productive populations because any decline in these will also affect the less productive populations they are connected to," John explained.

John was able to successfully evaluate the dynamics between more-productive and less-productive fish populations by directly observing them, rather than through computer-modelling studies. He conducted counts of the Southern Hulafish (*Trachinops caudimaculatus*), which is an important prey item for snapper and Southern Calamari (*Sepioteuthis australis*) in Port Phillip Bay, Victoria, over five years.

By tracking natural chemical markers in fish otoliths (ear bones) he was able to estimate the connectivity among different Southern Hulafish populations and was able to identify two important source populations in Port Phillip Bay. This provided a strong framework for applying his theory to other more commercially valuable fish species.

After finishing his PhD, John is now working at the University of Melbourne, leading an FRDC-funded project titled 'Using local knowledge to understand linkages between ecosystem processes, seagrass change and fisheries productivity to improve ecosystem-based management'. The project partners with commercial fishers in Corner Inlet, Victoria, and the West Gippsland Catchment Management Authority to harness the knowledge of fishers for improved catchment management and maintenance of healthy seagrass and sustained fisheries productivity.

He says he would like to continue to engage fishers in management stewardship and conservation through his current project, and to boost fisheries productivity through the restoration and rehabilitation of important habitat such as oyster reefs.

For further information: John Ford, 03 9035 6112, jford@unimelb.edu.au

Crossover congress success

Australian Society for Fish Biology: Promoting scientific exchange and supporting early career researchers (Project number 2013-404)

Traditionally focused on the technical and biological details of fisheries, a recent joint Australian Society for Fish Biology (ASFB) and Australian Society for Limnology (ASL) congress urged researchers to consider the potential of combining traditional knowledge with science.

The congress held in Darwin from 30 June to 4 July 2014 was a resounding success and brought together scientists, researchers, industry and management agencies from across the marine and freshwater spectrums. The ASFB was founded in 1971 and provides a collegiate and supportive atmosphere for researchers. The FRDC is a proud supporter of the ASFB, and has sponsored its yearly conference for the past decade.

The opportunity this year to integrate with the ASL was welcomed—and this first joint congress was clearly useful, with strong crossover between the two fields noted. There was a clear intention from participants to continue the collaboration. More than 330 delegates from both societies attended, and more than 300 talks and posters were presented.

The plenary session for the joint congress, inspired by a special session at a previous ASFB conference, focused on indigenous involvement in fisheries research and management. The plenary was inspiring, with presentations from indigenous researchers, managers and traditional owners from around Australia, and from New Zealand and Canada.

Society members were proud of the success of the plenary given its non-technical and non-biological focus—a novel approach for the ASFB.

The focus of the conference was very much on the interaction between scientific study and end users, management, and local and indigenous communities who benefit from (or are affected by) the outcomes or process of research. A key theme of the congress overall was that statistical, mechanistic and qualitative models on their own are insufficient, and crossover between all three is needed to achieve useful results.

For further information: www.asfb.org.au

BCA THEME 7

An economic analysis of FRDC's investment in Theme 7: Profitability

Background

The Industry program (Program 2) in the FRDC's RD&E Plan 2010–15 has five themes:

- Theme 5: Governance and regulatory systems
- Theme 6: Resource access and allocation
- Theme 7: Production, growth and profitability
- Theme 8: Consumers, products and markets
- Theme 9: Value from aquatic resources

Theme 7 is part of the FRDC's Industry program, the main priorities of which are to promote the development of new and existing technologies, improve the productivity and profitability of existing industries while supporting the development of new ones, and to better understand and respond to domestic and international market and consumer requirements. Investment in the Profitability cluster aims to support the broad objective of Theme 7, which is to 'increase the gross value of production, profit margins, productivity and opportunities throughout the fishing and aquaculture industry' (FRDC, 2010).

Input costs, market prices, biomass levels, management arrangements and sustainability concerns all play a role in influencing profitability, both at an individual and sector level. This wide range of relevant factors means there is an ongoing need for research which targets key drivers of profitability, and identifies where investment may achieve the best outcomes in terms of improved profitability.

One key driver of profitability for wild-catch fishers is energy costs. This has led to a great deal of interest in identifying ways to reduce the impact of rising fuel prices. Several projects worked to achieve this goal by identifying how energy usage could be monitored and improved, as well as investigating the possibility for the use of alternative fuels and propulsion systems.

Projects in this cluster targeted a wide variety of industry sectors, with some focusing on specific fisheries while others addressed broader issues relevant to the entire industry. Particular research areas included developing new techniques for value-adding waste products, assembling data for better-informed decision making, and developing methods for variable cost reduction.

Summary of projects

There are 14 projects in the Profitability cluster.

Project no.	Project title	Total ($)
2002/250	South East Fishery Industry Development Subprogram: Agricultural trials of a fish-based fertiliser (BioPhos) produced from Australian seafood processing wastes	543,784
2003/206	Antifouling solutions for the Australian pearling industry—coatings for shell and equipment	350,273
2003/213	Rock Lobster Enhancement and Aquaculture Subprogram: Establishing post-pueruli growout data for Western Rocklobsters to assess economic viability	759,195
2005/217	Rock Lobster Enhancement and Aquaculture Subprogram: The feasibility of translocating rock lobsters in Tasmania for increasing yield	19,739
2005/239	Fishing energy efficiency review for the FRDC	26,610
2006/211	Rock Lobster Post Harvest Subprogram: Examination of green sustainable process technology for preparing chitin and associated derivatives from rock lobster waste	110,846
2006/212	Rock Lobster Post Harvest Subprogram: Development of bait saving strategies for the Western Rocklobster fishery	45,788
2006/229	Southern and Eastern Scalefish and Shark Fishery Industry Development Subprogram: Development and implementation of an energy audit process for Australian fishing vessels	60,000
2007/200	Southern and Eastern Scalefish and Shark Fishery Industry Development Subprogram: Alternative fuels for fishing vessels	137,292
2007/238	Ornamental Fish Industry in Australia 2006/07	70,106
2007/241	Feasibility study for the use of biofuel for the Western Rocklobster industry	70,000
2007/250	Increased economic efficiency for the Western Rocklobster fishery through improved pot design	135,454
2008/099	Tactical Research Fund: Torres Strait Tropical Rocklobster fishery five-year business plan	75,000
2009/221	Tactical Research Fund: Improving the economic efficiency of the Southern Squid Jig Fishery	75,000
		2,479,087

Source: FRDC project management database.

Distribution of benefits along the supply chain

The majority of private benefits will be captured initially by fishers and aquaculture producers. Some benefits (and costs) may be shared along the supply chain, including to consumers of seafood products.

Benefits to other industries

The projects in this cluster had the potential to benefit producers of a range of products including organic foods, fertilisers, pharmaceuticals and alternative fuels. However, for the most part such benefits have not been realised. As such, actual benefits to other industries are expected to be minor.

Benefits overseas

The majority of projects were focused on specific Australian fisheries, or analysed generic issues in an Australian context. There may be some minor benefits to overseas parties from projects such as 2003/206; however these benefits are not expected to be significant.

Observations for future investment and evaluation

A number of projects evaluated had been completed a long time ago, with many years having passed since project completion. In the case of some of these projects, researchers had moved into other research areas and had not kept track of their research after its completion.

The 14 projects included in this cluster spanned a wide variety of industries and issues, and in many respects most did not seem to have much in common except that they concerned profitability. Projects ranged from scientific trials of new technologies, through to desktop feasibility studies and information gathering exercises. Such a grouping can be seen as working against one of the purposes of clustering. The disparate nature of the projects not only contributes to greater difficulties in impact valuation, but also potentially decreases the value of the analysis in providing useful input for strategies regarding future investment priorities.

Key performance indicators

The number of projects in the cluster that contribute to the Theme 7 key performance indicators (KPIs) is shown below.

KPI	Description	No. of projects
1	Development of knowledge, processes and technologies to improve productivity and profitability of the commercial sectors	9
2	Development of knowledge and technologies in the areas of domestication and breeding genetics to support growth of the aquaculture sector	1

Of the projects in this cluster, 10 were deemed to be directly contributing towards the theme's key performance indicators. The four which did not make a direct contribution provided information which could be used as a basis for further research and policy making, and as such may have contributed in an indirect manner.

Conclusions

FRDC investment in the Profitability cluster produced a range of mainly productivity and capacity-building benefits. These benefits were primarily economic in nature, although some social and environmental benefits were delivered via an increase in scientific capacity and a reduction of some environmental impacts. Three benefit categories were identified. Of the 14 projects in the population, only four contributed to the impacts that were valued, with three of these projects contributing to the principal benefit valued, that of fuel-efficiency gains leading to increased profitability of wild-catch fisheries.

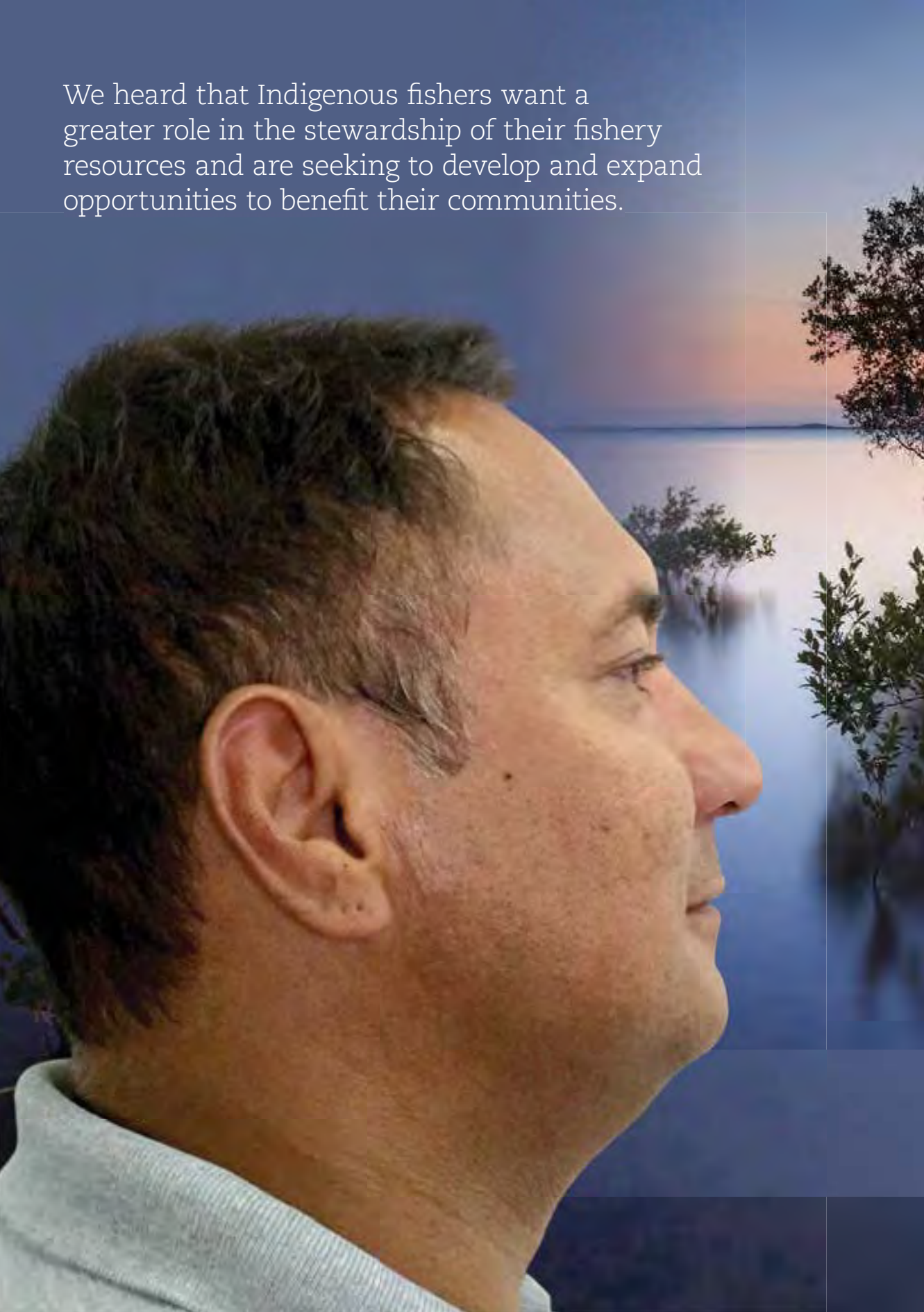
The fuel-efficiency projects were commenced amid unprecedented rises in fuel costs. Fuel prices have since backed off somewhat, leading to a reduction in enthusiasm for research in that area. However when the next cyclical price rise/price shock occurs, interest may resurface.

The majority of projects in this cluster produced usable outputs, however in some cases there was a failure to translate research outputs to lasting outcomes and benefits. Common reasons for this included a change in market conditions, opposition from certain industry sectors, emergence of superior technology, and other unforeseen factors which reduced the attractiveness of the usefulness of research outputs.

Overall, the investment criteria estimated for total investment in the cluster of $7.05 million (present value of costs) were positive with a present value of benefits of $12.98 million, a net present value estimated at $5.93 million and a benefit-cost ratio of 1.84 to 1, all estimated using a discount rate of 5 per cent and with benefits estimated over 30 years from the final year of investment.

The FRDC Board visited the Darwin Aquaculture Centre in June 2015 and were shown how aquaponics can successfully integrate growing fish and plants (basil in this case).

We heard that Indigenous fishers want a greater role in the stewardship of their fishery resources and are seeking to develop and expand opportunities to benefit their communities.



Report of Operations Part 3
Services

MARKETING

Promotional possibilities for fishing and seafood

The *Rural Research and Development Legislation Amendment Bill 2013* was passed by Federal Parliament on 12 December 2013. It extends the scope and range of activities the FRDC can undertake by amending its enabling legislation, the PIRD Act. The legislative changes now allow the FRDC to link RD&E to marketing, as part of a natural progression to improve outcomes for the industry.

An important component of the change is the requirement that the FRDC can only use funds collected for marketing for marketing activities. The FRDC will ensure a separation of funds between activities.

Building a seafood marketing plan

Translating industry's thoughts about marketing into action that will add value to Australia's seafood harvest is one of the next big challenges for the FRDC.

A key for FRDC is to understand the long-term aspirations of separate businesses and of the 'whole' industry as well as identifying priorities. What is industry ultimately prepared to invest for marketing its seafood and products?

The FRDC will embark on a long journey to gather the industry's views. FRDC wants to hear what fishers and farmers want and we welcome their input in any way they want to provide it, whether it is face-to-face when we are visiting, over the phone, or sent to us as a hand-written note or e-mail.

Marketing Function Advisory Committee

Undertaking an extensive engagement program requires not only good planning but also good industry knowledge and support. The FRDC will coordinate a group of industry representatives to assist with this. The Marketing Function Advisory Committee brings together individuals who represent producers (licence holders and fishers), companies (small to large), various sectors and representatives of the supply chain.

Industry views

The industry's views will form the foundations of a marketing business plan that will encompass broader market issues that apply to all sectors, such as supply chains, market data and how to fund market activities. The plan will also encompass specific industry-sector needs such as product awareness. 'Love Australian Prawns' is a successful example of a product-awareness campaign.

The FRDC wants to build a long-term platform for industry marketing. The platform should ensure any marketing investment is:

- overseen with strong governance,
- strategically focused,
- disciplined in its approach,
- based on solid market information,
- able to quantify its success,
- strongly linked to enterprise level investment,
- evaluated and monitored regularly and consistently.

Engagement process

The FRDC aims to engage with as many industry sectors as possible to gain their views. To achieve this, a four-stage process will be used.

- The first stage will be to work with the Marketing Function Advisory Committee to obtain its input on the engagement process and to fine tune it, to make it as effective as possible.
- Stage two will be to work with several key stakeholder groups who have already begun some marketing initiatives, so that lessons can be learned from their experiences. These groups include Australian prawn farmers and fishers and Barramundi farmers, the abalone industry and rock lobster groups. In addition, the FRDC will identify some cross-sector groups such as the wholesale markets and cooperatives to gain some broader views.
- During stage three, the FRDC will use market research to gather opinions from about 300 key seafood companies and licence holders.
- Stage four will run in parallel with stage three and will see FRDC staff talking to industry at all levels, from fishers through to industry councils, whenever possible (face-to-face meetings, phone calls and e-mails).

Any marketing activity the FRDC undertakes will only occur and be in response to what industry wants. FRDC's job is to ensure that the necessary systems are in place to make informed decisions about what will work best and then measure the results.

Building the system

A key long-term requirement for any marketing activity is to gain a baseline of consumer and market data and knowledge. This includes production volumes, sale prices along the supply chain, and customer preferences—such as what they want, when they want it, how much they will pay for it and, most importantly, what motivates them to purchase a seafood product.

The infrastructure and marketing system does not need to be complex. At present, the FRDC is working on three areas: market data, evaluation and funding approaches. The FRDC is researching how industry can get accurate real-time sales (market) data.

The 'Love Australian Prawns' campaign is a good example of where targeted research and data collection worked well. The research showed that consumers loved Australian prawns and saw them as having a special place on their menu—a treat for special occasions. Preserving that sense of 'something special' was important to consumers.

As well as understanding consumers' views, it is also important to develop a solid evaluation method for marketing activities. The approach that needs to be used will largely depend on the type of marketing. For example, for a campaign solely focused on increasing sales volume, sales data will provide a good indication of success. However, activities that aim to improve the consumers' perception will be much harder to evaluate. The FRDC is looking to develop a suite of evaluation tools that industry can use for these purposes.

Have your say

The FRDC is always open to hear from the whole industry on what the key issues are. As an organisation we will be out and about visiting many sectors and individuals. If you are keen to let us know what you think sooner than we get to your neck of the woods or to get some more information visit the FRDC marketing site (www.frdc.com.au/marketing) or contact us via:

- **Face-to-face**: FRDC attends a wide range of industry events to talk and discuss this initiative. FRDC is willing to meet with any sector or individual to discuss marketing
- **Social media**: FRDC has been posting 'thought starters' and seeking feedback from stakeholders.
- **Telephone**: FRDC is open to stakeholders calling to provide feedback.
- **Direct mail/e-mail**: FRDC has been receiving a steady flow of e-mail from stakeholders.

Contact details are on the inside back cover of this report.

For further information: Peter Horvat, 02 6285 0400, peter.horvat@frdc.com.au

Industry has its say on seafood marketing

Industry support for marketing initiatives is growing, building on early market research and the positive progress of initial industry campaigns.

The FRDC now has a clearer understanding of what industry wants at the individual company, sector and national level following the completion of one of the largest industry surveys the FRDC has undertaken.

The FRDC has spent six months gathering the industry's views, and has met face-to-face with many people, businesses and sectors, listening to what fishers and farmers want.

In addition to the face-to-face meetings and many e-mails and discussions on social media, the FRDC commissioned a stakeholder survey, which began in late 2014 and was completed in February 2015.

In total, 274 seafood industry members participated—comprising 72 of the top 300 companies and a further 202 smaller business.

The survey was part of FRDC's program of research that aims to obtain direct feedback from industry. In the latest survey a series of specific questions on marketing were included. The marketing questions aim to provide the FRDC with some quantitative and qualitative data for the development of a national seafood marketing framework.

Is a national plan important?

It is very clear that the majority (80 per cent) of stakeholders are supportive of the need for a national marketing plan. However, just over half (53 per cent) are convinced that it can be achieved. Key to this is the frequent comment and belief that fishers are fiercely independent and protective of their patch. However, most also agree that this needs to change if the industry is to succeed.

More importantly, almost half (45 per cent) indicate that they are willing to financially contribute to a national marketing plan. This also reflects the number of industry stakeholders who already invest in marketing (44 per cent).

The three key areas industry indicated as priorities for marketing are:

- ensuring the public has a positive perception of the industry,
- developing export markets,
- promoting and advertising seafood products.

The top responses shows that marketing is clearly a major focus; however, the need for market-focused RD&E also features strongly.

Education of consumers, development of quality standards and ensuring seafood safety all form part of the suite of activities that underpin marketing.

The results provide a clear direction on where the industry at a national level wants to head. At the company or sector level it is a slightly different story. The two key areas industry is keen to invest in are advertising their business or sector and promoting the quality of product to customers.

Another key indicator of where industry wants to invest is evaluation, with increased sales and profitability being the main measure of return on investment This clearly shows that community perceptions are only seen as a priority at the national level.

Further details are available in *FISH* magazine, volume 23, number 2, June 2015.

Marketing framework

The FRDC will use feedback from industry and stakeholders to begin drafting a national seafood marketing framework. This will encompass the broad range of activities that link to, and form part of, an integrated approach to marketing including: consumer research, quality systems, food safety, and campaign planning and evaluation. In addition, national and sectoral marketing plans will be added as they are developed.

Once a draft is completed it will be available for public comment on the Seafood Marketing website: http://seafoodmarketing.frdc. com.au

Marketing levies development

As part of developing the appropriate systems and knowledge, the FRDC has met with the Levies area of the Australian Department of Agriculture. The meeting was to establish a clear picture of the processes, steps and time frames required to put in place a statutory levy, in case industry decides to go down this path.

The Australian Government is reviewing levies, with several inquiries underway (or recently completed) including the industry structures and systems governing the imposition of, and disbursement of, marketing and RD&E levies in the agricultural sector.

Prawn farmers to pave path to market

In October 2001, the Australian Prawn Farmers Association (APFA) became the first (and only) organisation to put in place a statutory R&D levy.

APFA are now looking to work towards a more formalised way to collect marketing contributions from members. The first steps will be to establish a marketing committee and define a strategy and governance framework for the future.

The APFA Board, R&D committee and members all understand and appreciate the benefits that have come from taking this step. The next step for the organisation is to begin work on putting the same process in place for marketing contributions and the APFA will work with the FRDC to develop a strategy and consultation timetable to speak with members.

For further information: Helen Jenkins, helen.jenkins@apfa.com.au

Australian Wild Abalone™

The Abalone Council Australia (ACA) has started discussing an abalone marketing levy with a view to funding the continuation and expansion of the Australian Wild Abalone™ (AWA) program.

Over the past five years, a small team has been conducting RD&E activities in China (including Hong Kong), and more recently Singapore and Japan, regarding AWA™. This important and timely research project was initiated by the ACA in 2010 and has been supported with RD&E funding provided by the FRDC and the Seafood CRC.

The market research has underpinned the development of the AWA™ program. The program includes the AWA™ certification trademark, supply-chain education, brand-protection technology through NanoTag Technology® and other tamper-evident packaging, preparation of submissions to government negotiating free trade agreements (in collaboration with Southern Rocklobster) and funding risk assessments by SafeFish. Taking this holistic approach has put in place a solid foundation for future activities.

From research to marketing

As the AWA™ program transitions from an RD&E project to full commercialisation, the time has come for it to stand independently, with funding sources transitioning from RD&E (the FRDC and the Seafood CRC) to marketing and promotion.

If the Australian abalone industry wants the AWA™ program to go forward and promote Australian wild-caught abalone products on a global stage into the future, industry needs to establish a dedicated funding mechanism.

Managing the next steps is critical for the long-term success of the program. It is important that all abalone industry stakeholders are properly informed about what has been happening so far with the AWA™ program and the activities planned for the future.

Regular updates about the program have been provided to all Australian abalone stakeholders, meetings have been held in each of the abalone-producing states and hosting briefing sessions with stakeholders—abalone divers, licence and quota owners, processors and exporters. Briefing sessions have taken place across the country, including in Hobart, Port Lincoln (South Australia), Fremantle (Western Australia), Merimbula (New South Wales) and Mallacoota (Victoria).

For more information on the AWA™ program: Dean Lisson, deanlisson@tassie.net.au

TRADE

The FRDC has taken direct responsibility for the management of the Seafood Market Access and Trade Forum and the trade databases, including:

- food microorganisms,
- contaminants,
- food additive database,
- export tariff and duties database,
- detainments of Australian seafood,
- trade issues database,
- Codex for comment,
- trade statistics database.

During the year the FRDC began a review of its trade and market access program and has been speaking with key partners, including the Department of Agriculture and the Department of Foreign Affairs and Trade, and SafeFish. The review will encompass all current trade and market access activities FRDC participates in to identify ways to improve the delivery of services.

As part of the review the FRDC put on hold redesigning the structure and design of the trade databases, rather deciding to focus on updating data. Further changes to the Seafood Market Access and Trade Forum may take place in the future and the FRDC will keep all users up to date as these occur.

To keep abreast of trade issues, FRDC's Manager, Communication, Trade and Marketing Peter Horvat remains on the Department of Agriculture's Export Consultative Committee and the SafeFish Committee.

Expertise underpins safe fish trade

Helping Australia maintain access to international markets is one of the main objectives of SafeFish Australia, which provides technical advice to international seafood trade negotiations.

The aim is to establish a level playing field for Australian products to access international markets. Unfair rules for trade can have a major impact, stopping access to key markets. However, providing input into the various international processes like the Codex Alimentarius Commission which develops the international rules around food safety, is complicated and sometimes highly technical, but it is important that it is done.

It is vital for Australian seafood companies to be engaged early on; it is far easier to influence the rules while they are being laid down than to change them retrospectively. While many issues are export-focused, SafeFish also looks at food safety issues related to seafood imports and domestic trade of Australian seafood.

SafeFish's contribution and input into the international risk-based approach for abalone biotoxin monitoring, for example, has been a major success for the Australian industry. The draft standard proposed mandatory testing for marine biotoxins and bacteria in all abalone-growing areas. This would have been costly and unworkable. But the approach finally adopted recognises that hazards and risk management procedures in one country may not be applicable to another.

Industry input

Industry input is a crucial part of SafeFish developing responses to food safety issues. Identifying which issues are important, and which practices and risk-management strategies fit with the Australian context helps to determine if suggested regulations are practical to implement, and what the potential impact might be.

SafeFish has three working groups: one developing the Code of Practice for scallops, and two groups reviewing guidelines, risk management strategies and maximum allowable levels for contaminants in fish (histamines and mercury). Other issues SafeFish is addressing for input into Codex include food additives in processed seafood (i.e. sulfites in abalone), parasites in seafood, and methods of analysis for marine biotoxins.

SafeFish is funded by the FRDC and Primary Industries and Regions South Australia and industry.

For further information: http://www.safefish.com.au

STANDARDS

The FRDC is approved by the Accreditation Board for Standards Development Organisations as a Standards Development Organisation.

The FRDC is recognised as a reliable source of knowledge within the fishing industry and is sufficiently resourced to carry out standards development work within the scope of accreditation, within a reasonable time frame.

This is a significant and important achievement for the FRDC, as it becomes one of only five organisations accredited to develop Australian Standards and the only one able to do so within the food industry.

The FRDC has work underway looking at a number of options for future fisheries related standards development. Over the coming year more work will be done to formalise and finalise the ground work that has already been completed through a number of research projects. Standards being worked on include responsible fishing, science and fisheries management standards.

Further information is available at www.seafoodstandards.com.au

Australian Fish Names Standard

The FRDC took over management of the Australian Fish Names Standard (AS 5300) following the closure of Seafood Services Australia in 2013.

Fish Names is a searchable online fish names database (www.fishnames.com.au) that includes all species listed in the standard. Users can find a fish by name and check its previous or non-standard names, as well as seeing an image in some cases.

This increases consumer confidence in the seafood product purchased as standard names allow for more effective fisheries monitoring and management, which in turn results in greater sustainability of fisheries resources. Traceability and food-safety management can also improve with more efficient seafood marketing campaigns, and increasing industry profitability.

Having a standard in place also allows 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.

New Fish Name Standard published

In 2014–15 an update to the Australian Fish Names Standard AS 5300 was published. A searchable version of the standard can be found at www.fishnames.com.au and an electronic version can be purchased from SAI Global at http://infostore.saiglobal.com/store/Details.aspx?ProductID=1797413

Fish Names Committee membership

Fish Names Committee (Chair)	Gus Dannoun (new)
Seafood industry peak body representative	Simon Boag (new)
Australian Fisheries Management Forum (AFMF) representative	Representative of AFMF
Seafood importers representative	Norm Grant (continued)
End user representative (hospitality)	Glen Austin
End user representative (retail/supermarket)	Hamish Allen (continued)
Recreational fisheries representative	Russell Conway (continued)
Expert member	Richard Stevens (new)
Expert member	Gordon Yearsley (returned)
Expert member	Don Tuma (returned)
Expert member	Anthony Mercer (new)
Standards Development Organisation representatives	(non-voting)
FRDC	Patrick Hone
FRDC	Peter Horvat
Fish Names Secretary (non-voting)	Alan Snow

Submissions

During the year the FRDC made two submissions which related to the Fish Names Standard. Both submissions were to parliamentary enquiries relating to country-of-origin labelling.

- FRDC submission to the country-of-origin food labelling enquiry 2014.
- FRDC submission on the current requirements for labelling of seafood and seafood products 2014.

For copies of FRDC submissions visit:
http://frdc.com.au/about_frdc/corporate-documents/Pages/Submissions.aspx

Aligning information management systems for the future

The FRDC made significant investments into its information technology system in 2013–14 with the internal development of a fully-integrated project management system. All records are now linked to projects, deliverables and to a finance system that makes payments, tracks income and drives financial reporting. In addition the new system has enabled the FRDC to become as close as possible to a paperless office as all processing and records are now stored electronically.

The completion of the project management system was the first step in laying the foundations for FRDC's overall information technology systems. In 2014–15 the goal has been to build on this platform, in order to improve flexibility to meet stakeholder demands and move to a total paperless office system.

Integration of the project management system with the financial system was the first step with FRDC moving from Microsoft GP to MYOB EXO. This provided FRDC with more integration points between the two systems allowing FRDC more control over from both the input and retrieval of data.

In light of the uncertainty of FRDC's future physical location, a decision was made to move all of FRDC's information and communications technology (ICT) infrastructure to a cloud-based system using a mixture of Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). In preparation for the cloud migration all existing ICT services have been re-evaluated, consolidated, retired or modified. The completion deadline is the end of financial year 2015/16.

This year has been laying the foundations for the next stage, which includes:

- drawing up design specifications and consulting for fish.gov.au stage three,
- refreshing of FRDC and Fishfiles websites,
- developing a new reporting service and improving customer accessibility to final reports,
- aligning all internal processes to a distributed work environment,
- adding features to FishNet to empower applicants.

Web services

Throughout the year, the FRDC has sought to consolidate control and location of its website and domains. Over a period of years, the FRDC has inherited a number of diverse websites and platforms, primarily when Seafood Services Australia closed, and as part of extension activities from research and development projects. Keeping track of these and ensuring they were up-to-date and maintained led the FRDC to undertake a consolidation process.

Development of a single integrated web hosting platform (cloud) will improve FRDC's management of its web assets and allow it to assist with the development and management of future sites for both researchers and industry.

Corporate communications

FRDC communications in 2014–15 focused on engagement with industry on marketing and gaining their views (page 101). The information gathered is being used to develop and inform how the FRDC approaches marketing.

Undertaking the marketing engagement program resulted in a significant change over the year in the mix of communication activities. A greater emphasis was placed on mediums that allowed for a two-way dialogue, such as face-to-face or via social and digital media. The FRDC attended and presented at industry events across the country to ensure that industry had the opportunity to have their say. This was supported by wider-information articles placed in FRDC's *FISH* magazine.

FISH continues to be one of the leading fisheries research magazines in Australia. The FRDC stakeholder survey indicates a high level of recognition and approval (see inside front cover).

In September 2014, the iPad version of the magazine became available for download complementing the Android version.

Strategy to promote the science and best practice

In 2014–15 the FRDC strategy to promote the science and best practice that underpins the Australian seafood and angling industry came to its end.

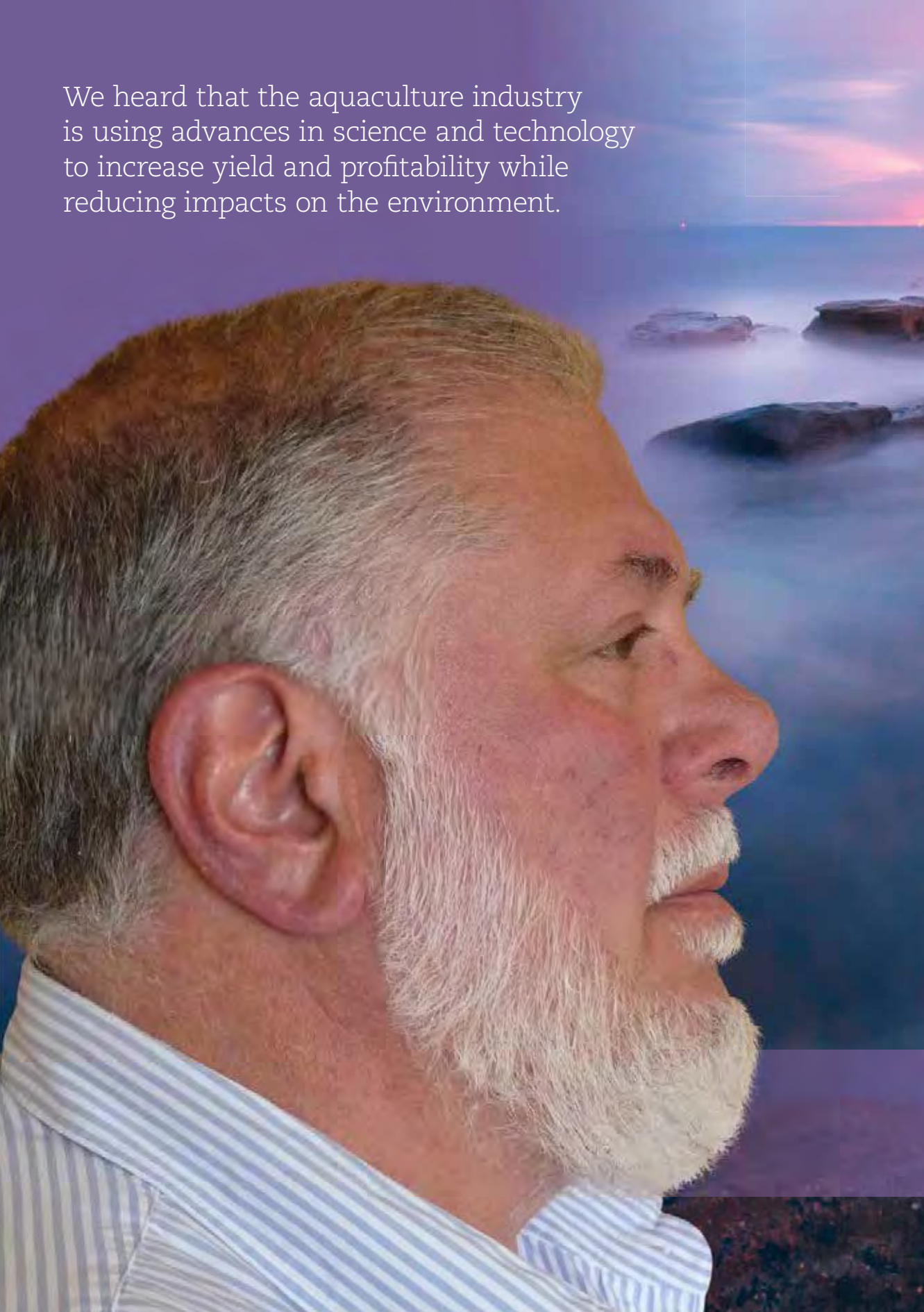
The strategy focused on four key themes that focused on industry unity, media relations, community relations and stakeholder advocacy. The strategy was broad, taking a national approach, and therefore contained several elements that are outside the remit of the FRDC and the responsibility of groups—government (management) and industry. The focus for FRDC was on media and community relations—namely to be proactive with the media stories that use and are supported by science, and to effectively respond to negative media coverage.

The FRDC implemented the strategy and the Board were provided regular updates on the delivery of activities. A number of significant outcomes were achieved as part of the strategy. These included:

- establishment of www.fish.gov.au providing results of the stock status reports,
- establishment of www.fishfiles.com.au which provide consumers basic 'how to' information. Fishfiles also provided detailed information from the stock status reports website,
- over 80 people from management, research, education and industry undertook media training,
- around 100 media interviews were conducted (15 of which were television),
- response to more than 20 factually inaccurate media articles.

It is important to note while there were many contacts made to address stories with inaccuracies, having them retracted proved difficult primarily because many quotes were attributed to opinion rather than data or science.

We heard that the aquaculture industry is using advances in science and technology to increase yield and profitability while reducing impacts on the environment.



Report of Operations Part 4
Management and accountability

MANAGEMENT AND ACCOUNTABILITY

Management and accountability activities focus on continually improving the how the FRDC operates and manages its organisation. A large part of the activities undertaken align and respond to legislative and financial requirements. These also align with corporate governance section starting on page 119.

FRDC strategic planning and reporting documents (comprising RD&E plan, annual operating plan and annual report) were completed and presented within their duly legislated time frames to the Minister for Agriculture. These documents aim to identify the key issues that face the FRDC, and outline strategies to take advantage of opportunities, and to minimise or mitigate against negative risks.

Principal inputs

During 2014–15, there was $3.31 million (around 11.7 per cent) invested in activities within management and accountability.

Performance indicators

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

Performance indicators	Target	Achievement
Projects focus on the FRDC Board's assessment of priority research and development issues.	95%	All projects aligned to the priorities of the FRDC Board, government and industry stakeholders.
Projects are assessed as meeting high standards/ peer review requirements for improvements in performance and likely adoption.	95%	All projects met a high standard. Each project, where applicable, had an extension and development plan developed.
Maintain ISO 9001:2008 accreditation.	100%	FRDC maintained ISO 9001:2008 accreditation following an external audit.
Submit planning and reporting documents in accordance with legislative and Australian Government requirements and time frames.	100%	**Achieved**: All corporate documents were submitted according to required time frames. This includes the annual operational plan, RD&E plan requirements, annual report and funding agreement.
Implement best practice governance arrangements to promote transparency, good business performance, and unqualified audits.	100%	**Achieved**: FRDC received an unqualified audit report for 2014–15 financial statements.
Demonstrate the benefits of RD&E investments by positive benefit cost analysis results.	100%	**Achieved**.

Quality system

The FRDC is a certified AS/NZS ISO 9001:2008 organisation for quality, and undertakes both internal (cross team) and external audits annually with a recertification audit of its quality system triennially. The FRDC carried out two internal cross team audits in 2014 and underwent its annual external audit on 1 September 2014.

Risk management

There was no incidence of fraud at the FRDC during 2014–15.

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 policy also incorporates a fraud control framework in accordance with the Fraud Control Guidelines produced by the Attorney-General's Department which seeks to minimise the likelihood and impact of fraud.

The Board reviewed and approved the FRDC risk management framework at its February 2015 meeting. All staff participated in an internal risk workshop on 10 October 2014 which was used to update the FRDC's risk register. Additionally, the Board reviews the highest-ranked risks at every meeting.

In 2015, the FRDC participated in Comcover's Risk Management and Benchmarking Survey which is conducted annually. The program measures FRDC's risk management maturity across the nine elements of the Commonwealth Risk Management Policy (the Policy). The program was changed this year incorporating new questions and a maturity model that is aligned with the Policy. FRDC achieved a maturity level of 'integrated' which was the average maturity level of all survey participants in 2015.

Finance and administration

The 2014–15 audit report by the Australian National Audit Office confirmed the FRDC's financial statements gave a true and fair view of its financial position and there were no adverse findings associated with the audit.

Regional Fisheries Management Organisations memberships

During 2014–15 and the Australian Government's budget process, the FRDC was advised that in the future it would be paying the costs of Australia's membership of a number of regional fisheries organisations. Legislative amendments to the PIRD ACT were tabled in the House of Representatives to enact this proposal. The Bill was subsequently the subject of a Senate Inquiry, but is yet to pass both houses of parliament.

Should the amendment to the PIRD Act pass into law, the FRDC will have to pay the Department of Agriculture $1,146,000 for memberships in 2014–15.

Industry contributions

At the core of FRDC's finances is maintaining solid partnerships with those contributing stakeholders, namely the state and territory fisheries agencies and individual industry sectors. The FRDC has currently 10 industry partnership agreements and is negotiating a new Industry Partnership Agreement with the Australian Council of Prawn Fisheries.

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

An overview of state and territory contributions against the maximum matchable contribution is shown in table 2: Contributions, maximum matchable contributions by the Australian Government and returns on investment, 2014–15 (page v).

FRDC also holds a share in Australian Seafood Co-products (ASCo) which is a company developed to look at alternate uses for fish processing waste.

Agreements and contracts

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

Consultancy services and selection of suppliers

During the year, the FRDC engaged seven consultancies (as defined in the Department of Prime Minister and Cabinet document, *Requirements for Departmental Annual Reports*) to the value of $10,000 or more.

When selecting suppliers of goods and services, the FRDC follows its procurement policy procedure —which seeks to achieve value for money and to deal fairly and impartially. The FRDC policies and procedures align with the principles contained in the Commonwealth Procurement Rules and are available from the FRDC website. 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.

Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	Strategic Fitness Noosa Pty Ltd Information technology advice $152,445.00
Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	Sustineo Pty Ltd Accounting services $24,676.68
Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	Kyaw Kyaw Soe Hlaing Information technology advice $168,571.92
Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	HWL Ebsworth Lawyers Legal advice $28,338.00
Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	IT Payroll Solutions Quality management consulting $31,940.00
Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	Rachelle Breidenbach Digital content producer $32,384.84
Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	Marsden Jacob Associates Costing analysis consulting $18,525.00

Ministerial directions

The PIRD Act provides that the Minister may give direction to the Corporation with respect to the performance of its functions and the exercise of its powers. In addition, the Minister, under the PGPA Act, may notify the Board of any general Australian Government policies that apply to the FRDC. At the date of this report, the following ministerial directions and notifications have been received.

- On 28 May 2015, the Parliamentary Secretary to the Minister for Agriculture the Hon. Senator Colbeck, wrote to the FRDC advising that the ministerial direction made by former Minister for Resources, the Hon. David Beddall, in 1995, under subsection 143(1) of the PIRD Act was formally withdrawn, effective from 1 July 2015.

  In addition to this, Senator Colbeck revoked the 'Guidelines on Funding of Consultation Costs by Primary Industry and Energy Portfolio Statutory Authorities 1998', as they apply to the FRDC. Payments made by the FRDC to its declared representative organisations for consultation costs are made in accordance with section 15 of the Act and the PGPA Act.

Government policy

The FRDC complied with all relevant Australian Government policy requirements—see page 113.

- Australian Government Cost Recovery Policy,
- Australian Government Commonwealth Procurement Rules,
- Australian Government Protective Security policy Framework
- Australian Government Commonwealth Property Management Framework,
- Commonwealth Fraud Control Guidelines 2011,
- Foreign Exchange (Forex) Risk Management,
- National Code of Practice for the Construction Industry and the Commonwealth's Implementation Guidelines.

Judicial reviews

There were no judicial reviews in 2014–15.

Protective Security Policy Framework

The FRDC wrote to Minister in August 2014 noting that the FRDC was compliant with the framework.

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

Freedom of information

During 2014–15, the FRDC received no requests pursuant to the *Freedom of Information Act 1982* (FOI Act).

The FRDC is required to comply with the FOI Act. In many cases it may not be necessary to request the information under the FOI Act—the FRDC may simply provide it to you when you ask for it. At all times, however, you have the option of applying under the FOI Act.

From 1 May 2011, agencies subject to the FOI Act are required to publish information as part of the Information Publication Scheme (IPS). This requirement is in Part II of the FOI Act and has replaced the former requirement to publish a section 8 statement in an annual report. An agency plan showing what information is published in accordance with the IPS requirements is accessible from the FRDC website—www.frdc.com.au. More information on freedom of information see Appendix E on page 192.

Energy efficiency

The Commonwealth Government's *Energy Efficiency in Government Operations Policy* seeks to improve energy efficiency in relation to vehicles, equipment and building design.

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

Work health and safety

The FRDC is committed to providing a safe and healthy environment for all staff, contractors and visitors to its workplace. The Corporation recognises that its people are its greatest asset and its most valuable resource. The FRDC's ultimate goal is that its workplace is free of injury, illness and disease. The FRDC complies with its legislative obligations under the *Work Health and Safety Act 2011* (WHS Act) and takes all reasonably practicable steps to ensure a safe working environment. The FRDC's working environment is reviewed periodically by occupational health and safety consultants, and training is provided in workplace health and prevention of injury.

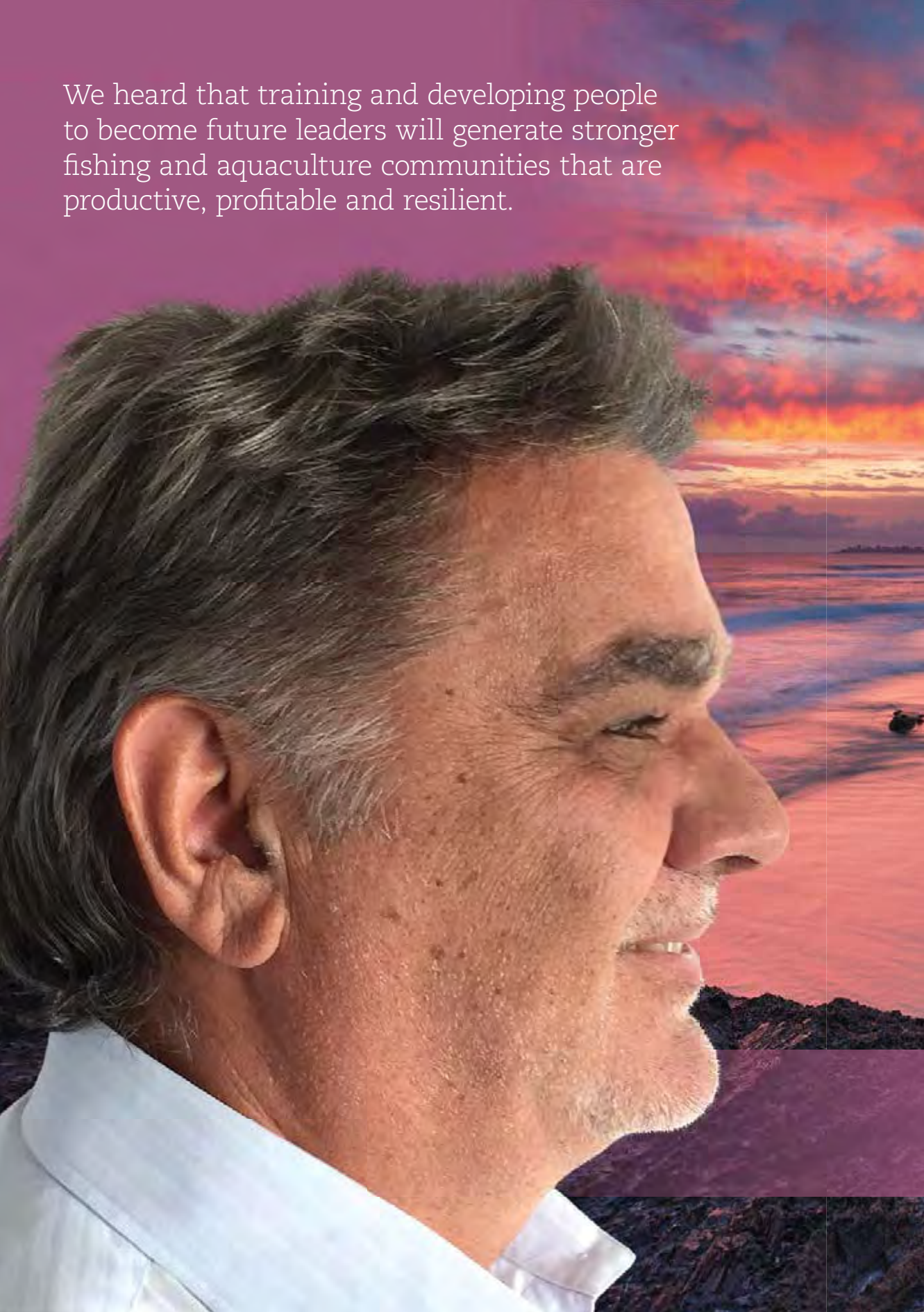
The FRDC's Workplace Health and Safety Policy and procedure, has been developed in accordance with the requirements under the WHS Act in consultation with FRDC's employees. The FRDC also recognises that continued reviewing and improvement of its health and safety management system makes good sense legally,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

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 2014–15.
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 brought to the attention of all staff at the weekly staff meetings. • Occupational rehabilitation physiotherapist provides ergonomic assessments to all new staff in their immediate working environment, and when requested. • Staff are provided with access to influenza vaccinations. • Workplace safety training. • Annual fire safety and warden training, and six-monthly checks of fire safety equipment. • Annual testing and tagging of electrical appliances. • Qualified first aid officer and fire warden. • Assessment of risks in line with the risk framework annual review.
Investigations conducted during the year that relate to businesses or undertakings conducted by the entity, including details of notices given to the entity during the year under part 10 of the Act.	• Increased awareness of roles and responsibilities in WHS including responsibilities of managers.
	• No requests were received from staff and no undertakings were given by the FRDC. • No directions or notices were given to the FRDC.

Notifiable incidents	2010–11	2011–12	2012–13	2013–14	2014–15
Deaths	0	0	0	0	0
Dangerous occurrences	0	0	0	0	0
Serious personal injury	0	0	1	0	0
Incapacity	0	0	0	0	0
Total	0	0	1	0	0

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

We heard that training and developing people to become future leaders will generate stronger fishing and aquaculture communities that are productive, profitable and resilient.



Report of Operations Part 5
Corporate governance

Vale FRDC director David Thomason

The FRDC Board and staff were saddened by the death of FRDC director David Thomason who passed away in November 2014 after a short but valiant fight against illness. David was the mastermind behind some of Australia's most awarded and effective marketing campaigns, and was appointed an FRDC director in November 2012.

David started his career with Cottee's foods in 1968 and stayed with the company for 20 years before moving to George Weston Foods, where he was marketing manager for a decade. He joined Meat & Livestock Australia (MLA) in 1998.

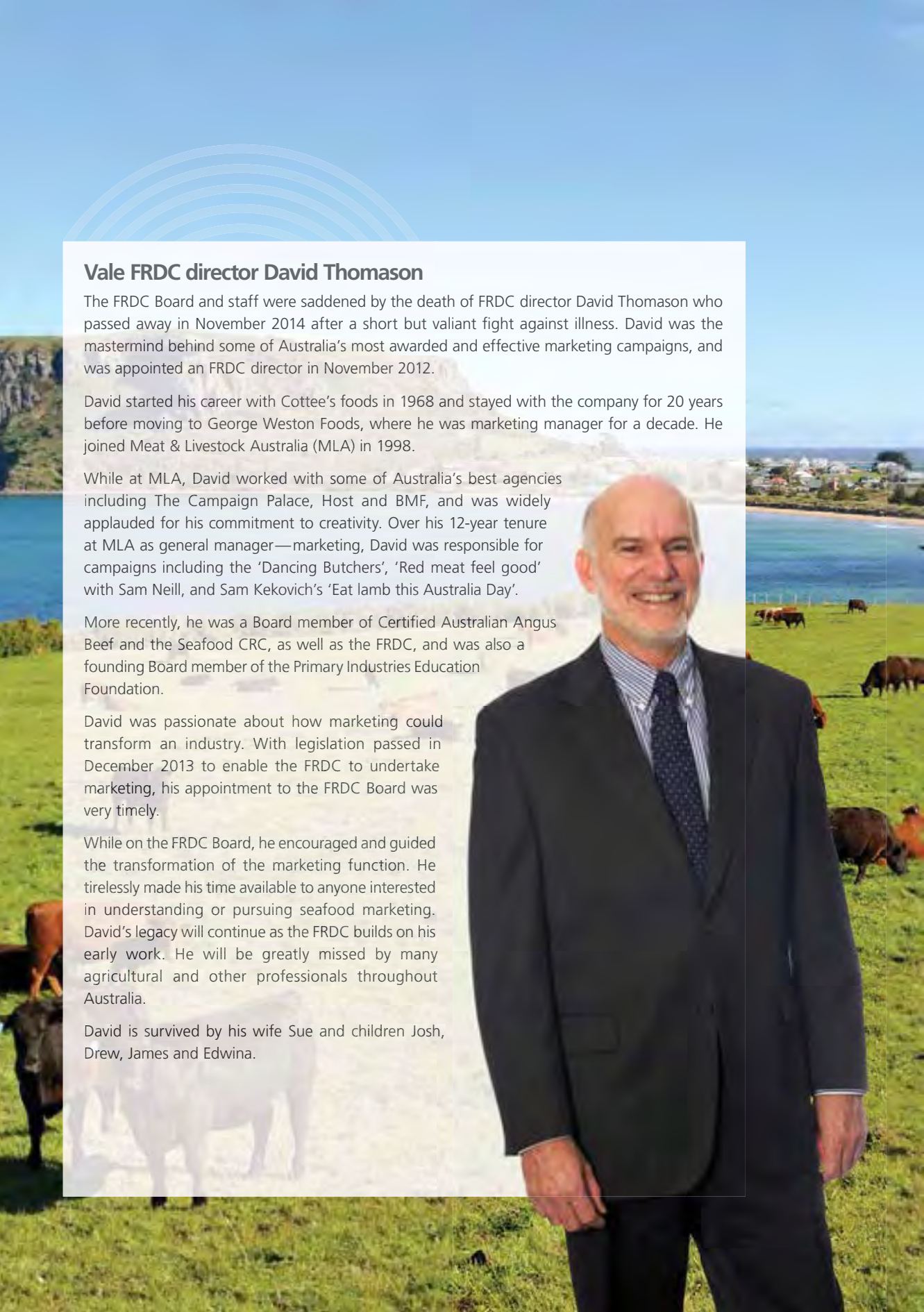
While at MLA, David worked with some of Australia's best agencies including The Campaign Palace, Host and BMF, and was widely applauded for his commitment to creativity. Over his 12-year tenure at MLA as general manager—marketing, David was responsible for campaigns including the 'Dancing Butchers', 'Red meat feel good' with Sam Neill, and Sam Kekovich's 'Eat lamb this Australia Day'.

More recently, he was a Board member of Certified Australian Angus Beef and the Seafood CRC, as well as the FRDC, and was also a founding Board member of the Primary Industries Education Foundation.

David was passionate about how marketing could transform an industry. With legislation passed in December 2013 to enable the FRDC to undertake marketing, his appointment to the FRDC Board was very timely.

While on the FRDC Board, he encouraged and guided the transformation of the marketing function. He tirelessly made his time available to anyone interested in understanding or pursuing seafood marketing. David's legacy will continue as the FRDC builds on his early work. He will be greatly missed by many agricultural and other professionals throughout Australia.

David is survived by his wife Sue and children Josh, Drew, James and Edwina.



CORPORATE GOVERNANCE

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

The FRDC 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, a research and development 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, processes, controls, behaviours and transparency. To support the FRDC's high level of commitment to these principles, a full list of FRDC policies and copies of the financial statements are available from the FRDC website—www.frdc.com.au

The Board

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

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

The Board plays a fundamental role in guiding the FRDC and provides management with strong leadership. It oversees the FRDC's corporate governance, ensuring the FRDC has a good framework of policies and procedures; playing a strong role in the approval and oversight of financial matters including the approval of new projects.

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

Directors' biographies

The Hon. Harry Woods: Chair

Appointed as Chair 1 September 2010.

Harry Woods comes from a diverse background having been an auditor, bookmaker and publican before serving many years as a politician in both federal and state governments. He was the member for Page from 1990 to 1996. Following this, Harry was elected as the Member for Clarence in the New South Wales Legislative Assembly. During his time in New South Wales Parliament he was Minister for Regional Development and Minister for Rural Affairs from 1997–99 and Minister for Local Government, Minister for Regional Development and Minister for Rural Affairs from 1999 until his retirement in 2003.

Since then, Harry has spent time as a professional fisherman, undertaken policy review work for the New South Wales Government, worked as an accredited mediator and has been involved in the development and building of commercial property. Harry has a good understanding of, not only the fishing industry, but the broader primary industries arena. As the member for Page his responsibilities included a diverse range of issues—dairy cattle, pigs, maize, tropical fruit, sugar cane, fishing, prawning, oyster farming, butter and bacon factories, breweries, timber mills, and tourism.

Brett McCallum: Deputy Chair

Appointed 9 September 2009. Chair of the Finance, Audit and Risk Management Committee.

Brett McCallum is Chief Executive Officer of the Pearl Producers Association. He has held senior roles in the fishing industry and has been involved in a number of industry and government advisory committees. Previous roles include Chief Executive Officer of the Western Australian Fishing Industry Council, National Aquaculture Council director and several executive management positions in major commercial fishing companies.

Dr Patrick Hone: Executive Director

Appointed Executive Director from 21 April 2005.

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

Patrick has a PhD from Adelaide University, and previously worked for SARDI on a wide range of aquaculture research for Southern Bluefin Tuna, Pacific Oysters, mussels, Yellowtail Kingfish and abalone.

Heather Brayford: Director

Appointed 1 September 2009. Member of the Remuneration Committee.

Heather Brayford has extensive experience in fisheries and aquatic resource management including senior management and policy roles related to commercial fisheries, recreational fisheries, pearling and aquaculture and fish habitat protection. Heather is currently the Director General of the Western Australian Department of Fisheries and has also held the position of Executive Director of Fisheries in the Northern Territory.

Renata Brooks: Director

Appointed 1 September 2009.

Renata Brooks is an independent director and consultant. Previously, she was Deputy Director General, Land and Natural Resources in the New South Wales Department of Primary Industries, with responsibility for the New South Wales crown land estate, natural resource policy and programs, and coordination of primary industry policy. She has held senior executive positions within the Department of Primary Industries in the areas of science and research, agriculture, fisheries, biosecurity, compliance and mine safety. Renata holds a Bachelor of Veterinary Science from the University of Sydney with first class honours, a Graduate Certificate in Bioethics from the University of Technology Sydney, and is a Fellow of the Australian Institute of Company Directors.

Dr Bruce Mapstone: Director

Appointed 1 September 2012.

Bruce Mapstone is a chief research scientist in the Oceans and Atmosphere Business Unit at CSIRO. He has a research background in tropical fisheries, especially line fisheries and previously has been Chief of CSIRO's Division of Marine and Atmospheric Research, Director of the Centre for Australian Weather and Climate Research, and Chief Executive of the Antarctic Climate and Ecosystems CRC. He has chaired and served on several advisory committees to Australian and state government agencies, mainly related to fisheries management, the Great Barrier Reef, and national regional marine planning.

Dr Peter O'Brien: Director

Appointed 1 September 2012.

Peter O'Brien is a professional director, business operator and consultant. He is currently director and professorial fellow at the University of Canberra Murray–Darling Basin Futures Collaborative Research Network, and is principal of Peter O'Brien Consulting and Tempo Mentors. Peter was previously Managing Director of the Rural Industries Research and Development Corporation and Executive Director of the Bureau of Rural Sciences, Department of Agriculture.

David Thomason: Director

Appointed 1 September 2012. Deceased 23 November 2014.

David Thomason had a 40-year marketing career in the food industry, most recently with Meat & Livestock Australia Ltd. He was a founding Board member of Primary Industries Education Foundation Ltd, Deputy Chair of Certified Australian Angus Beef Pty Ltd and associated companies, and was a Board member of the Seafood CRC. David had extensive experience in building consumer demand, including working with, and influencing the entire supply chain from grower through to retail, with the aim of raising quality, promotion and merchandising standards and consumer spending.

Independent committee members

Mr Robert Seldon—Independent member

Independent member of the Finance, Audit and Risk Committee August 2008–14.

Robert Seldon has more than 40 years' experience in merchant banking, including 15 years as chief executive of a major United States banking subsidiary in Australia. He has had substantial exposure to both food and agribusiness activities, with an active participation in the provision of advice on mergers and acquisitions within that sector. Robert was formerly on the Board of Horticulture Australia Ltd and chair of the Finance and Risk Committee. He was a director of the Australian Fisheries Management Authority and chair of their Finance and Audit Committee.

Christine Feldmanis—Non-executive director

Appointed as an independent member of the Finance, Audit and Risk Committee September 2014.

Christine Feldmanis has more than 30 years' experience in the financial arena, in both government and private sectors. She has extensive experience in investment management, finance, accounting and risk management, legal and regulatory compliance, governance and business building in both the listed and unlisted financial product markets.

Christine formerly held senior executive and C-suite positions with firms including Deloitte, Elders Finance, Bankers Trust, NSW TCorp and Treasury Group Ltd. She currently works as a professional non-executive director and is a director and chair of the Audit and Risk Committees of Perpetual Equity Investment Company Ltd, Delta Electricity and Netball NSW. She is also a director of Uniting Financial Service and Bell Asset Management Ltd; an independent member of the Audit and Risk Committees for a number of New South Wales government agencies and an independent compliance committee member for Australian financial services licensees in the boutique funds management sector.

Attendance at Board meetings held during 2014–15

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

TABLE 4: ATTENDANCE BY DIRECTORS AT BOARD MEETINGS

Date	27/08/14	10–11/ 11/14	26/11/14 (t/c)	11/02/15	13&15/ 04/15	06/05/15 (t/c)	10/06/15
The Hon. Harry Woods (Chair)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mr Brett McCallum (Deputy Chair)	Yes	Yes	No	Yes	Yes	Yes	Yes
Dr Patrick Hone (Executive Director)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ms Heather Brayford	Yes	Yes	Yes	Yes	Yes	Yes	No
Ms Renata Brooks	Yes	Yes	Yes	Yes	Yes	No	Yes
Dr Bruce Mapstone	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dr Peter O'Brien	Yes	Yes	No	Yes	Yes	Yes	Yes
Mr David Thomason	Yes	**	**	**	**	**	**

t/c: Teleconference

** Indicates David Thomason's illness and passing.

Board committees

The Board had two committees operating during the year.

The Finance, Audit and Risk Management Committee

This committee comprises at least two non-executive directors and the Business Development Manager. It provides a forum for the effective communication between the Board and the external and internal auditors. It also oversees the FRDC Risk Management Framework.

The Remuneration Committee

This committee comprises the FRDC Chair (Chair of the committee) and two non-executive directors elected by the Board. It reviews the remuneration packages of the Executive Director and senior management on annual basis and makes recommendations to the Board. The packages will be reviewed with due regard to performance and other relevant factors including market relativity.

For more information on the terms of reference for these committees please visit the FRDC website —www.frdc.com.au

TABLE 5: ATTENDANCE BY DIRECTORS, INDEPENDENT MEMBER AND BUSINESS DEVELOPMENT MANAGER AT FINANCE, AUDIT AND RISK MANAGEMENT COMMITTEE MEETINGS

Date	25/08/14	10/11/14	27/01/15 (t/c)	26/05/15 (t/c)
Mr Brett McCallum (Committee Chair)	Yes	Yes	Yes	Yes
Ms Renata Brooks	Yes	Yes	Yes	Yes
Dr Patrick Hone (Executive Director)	Yes	Yes	Yes	Yes
Mr David Thomason	No	No	*	*
The Hon. Harry Woods (Chair)	Yes	Yes	Yes	Yes
Mr Robert Seldon (Independent member)	Yes	n/a	n/a	n/a
Mr John Wilson (Company Secretary)	Yes	Yes	Yes	Yes
Ms Christine Feldmanis (Independent member)	n/a	Yes	Yes	Yes

t/c: Teleconference

* Indicates David Thomason's illness and passing.

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

TABLE 6: ATTENDANCE BY DIRECTORS AT REMUNERATION COMMITTEE MEETINGS

Date	9/06/15
The Hon. Harry Woods (Chair)	Yes
Ms Heather Brayford	Yes
Dr Peter O'Brien	Yes

Record of meetings

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

Directors' interests and related entity transactions

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

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

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

Indemnities and insurance premiums for officers

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

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

Remuneration policy

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

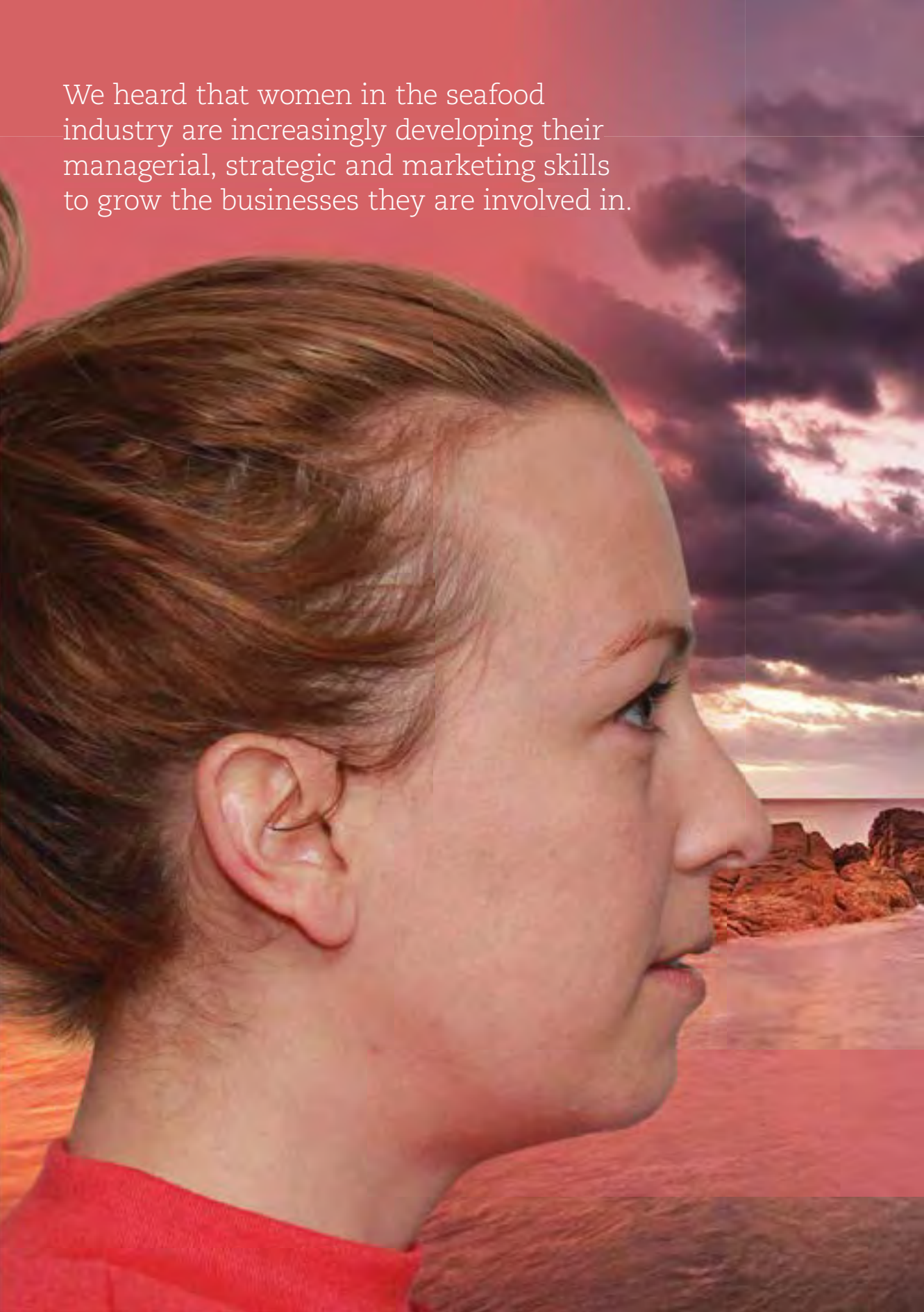
Remuneration of the Executive Director and staff is determined by an FRDC policy set by the Board, and is administered through the Board's Remuneration Committee. The amount of individual remuneration of the Executive Director and staff is based on advice by Mercer Human Resources Consulting Pty Ltd.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

FRDC has, in line with government policy, commenced started the process to develop a certified agreement for all staff that will cover a range of employment conditions.

Liabilities to staff

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

We heard that women in the seafood industry are increasingly developing their managerial, strategic and marketing skills to grow the businesses they are involved in.



2014–15 Auditor-General's report

Australian National Audit Office

INDEPENDENT AUDITOR'S REPORT

To the Minister for Agriculture

Report on the Financial Statements

I have audited the accompanying financial statements of the Fisheries Research and Development Corporation for the year ended 30 June 2015, which comprise:

- Statement by the Accountable Authorities, Executive Director and Chief Financial Officer;
- Statement of Comprehensive Income;
- Statement of Financial Position;
- Statement of Changes in Equity;
- Cash Flow Statement;
- Schedule of Commitments; and
- Notes comprising a Summary of Significant Accounting Policies and other explanatory information.

Accountable Authority's Responsibility for the Financial Statements

The directors of the Fisheries Research and Development Corporation are responsible under the *Public Governance, Performance and Accountability Act 2013* for the preparation and fair presentation of annual financial statements that comply with Australian Accounting Standards and the rules made under that Act. The directors are also responsible for such internal control as is necessary to enable the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

My responsibility is to express an opinion on the financial statements based on my audit. I have conducted my audit in accordance with the Australian National Audit Office Auditing Standards, which incorporate the Australian Auditing Standards. These auditing standards require that I comply with relevant ethical requirements relating to audit engagements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements 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. An audit also includes evaluating the appropriateness of the accounting policies used and the

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19 National Circuit BARTON ACT
Phone (02) 6203 7300 Fax (02) 6203 7777

reasonableness of accounting estimates made by the directors of the entity, as well as evaluating the overall presentation of the financial statements.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

Independence

In conducting my audit, I have followed the independence requirements of the Australian National Audit Office, which incorporate the requirements of the Australian accounting profession.

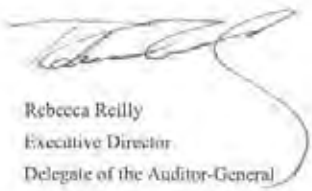
Opinion

In my opinion, the financial statements of the Fisheries Research and Development Corporation:

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

(b) present fairly the financial position of the Fisheries Research and Development Corporation as at 30 June 2015 and its financial performance and cash flows for the year then ended.

Australian National Audit Office



Rebecca Reilly
Executive Director
Delegate of the Auditor-General
Canberra
26 August 2015

We heard that well-targeted marketing of Australian seafood (within this country or overseas) will increase the commercial viability of fishing and aquaculture businesses.

Financial statements
for the year ended
30 June 2015

STATEMENT BY THE ACCOUNTABLE AUTHORITIES, EXECUTIVE DIRECTOR AND CHIEF FINANCIAL OFFICER

In our opinion, the attached financial statements for the period ended 30 June 2015 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 Fisheries Research and Development Corporation (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 ..... August 26, 2015
The Hon. Harry Woods — Date
Chair
Accountable Authority

Signed 26.8.15
Brett McCallum — Date
Deputy Chair and Chair Finance, Audit and Risk Management Committee
Accountable Authority

Signed ..... 26 Aug 2015
Patrick Hone — Date
Executive Director
Accountable Authority

Signed 26/08/2015
John Wilson — Date
Chief Financial Officer

Statement of Comprehensive Income

FOR THE PERIOD ENDED 30 JUNE 2015

	Notes	2015 $	2014 $
NET COST OF SERVICES			
Expenses			
Employee benefits	3A	2,094,407	2,021,461
Suppliers	3B	1,008,568	1,085,734
Projects	3C	24,853,945	22,872,063
Depreciation and amortisation	3D	173,342	453,819
Write-down and impairment of assets	3E	25,570	1,130,068
Total expenses		28,155,832	27,563,145
Own-source income			
Own-source revenue			
Sale of goods and rendering of services	4A	2,245	83,541
Interest	4B	199,572	219,583
Grants	4C	4,265,254	171,740
Contributions	4D	8,565,666	8,463,990
Other revenue	4E	–	19,408
Total own-source revenue		13,032,737	8,958,262
Total own-source income		13,032,737	8,958,262
Net cost of services		15,123,095	18,604,883
Revenue from the Australian Government	4F	18,708,154	17,932,344
Surplus/(deficit) attributable to the Australian Government		3,585,059	(672,539)
OTHER COMPREHENSIVE INCOME			
Items not subject to subsequent reclassification to net cost of services			
Changes in asset revaluation surplus		22,216	28,490
Total other comprehensive income		22,216	28,490
Total comprehensive income/(loss) attributable to the Australian Government		3,607,275	(644,049)

THE ABOVE STATEMENT SHOULD BE READ IN CONJUNCTION WITH THE ACCOMPANYING NOTES.

Statement of Financial Position

AS AT 30 JUNE 2015

	Notes	2015 $	2014 $
ASSETS			
Financial assets			
Cash and cash equivalents	6A	3,183,264	4,169,252
Trade and other receivables	6B	7,952,797	2,623,574
Other investments	6C	5,001	5,001
Total financial assets		11,141,062	6,797,827
Non-financial assets			
Property, plant and equipment	7A,B	63,690	124,575
Intangibles	7C,D	848,576	640,977
Inventories	7E	12,798	14,169
Other non-financial assets	7F	10,300	8,381
Total non-financial assets		935,364	788,102
Total assets		12,076,426	7,585,929
LIABILITIES			
Payables			
Suppliers	8A	85,109	129,110
Projects	8B	1,410,931	219,760
Other payables	8C	–	324,004
Total payables		1,496,040	672,874
Provisions			
Employee provisions	9A	864,430	804,374
Total provisions		864,430	804,374
Total liabilities		2,360,470	1,477,248
Net assets		9,715,956	6,108,681
EQUITY			
Reserves		245,387	223,171
Retained earnings		9,470,569	5,885,510
Total equity		9,715,956	6,108,681

THE ABOVE STATEMENT SHOULD BE READ IN CONJUNCTION WITH THE ACCOMPANYING NOTES.

Statement of Changes in Equity

FOR THE PERIOD ENDED 30 JUNE 2015

	Retained earnings		Asset revaluation surplus		Total equity	
	2015	2014	**2015**	2014	**2015**	2014
	$	$	**$**	$	**$**	$
Opening balance						
Balance carried forward from previous period	**5,885,510**	6,558,049	**223,171**	194,681	**6,108,681**	6,752,730
Adjusted opening balance	**5,885,510**	6,558,049	**223,171**	194,681	**6,108,681**	6,752,730
Comprehensive income						
Surplus/(deficit) for the period	**3,585,059**	(672,539)	**–**	–	**3,585,059**	(672,539)
Other comprehensive income	**–**	–	**22,216**	28,490	**22,216**	28,490
Total comprehensive income	**3,585,059**	(672,539)	**22,216**	28,490	**3,607,275**	(644,049)
Total comprehensive income attributable to the Australian Government	**3,585,059**	(672,539)	**22,216**	28,490	**3,607,275**	(644,049)
Closing balance as at 30 June 2015	**9,470,569**	5,885,510	**245,387**	223,171	**9,715,956**	6,108,681
Closing balance attributable to the Australian Government	**9,470,569**	5,885,510	**245,387**	223,171	**9,715,956**	6,108,681

THE ABOVE STATEMENT SHOULD BE READ IN CONJUNCTION WITH THE ACCOMPANYING NOTES.

Cash Flow Statement

FOR THE PERIOD ENDED 30 JUNE 2015

	Notes	2015 $	2014 $
OPERATING ACTIVITIES			
Cash received			
Receipts from the Australian Government		16,814,739	16,919,062
Contributions		8,271,323	8,792,230
Grants		2,273,283	171,740
Interest		194,948	215,630
Net GST received		1,530,684	1,749,972
Other		2,245	87,754
Total cash received		29,087,222	27,936,388
Cash used			
Employees		(2,034,351)	(1,981,554)
Suppliers		(1,243,276)	(1,228,793)
Projects expenditure		(26,148,169)	(25,126,301)
Total cash used		(29,425,796)	(28,336,648)
Net cash from/(used by) operating activities	10	(338,574)	(400,260)
INVESTING ACTIVITIES			
Cash used			
Purchase of property, plant and equipment		–	(61,659)
Purchase of intangibles		(323,410)	(332,087)
Total cash used		(323,410)	(393,746)
Net cash used by investing activities		(323,410)	(393,746)
FINANCING ACTIVITIES			
Cash used			
Other		(324,004)	–
Total cash used		(324,004)	–
Net cash used by financing activities		(324,004)	–
Net increase/(decrease) in cash held		(985,988)	(794,006)
Cash and cash equivalents at the beginning of the reporting period		4,169,252	4,963,258
Cash and cash equivalents at the end of the reporting period	6A	3,183,264	4,169,252

THE ABOVE STATEMENT SHOULD BE READ IN CONJUNCTION WITH THE ACCOMPANYING NOTES.

Schedule of Commitments

AS AT 30 JUNE 2015

	2015	2014
	$	$
BY TYPE		
Commitments receivable		
Net GST recoverable on operating lease commitments	13,199	24,652
Net GST recoverable on project commitments	3,273,988	4,055,881
Total commitments receivable	3,287,187	4,080,533
Commitments payable		
Other commitments		
Operating lease[1]	145,197	271,175
Project commitments[2]	36,013,874	44,614,685
Total other commitments	36,159,071	44,885,860
Total commitments payable	36,159,071	44,885,860
Net commitments by type	32,871,884	40,805,327
BY MATURITY		
Commitments receivable		
Other commitments receivable		
Within 1 year	2,254,316	2,801,528
Between 1 to 5 years	1,032,871	1,279,004
Total other commitments receivable	3,287,187	4,080,532
Total commitments receivable	3,287,187	4,080,532
Commitments payable		
Operating lease commitments		
Within 1 year	134,028	130,176
Between 1 to 5 years	11,169	140,999
Total operating lease commitments	145,197	271,175
Project commitments		
Within 1 year	24,663,453	30,686,636
Between 1 to 5 years	11,350,421	13,928,050
Total project commitments	36,013,874	44,614,686
Total commitments payable	36,159,071	44,885,860
Net commitments by maturity	32,871,884	40,805,327

Note: Commitments are GST inclusive where relevant.

(1) Operating leases included were effectively non-cancellable. The lease for the office accommodation at 25 Geils Court, Deakin expires 31 July 2016. Lease payments are subject to an annual increase in accordance with upwards movements in the consumer price index.

(2) Project commitments comprise the future funding of approved projects that are contingent on 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. It manages this risk by having the project agreement allow for termination due to insufficient funds or change of Australian Government policy. If the FRDC were to terminate a project agreement, it would only be liable to compensate the research partner for reasonable costs in respect of unavoidable loss incurred by the research partner and directly attributable to the termination.

THIS SCHEDULE SHOULD BE READ IN CONJUNCTION WITH THE ACCOMPANYING NOTES.

Notes to and forming part of the financial statements for the period ended 30 June 2015

Table of contents—notes

Note 1: Summary of significant accounting policies

1.1 The objective of the Fisheries Research and Development Corporation (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, and is under the provisions of the *Primary Industries Research and Development Act 1989* (PIRD Act). The objectives of the FRDC are to plan and invest in fisheries research, development and extension (RD&E) activities; and in related marketing activities.

As a national organisation with strong linkages to industry, managers and researchers it has a fundamental role in providing leadership and coordination. The FRDC achieves this through establishing strong relationships and putting in place mechanisms to identify and address RD&E priorities with industry and government stakeholders. In addition the FRDC monitors and evaluates the adoption of research and development outputs to better inform future decisions.

The FRDC is structured to meet the following outcome:

> *Increased knowledge that fosters sustainable economic, environmental and social benefits for the Australian fishing industry; including the Indigenous, recreational, commercial and aquaculture sectors, and the community; through investing in research, development and adoption.*

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

1.2 Basis of preparation of the financial statements

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

The financial statements have been prepared in accordance with:

a) Financial Reporting Rule (FRR) for reporting periods ending on or after 1 July 2014; and

b) Australian Accounting Standards and Interpretations 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, and values are rounded to the nearest dollar unless otherwise specified.

Unless an alternative treatment is specifically required by an accounting standard or the FRR, assets and liabilities are recognised in the Statement of Financial Position when, and only when, it is probable that future economic benefits will flow to the entity or a future sacrifice of economic benefits will be required and the amounts of the assets or liabilities can be reliably measured. However, assets and liabilities arising under executory contracts are not recognised unless required by an accounting standard. Liabilities and assets that are unrecognised are reported in the Schedule of Commitments or the contingencies note.

Unless alternative treatment is specifically required by an accounting standard, income and expenses are recognised in the Statement of Comprehensive Income when, and only when, the flow, consumption or loss of economic benefits has occurred and can be reliably measured.

1.3 Significant accounting judgements and estimates

No accounting assumptions or estimates have been identified that have a significant risk of causing a material adjustment to carrying amounts of assets and liabilities within the next accounting period. Key balances that relate to accounting judgements and estimates are detailed in Note 7A: Property, plant and equipment and in Note 9A: Employee provisions.

1.4 New Australian Accounting Standards

Adoption of new Australian Accounting Standard requirements

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

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

Future Australian Accounting Standard requirements

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

1.5 Revenue

Contributions are paid to the FRDC under Section 30A of the PIRD Act. Contributions are recognised when they are entitled to be received by the FRDC.

Revenue from the sale of goods is recognised when:

a) the risks and rewards of ownership have been transferred to the buyer;

b) the FRDC retains no managerial involvement or effective control over the goods;

c) the revenue and transaction costs incurred can be reliably measured;and

d) it is probable that the economic benefits associated with the transaction will flow to the FRDC.

Revenue from rendering of services is recognised by reference to the stage of completion of contracts at the reporting date. The revenue is recognised when:

a) the amount of revenue, stage of completion, and transaction costs incurred can be reliably measured; and

b) the probable economic benefits associated with the transaction will flow to the FRDC.

The stage of completion of contracts at the reporting date is determined by reference to the proportion that costs incurred to date bear to the estimated total costs of the transaction.

Receivables for goods and 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 each reporting period. Allowances are made when collectability of the debt is no longer probable.

Interest revenue is recognised using the effective interest method as set out in AASB 139 *Financial Instruments: Recognition and Measurement*.

Other contributions, including Australian Government grants, are recognised when:

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

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

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

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

Resources received free of charge

Resources received free of charge are recognised as revenue when, and only when, a fair value can be reliably determined and the services would have been purchased if they had not been donated. Use of those resources is recognised as an expense. Resources received free of charge are recorded as either revenue or gains depending on their nature.

Contributions of assets at no cost of acquisition or for nominal consideration are recognised as gains at their fair value when the asset qualifies for recognition.

Revenue from the Australian Government

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

1.6 Gains

Sale of assets

Gains from disposal of assets are recognised when control of the asset has passed to the buyer.

1.7 Employee benefits

Liabilities for 'short-term employee benefits' (as defined in AASB 119 *Employee Benefits*) and termination benefits expected within twelve months of the end of reporting period are measured at their nominal amounts.

The nominal amount is calculated with regard to the rates expected to be paid on settlement of the liability.

Other long-term employee benefits are measured as net total of the present value of the defined benefit obligation at the end of the reporting period minus the fair value at the end of the reporting period of plan assets (if any) out of which the obligations are to be settled directly.

Leave

The liability for employee benefits includes provision for annual leave and long service leave. No provision has been made for sick leave as all sick leave is non-vesting, and the average sick leave taken in future years by employees is estimated to be less than the annual entitlement for sick leave.

The leave liabilities are calculated on the basis of employees' remuneration at the estimated remuneration 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 estimate of the present value of the liability takes into account attrition rates and pay increases through promotion and inflation.

All leave provision calculations are based on remuneration packages as at 1 July 2015, see Note 9A: Employee provisions.

Superannuation

FRDC employees are members of the Commonwealth Superannuation Scheme (CSS), the Public Sector Superannuation Scheme (PSS), the PSS accumulation plan (PSSap) or an approved superannuation scheme of their choice.

The CSS and PSS are defined benefit schemes of the Australian Government. The PSSap is a defined contribution scheme. 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 employees' superannuation schemes 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.

For other approved superannuation schemes, the FRDC contributes a minimum of 9.50% of superannuable salaries.

As at 30 June 2015, all superannuation contributions were fully paid, therefore no superannuation liability has been recognised (30 June 2014: $Nil).

1.8 Leases

A distinction is made between finance leases and operating leases. Finance leases effectively transfer from the lessor to the lessee substantially all the risks and rewards incidental to ownership of leased assets. An operating lease is a lease that is not a finance lease. In operating leases, the lessor effectively retains substantially all such risks and benefits.

Where an asset is acquired by means of a finance lease, the asset is capitalised at either the fair value of the lease property or, if lower, the present value of minimum lease payments at the inception of the contract and a liability is recognised at the same time and for the same amount.

The discount rate used is the interest rate implicit in the lease. Leased assets are amortised over the period of the lease. Lease payments are allocated between the principal component and the interest expense.

Operating lease payments are expensed on a straight-line basis that is representative of the pattern of benefits derived from the leased assets.

The FRDC does not currently have any finance leases.

1.9 Projects

The FRDC recognises project liabilities through project agreements that require the research partner 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 and an invoice issued consistent with the contractual requirements, and the eligibility criteria have been satisfied by the research partner to the FRDC's satisfaction.

1.10 Fair value measurement

The FRDC transfers leasehold improvements and property, plant and equipment values between levels of the fair value hierarchy, only where more objective data becomes available.

1.11 Cash

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.

In accordance with section 42 of the PIRD Act, the Treasurer has approved the FRDC overdrawing its bank account to a limit of $900,000 on the basis that sufficient funds are held in related accounts to offset any overdrawing,with these funds to be transferred as soon as possible to clear any debt.

1.12 Financial assets

The FRDC classifies its financial assets in the following category:

a) loans and receivables.

The classification depends on the nature and purpose of the financial assets, and is determined at the time of initial recognition. Financial assets are recognised and derecognised upon 'trade date'.

Effective interest method

The effective interest method is a method of calculating the amortised cost of a financial asset and of allocating interest income over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts through the expected life of the financial asset; or, where appropriate, a shorter period.

Income is recognised on an effective interest rate basis, except for financial assets that are recognised at fair value through profit or loss.

Loans and receivables

Trade receivables, loans and other receivables that have fixed or determinable payments that are not quoted in an active market are classified as 'loans and receivables'. Loans and receivables are measured at amortised cost using the effective interest method less impairment. Interest is recognised by applying the effective interest rate.

Impairment of financial assets

Financial assets are assessed for impairment at the end of each reporting period.

Financial assets held at amortised cost—if there is objective evidence that an impairment loss has been incurred for loans and receivables or held to maturity investments held at amortised cost,the amount of the loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows discounted at the asset's original effective interest rate. The carrying amount is reduced by way of an allowance account. The loss is recognised in the Statement of Comprehensive Income.

Financial assets held at cost—if there is objective evidence that an impairment loss has been incurred, the amount of the impairment loss is the difference between the carrying amount of the asset and the present value of the estimated future cash flows discounted at the current market rate for similar assets.

1.13 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 fair value through profit or loss

Financial liabilities at fair value through profit or loss are initially measured at fair value. Subsequent fair value adjustments are recognised in profit or loss. The net gain or loss recognised in profit or loss incorporates any interest paid on the financial liability.

Other financial liabilities

Other 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 yield basis.

The effective interest method is a method of calculating the amortised cost of a financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments through the expected life of the financial liability, or, where appropriate, a shorter period.

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).

1.14 Contingent liabilities and contingent assets

Contingent liabilities and contingent assets are not recognised in the Statement of Financial Position but are reported in the notes. They may arise from uncertainty as to the existence of a liability or asset or represent an asset or liability in respect of which the amount cannot be reliably measured. Contingent assets are disclosed when settlement is probable but not virtually certain and contingent liabilities are disclosed when settlement is greater than remote.

1.15 Acquisition of assets

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.

1.16 Property, plant and equipment

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, which are expensed in the year of acquisition (other than where they form part of a group of similar items where value is greater than $5,000).

Revaluations

Following initial recognition at cost, property, plant and equipment 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.

All property, plant and equipment assets were reviewed and assessed for fair value as at 30 June 2015 by Australian Valuation Solutions.

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

	2015	2014
Property, plant and equipment	3 to 5 years	3 to 5 years
Leasehold improvements	Lease term	Lease term

Impairment

All assets were assessed for impairment as at 30 June 2015. 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.

No indicators of impairment were found for assets at fair value as at 30 June 2015.

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.

1.17 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.

Internally developed software and purchased software is amortised on a straight-line basis over its anticipated useful life. The useful life of software is 10 years (2013–14: 10 years).

All software assets were assessed for indications of impairment as at 30 June 2015.

1.18 Inventories

Inventories held for sale are valued at the lower of cost and net realisable value.

Inventories acquired at no cost or nominal consideration are initially measured at current replacement cost at the date of acquisition.

1.19 Taxation

The FRDC is exempt from all forms of taxation except fringe benefits tax (FBT), and the goods and services tax (GST). Revenues, expenses and assets are recognised net of GST except:

a) where the amount of GST incurred is not recoverable from the Australian Taxation Office; and

b) for receivables and payables.

1.20 Comparative figures

Comparative figures have been adjusted so they conform with changes in the presentation of these financial statements where required.

Note 2: Events after the reporting period

Departmental

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

Note 3: Expenses

Note 3A: Employee benefits

	2015	2014
	$	$
Wages and salaries	**1,583,113**	1,563,430
Superannuation		
Defined contribution plans	**142,468**	119,183
Defined benefit plans	**308,771**	298,941
Leave and other entitlements	**60,055**	39,907
Total employee benefits	**2,094,407**	2,021,461

Note 3B: Suppliers

	2015	2014
	$	$
Goods and services supplied or rendered		
Agency staff	**20,594**	–
Annual report	**24,844**	27,055
Asset purchases less than $5,000	**16,956**	24,362
Audit fees	**31,000**	29,750
Cost of goods sold	**1,371**	1,026
External service providers	**145,072**	137,198
Insurance	**30,574**	21,537
Information technology	**195,516**	250,106
Joint research and development corporation (RDC) activities	**33,199**	62,220
Legal	**31,824**	79,387
Media monitoring and releases	**23,782**	21,325
Office supplies	**25,192**	25,857
Photographs	**4,610**	9,643
Postage and couriers	**4,604**	4,022
Property	**27,321**	32,905
Recruitment/director selection costs	**35,520**	–
Representation	**14,646**	19,426
Representative organisations consultation	**6,133**	12,213
Telecommunications	**21,192**	22,515
Training	**32,998**	39,343
Travel	**106,761**	102,116
Other	**34,055**	30,382
Total goods and services supplied or rendered	**867,914**	952,388
Goods and services supplied or rendered in connection with		
Related parties	**81,880**	46,648
External parties	**786,034**	905,740
Total goods and services supplied or rendered	**867,914**	952,388
Other suppliers		
Operating lease rental in connection with		
External parties		
Minimum lease payments	**120,552**	116,808
Workers compensation expenses	**20,102**	16,538
Total other suppliers	**140,654**	133,346
Total suppliers	**1,008,568**	1,085,734

Note 3C: Projects

	2015	2014
	$	$
Public sector		
Australian Government entities (related parties)	**3,027,033**	3,034,706
State and territory governments	**5,130,941**	4,823,945
Private sector		
Universities	**4,493,175**	5,479,899
Overseas	**71,650**	–
Cooperative research centres	**3,969,040**	3,459,862
Other	**8,162,106**	6,073,651
Total projects	**24,853,945**	22,872,063

Note 3D: Depreciation and amortisation

	2015	2014
	$	$
Depreciation		
Property, plant and equipment	**83,101**	41,814
Total depreciation	**83,101**	41,814
Amortisation		
Intangibles	**90,241**	412,005
Total amortisation	**90,241**	412,005
Total depreciation and amortisation	**173,342**	453,819

Note 3E: Write down and impairment of assets

	2015	2014
	$	$
Asset write down and impairments from:		
Write down of intangible assets[1]	**25,570**	1,130,068
Total write down and impairment of assets	**25,570**	1,130,068

(1) FRDC's accounting software and the residual value of the project management system was written down as at 30 June 2015.

Note 4: Own-source income

OWN-SOURCE REVENUE

Note 4A: Sale of goods and rendering of services

	2015	2014
	$	$
Sale of goods and rendering of services in connection with		
Related parties	–	395
External parties	2,245	83,146
Total sale of goods and rendering of services	2,245	83,541

Note 4B: Interest

	2015	2014
	$	$
Deposits	199,572	219,583
Total interest	199,572	219,583

Note 4C: Grants

	2015	2014
	$	$
Australian Government		
Department of Agriculture[1]	3,496,754	131,740
Torres Strait Regional Authority[2]	768,500	40,000
Total grants	4,265,254	171,740

(1) Research program funding for Department of Agriculture (refer Note 14).

(2) Research program funding for Torres Strait Regional Authority (refer Note 14).

Note 4D: Contributions

	2015	2014
	$	$
Fisheries		
Australian Prawn Farmers Association	**189,250**	148,956
Australian Fisheries Management Authority	**1,007,942**	902,146
Australian Capital Territory	**–**	110,000
New South Wales	**636,504**	585,213
Northern Territory	**177,698**	420,734
Queensland	**618,731**	533,727
South Australia	**766,150**	1,653,371
Tasmania	**2,198,811**	2,364,642
Victoria	**305,257**	403,446
Western Australia	**1,258,297**	1,154,910
Total fisheries	**7,158,640**	8,277,145
Projects		
Project funds received from other parties	**1,351,760**	–
Project refunds of prior years expenditure	**55,266**	186,845
Total projects	**1,407,026**	186,845
Total contributions	**8,565,666**	8,463,990

Note 4E: Other revenue

	2015	2014
	$	$
Inventories received free of charge	–	15,195
Miscellaneous	–	4,213
Total other revenue	–	19,408

Note 4F: Revenue from the Australian Government

	2015	2014
	$	$
Department of Agriculture		
Corporate Commonwealth entity payment item of 0.50% of AGVP[1]	**12,490,335**	11,973,915
Matching of industry contributions[2]	**6,217,819**	5,958,429
Total revenue from the Australian Government	**18,708,154**	17,932,344

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

(2) Matching of industry's contributions (up to 0.25% of AGVP) by the Australian Government.

Note 5: Fair value measurement

The following tables, provide an analysis of assets and liabilities that are measured at fair value. The different levels of the fair value hierarchy are defined below.

Level 1:Quoted prices (unadjusted) in active markets for identical assets or liabilities that the FRDC can access at measurement date.

Level 2: Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.

Level 3: Unobservable inputs for the asset or liability.

Note 5A: Fair value measurements, valuation techniques and inputs used

Fair value measurements at the end of the reporting period				For Levels 2 and 3 fair value measurements			
	2015 $	2014 $	Category (Level 1, 2 or 3)[4]	Valuation technique(s)[2]	Inputs used	Range (weighted average)[3]	Sensitivity of the fair value measurement to changes in unobservable inputs
Non-financial assets[3] Leasehold improvements	5,480	15,970	Level 2	Market approach	Adjusted market transactions	–	
Leasehold improvements	32,000	58,365	Level 3	Depreciated replacement cost	Replacement cost new (price per square metre) Consumed economic benefit/ obsolescence of asset	5.5% per annum	A significant increase (decrease) in this consumed economic benefit / obsolescence of the asset would result in a significantly lower (higher) fair value measurement.
Property, plant and equipment	26,210	35,940	Level 2	Market approach	Adjusted market transactions	–	
Property, plant and equipment	–	14,300	Level 3	Depreciated replacement cost	Replacement cost new	–	
Total non-financial assets	**63,690**	124,575					
Assets not measured at fair value in the Statement of Financial Position							
Non-financial assets[1]	–	–					
Total assets not measured at fair value in the Statement of Financial Position	–	–					

(1) The FRDC did not measure any non-financial assets at fair value on a non-recurring basis as at 30 June 2015.

(2) There has been a change to the valuation technique for assets in the property, plant and equipment class. In instances where sufficient observable inputs, such as market transactions of similar assets were identified this financial year, the valuation technique was changed from a depreciated replacement cost to a depreciated replacement cost approach to a market approach.

(3) **Fair value measurements—highest and best use differs from current use for non-financial assets**
FRDC's assets are held for operational purposes and not held for the purposes of deriving a profit. The current use of all non-financial assets is considered their highest and best use.

(4) **Recurring and non-recurring Level 3 fair value measurements—valuation processes**
FRDC tests the procedures of the valuation model as an asset materiality review at least once every 12 months (with a formal revaluation undertaken once every three years). If a particular asset class experiences significant and volatile changes in fair value (i.e. where indicators suggest that the value of the class has changed materially since the previous reporting period), that class is subject to specific valuation in the reporting period, where practicable, regardless of the timing of the last specific valuation. The FRDC engaged Australian Valuation Solutions to undertake a full revaluation and confirm that the models developed comply with *AASB 13*. The weighted average is determined by assessing the fair value measurement as a proportion of the total fair value for the class against the total useful life of each asset. FRDC only retain one leasehold asset therefore the provision of a weighted average is not required.

Significant Level 3 inputs utilised by the entity are derived and evaluated as follows:

Leasehold improvements—Consumed economic benefit/obsolescence of asset
Assets that do not transact with enough frequency or transparency to develop objective opinions of value from observable market evidence have been measured utilising the cost (depreciated replacement cost) approach. Under the depreciated replacement cost approach the estimated cost to replace the asset is calculated and then adjusted to take into account its consumed economic benefit/asset obsolescence (accumulated depreciation). Consumed economic benefit/asset obsolescence has been determined based on professional judgement regarding physical, economic and external obsolescence factors relevant to the asset under consideration.

Note 5B: Level 1 and Level 2 transfers for recurring fair value

Recurring fair value measurements transferred between Level 1 and Level 2 for assets

	Transferred from			
	Level 1 to Level 2		Level 1 to Level 2	
	2015	2014	**2015**	2014
	$	$	**$**	$
Non-financial assets:				
Leasehold improvements	–	–	–	–
Property, plant and equipment	–	–	–	–
Total non-financial assets	–	–	–	–
Total assets transferred	–	–	–	–

There have been no transfers of non-financial assets between Level 1 and 2 of the hierarchy during the year (2013–14: Nil).

The FRDC's policy for determining when transfers between levels are deemed to have occurred can be found in Note 1.10.

Note 5C:Reconciliation for recurring Level 3 fair value measurements

Recurring Level 3 fair value measurements—reconciliation for assets

	Non-financial assets							
	Leasehold improvements		Total		Property, plant and equipment		Total	
	2015 $	2014 $	**2015 $**	2014	**2015 $**	2014 $	**2015 $**	2014 $
As at 1 July 2014	**58,365**	19,528	**58,365**	19,528	**14,300**	14,183	**14,300**	14,183
Total gains/(losses) recognised in net cost of service [1]	**(53,875)**	(809)	**(53,875)**	(809)	**(2,093)**	–	**(2,093)**	–
Total gains/(losses) recognised in other comprehensive income [2]	**27,510**	–	**27,510**	–	**(7,707)**	117	**(7,707)**	117
Purchases	–	39,646	–	39,646	–	–	–	–
Sales	–	–	–	–	–	–	–	–
Issues	–	–	–	–	–	–	–	–
Settlements	–	–	–	–	–	–	–	–
Transfers into Level 3 [3]	–	–	–	–	–	–	–	–
Transfers out of Level 3 [4]	–	–	–	–	**(4,500)**	–	**(4,500)**	–
Total as at 30 June 2015	**32,000**	58,365	**32,000**	58,365	–	14,300	–	14,300
Changes in unrealised gains/(losses) recognised in net cost of services for assets held at the end of the reporting period [4]	–	–	–					

(1) These gains/losses are presented in the Statement of Comprehensive Income under Note 3D: Depreciation and amortisation.

(2) These gains/losses are presented in the Statement of Comprehensive Income under other comprehensive income, changes in asset revaluation surplus.

(3) There have been no transfers into Level 3 during the year.

(4) There have been transfers of property, plant and equipment asset fair value measurement out of Level 3 during the year due to changes in the valuation technique from depreciated replacement cost to a market approach. Fair value measurements have been determined without the use of significant unobservable inputs.

FRDC's policy for determining when transfers between levels are deemed to have occurred can be found in Note 1.10.

Note 6: Financial assets

Note 6A: Cash and cash equivalents

	2015	2014
	$	$
Cash on hand	3,183,264	4,169,252
Total cash and cash equivalents	3,183,264	4,169,252

Note 6B: Trade and other receivables

	2015	2014
	$	$
Goods and services receivables in connection with		
Related parties	27,515	–
External parties	2,722,260	1,237,457
Total goods and services receivables	2,749,775	1,237,457
Department of Agriculture		
Receivables	5,183,235	1,297,849
Total receivables from Department of Agriculture	5,183,235	1,297,849
Other receivables		
GST receivable from the Australian Taxation Office	19,787	85,768
ASCo loan (1)	–	2,500
Total other receivables	19,787	88,268
Total trade and other receivables	7,952,797	2,623,574
Trade and other receivables are expected to be recovered		
No more than 12 months	7,952,797	2,623,574
Total trade and other receivables	7,952,797	2,623,574
Trade and other receivables aged as follows		
Not overdue	7,929,893	2,112,797
Overdue by		
0 to 30 days	–	205,270
31 to 60 days	134	550
61 to 90 days	–	244,750
More than 90 days	22,770	60,207
Total trade and other receivables	7,952,797	2,623,574

Credit terms for goods and services are within 30 days (2013–14: 30 days).

Australian Seafood Co-Products Pty Ltd (ASCo)

(1) ASCo shareholder's loan—Included in receivables in 2013–14 was a loan by the FRDC to ASCo of $2,500 under clause 14.3 of the shareholder agreement (refer also Note 6C). The loan was repaid in full in 2014–15.

Note 6C: Other investments

	2015	2014
	$	$
Shares in other company—unlisted[1]	5,001	5,001
Total other investments	**5,001**	5,001
Other investments expected to be recovered		
More than 12 months	5,001	5,001
Total other investments	**5,001**	5,001

Australian Seafood Co-Products Pty Ltd (ASCo)

(1) Shares in unlisted company

Australian Seafood Co-Products Pty Ltd (ASCo) is an unlisted company in which the FRDC owns a one-fifteenth share. The FRDC is not represented on the ASCo board. The principal activity of ASCo is to invest in ASCo Fertilisers Pty Ltd, which carries on the business of commercialisation of know-how and technical information relating to the conversion of fish waste and fish nutrient into agricultural fertiliser products, and the development of production facilities for those products. As the shares do not have a quoted market price in an active market, and cannot be reliably measured, they have been carried at cost in accordance with *AASB 139*.

Note 7: Non-financial assets

Note 7A: Property, plant and equipment

	2015	2014
	$	$
Property, plant and equipment		
Fair value	63,690	124,575
Accumulated depreciation	–	–
Total property, plant and equipment	**63,690**	124,575

Revaluations of non-financial assets

All revaluations were conducted in accordance with the revaluation policy stated at Note 5. On 30 June 2015 Australian Valuation Solutions conducted the revaluation.

A revaluation increment of $22,216 for plant and equipment (2013–14: $28,490) was credited to the asset revaluation reserve by asset class and included in the equity section of the Statement of Financial Position.

No indicators of impairment were found for property, plant and equipment.

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

Note 7B: Reconciliation of the opening and closing balances of property, plant and equipment

Reconciliation of the opening and closing balances of property, plant and equipment for 2014–15

	Property, plant and equipment	Total
	$	$
As at 1 July 2014		
Gross book value	**124,575**	**124,575**
Accumulated depreciation	–	–
Total as at 1 July 2014	**124,575**	**124,575**
Additions		
Purchase	–	–
Revaluations recognised in net cost of services	**22,216**	**22,216**
Depreciation	**(83,101)**	**(83,101)**
Total as at 30 June 2015	**63,690**	**63,690**
Total as at 30 June 2015 represented by		
Gross book value	**63,690**	**63,690**
Accumulated depreciation	–	–
Total as at 30 June 2015	**63,690**	**63,690**

Reconciliation of the opening and closing balances of property, plant and equipment for 2013–14

	Property, plant and equipment	Total
	$	$
As at 1 July 2013		
Gross book value	161,372	161,372
Accumulated depreciation	(85,133)	(85,133)
Total as at 1 July 2013	76,239	76,239
Additions		
Purchase	61,660	61,660
Revaluations recognised in net cost of services	28,490	28,490
Depreciation	(41,814)	(41,814)
Total as at 30 June 2014	124,575	124,575
Total as at 30 June 2014 represented by		
Gross book value	124,575	124,575
Accumulated depreciation	–	–
Total as at 30 June 2014	124,575	124,575

Note 7C: Intangibles

	2015	2014
	$	$
Computer software		
Purchase or internally developed—in progress	31,272	305,861
Purchase or internally developed—in use	951,154	452,461
Accumulated amortisation	(133,850)	(117,345)
Total computer software	848,576	640,977
Total intangibles	848,576	640,977

No indicators of impairment were found for intangible assets.

Note 7D: Reconciliation of the opening and closing balances of intangibles for 2014–15

Reconciliation of the opening and closing balances of intangibles for 2014–15

	Computer software	Total
	$	$
As at 1 July 2014		
Gross book value	758,322	758,322
Accumulated amortisation	(117,345)	(117,345)
Total as at 1 July 2014	640,977	640,977
Additions		
Purchase or internally developed—in progress	31,272	31,272
Purchase or internally developed—in use	292,138	292,138
Write down recognised in net cost of services	(25,570)	(25,570)
Amortisation	(90,241)	(90,241)
Total as at 30 June 2015	848,576	848,576
Total as at 30 June 2015 represented by		
Gross book value	982,426	982,426
Accumulated amortisation	(133,850)	(133,850)
Total as at 30 June 2015	848,576	848,576

Reconciliation of the opening and closing balances of intangibles for 2013–14

	Computer software	Total
	$	$
As at 1 July 2013		
Gross book value	4,976,486	4,976,486
Accumulated amortisation	(3,125,522)	(3,125,522)
Total as at 1 July 2013	1,850,964	1,850,964
Additions		
Purchased or internally developed—in progress	305,861	305,861
Purchased or internally developed—in use	26,225	26,225
Write down recognised in net cost of services	(1,130,068)	(1,130,068)
Amortisation	(412,005)	(412,005)
Total as at 30 June 2014	640,977	640,977
Total as at 30 June 2014 represented by		
Gross book value	758,322	758,322
Accumulated amortisation	(117,345)	(117,345)
Total as at 30 June 2014	640,977	640,977

Note 7E: Inventories

	2015	2014
	$	$
Inventories held for sale		
Inventories	**12,798**	14,169
Total inventories	**12,798**	14,169

During the period the sum of $1,371 of inventory held for sale was recognised as an expense (2013–14: $1,026). Inventories are recognised at cost.

All inventories are not expected to be sold within the next 12 months.

Note 7F: Other non-financial assets

	2015	2014
	$	$
Prepayments	**10,300**	8,381
Total other non-financial assets	**10,300**	8,381
Other non-financial assets expected to be recovered		
No more than 12 months	**10,300**	8,381
Total other non-financial assets	**10,300**	8,381

Note 8: Payables

Note 8A: Suppliers

	2015	2014
	$	$
Trade creditors and accruals	45,221	90,558
FBT payable	1,100	1,100
PAYG payable	38,788	37,452
Total suppliers	85,109	129,110
Suppliers expected to be settled		
No more than 12 months	85,109	129,110
Total suppliers	85,109	129,110
Suppliers in connection with		
Related parties	70,888	68,302
External parties	14,221	60,808
Total suppliers	85,109	129,110

Settlement is usually made within 30 days.

Note 8B: Projects

	2015	2014
	$	$
Public sector		
Australian Government entities	–	35,000
State and territory governments	–	65,375
Private sector		
Universities	68,278	101,853
Cooperative research centres [1]	1,323,914	–
Other	18,739	17,532
Total projects	1,410,931	219,760
Projects expected to be settled		
No more than 12 months	1,410,931	219,760
Total projects	1,410,931	219,760

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.

(1) The Seafood CRC (SCRC) Commonwealth Agreement ceased effective 30 June 2015. Prior to that date a number unfinished SCRC projects were novated to the FRDC. In 2014–15, FRDC has accrued $1,323,914 of novated project payments to the SCRC. There are still some unfinished projects that may yet be novated to the FRDC.

Note 8C: Other payables

	2015	2014
	$	$
Debt payable to Department of Agriculture [1]	–	324,004
Total other payables	–	324,004
Other payables expected to be settled		
No more than 12 months	–	324,004
Total other payables	–	324,004

(1) The debt payable to the Department of Agriculture represents the recovery of AGVP overpayments to the FRDC. The final payment was made in 2014–15.

Note 9: Provisions

Note 9A: Employee provisions

	2015	2014
	$	$
Leave	**864,430**	804,374
Total employee provisions	**864,430**	804,374
Employee provisions that could be settled		
No more than 12 months	**812,812**	762,405
More than 12 months	**51,618**	41,969
Total employee provisions	**864,430**	804,374

Note 10: Cash flow reconciliation

	Note	2015 $	2014 $
Reconciliation of cash and cash equivalents as per Statement of Financial Position to Cash Flow Statement			
Cash and cash equivalents as per			
Cash Flow Statement		**3,183,264**	4,169,252
Statement of Financial Position	6A	**3,183,264**	4,169,252
Discrepancy		**0**	0
Reconciliation of net cost of services to net cash from/(used by) operating activities			
Net (cost of)/contribution by services		**(15,123,095)**	(18,604,883)
Revenue from the Australian Government		**18,708,154**	17,932,344
Adjustments for non-cash items			
Depreciation/amortisation		**173,342**	453,819
Net write down of non-financial assets		**25,570**	1,130,068
Finance costs		**–**	–
Movement in assets and liabilities			
Assets			
(Increase)/decrease in net receivables		**(5,329,223)**	(1,338,987)
(Increase)/decrease in other non-financial assets		**(1,919)**	(8,381)
(Increase)/decrease in inventories		**1,371**	(14,169)
Liabilities			
Increase/(decrease) in employee provisions		**60,056**	39,907
Increase/(decrease) in supplier payables		**(44,001)**	(22,946)
Increase/(decrease) in project payables		**1,191,171**	32,968
Increase/(decrease) in other payables		**–**	–
Net cash from (used by) operating activities		**(338,574)**	(400,260)

Note 11: Contingent assets and liabilities

At 30 June 2015, the FRDC had no contingent assets.

	2015 $	2014 $
Contingent liabilities		
Seafood CRC[(1)]		
Balance from previous period	**1,908,953**	4,295,009
New contingent liabilities recognised	**186,211**	900,000
Obligations expired	**(2,095,164)**	(3,286,056)
Total contingent liabilities	**–**	1,908,953

Quantifiable contingencies

(1) **Seafood CRC**

The Schedule of Contingencies includes contingent liabilities in respect of Seafood CRC Company Ltd (Seafood CRC) in which FRDC is a participant. The FRDC has agreements with the Seafood CRC that commit the FRDC to investing $30,270,930 as at 30 June 2015 ($30,084,719 as at 30 June 2014) over the life of the Seafood CRC. The Seafood CRC agreement with the Commonwealth ceased effective 30 June 2015.

The FRDC recognised $30,270, 930 in Seafood CRC contracts as at 30 June 2015 ($28,175,766 as at 30 June 2014). This leaves a contingent liability of $Nil as at 30 June 2015 ($1,908,953 as at 30 June 2014).

Unquantifiable contingencies

The FRDC had no unquantifiable contingencies.

Significant remote contingencies

The FRDC had no significant remote contingencies.

Note 12: Senior management personnel remuneration

	2015	2014
	$	$
Short-term employee benefits		
Salary	**971,584**	985,298
Total short-term employee benefits	**971,584**	985,298
Post-employment benefits		
Superannuation	**197,620**	174,641
Total post-employment benefits	**197,620**	174,641
Other long-term employee benefits		
Annual leave	**76,956**	74,131
Long service leave	**34,630**	33,359
Total other long-term employee benefits	**111,586**	107,490
Total senior management personnel remuneration	**1,280,790**	1,267,429

During the year no termination benefits were paid to senior executives (2013–14: $Nil).

The total number of senior management personnel that are included in the above table is **11** (2013–14: 11) made up of 7 non-executive directors and 4 senior executive staff members.

Note 13: Related party disclosures

The directors of the FRDC during the year were:

Ms Heather Brayford	Director (Member Remuneration Committee)
Ms Renata Brooks	Director (Deputy Chair Finance, Audit and Risk Management Committee from 11 February 2015)
Dr Patrick Hone	Executive Director
Dr Bruce Mapstone	Director
Mr Brett McCallum	Director (Deputy Chair) (Chair Finance, Audit and Risk Management Committee)
Dr Peter O'Brien	Director (Member Remuneration Committee; Member Finance, Audit and Risk Management Committee from 11 February 2015)
Mr David Thomason	Director—Deceased 23 November 2014 (Deputy Chair Finance, Audit and Risk Management Committee)
The Hon. Harry Woods	Chair (Chair Remuneration Committee)
Ms Christine Feldmanis[1]	Independent Member Finance, Audit and Risk Management Committee

(1) Paid under a consultancy agreement and those payments are not included in Note 12: Senior management personnel remuneration.

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 directors who have disclosed a material personal interest have attributed to them all the transactions of that entity with the FRDC. Typically, the FRDC will not transact with all the entities for which a director has made such a declaration.

The FRDC 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.

No loans were made to directors or director-related entities during the year.

Director	Organisation and position held	Nature of interest	Expenditure paid to entity $	Income received from entity $
Ms H. Brayford	Department of Fisheries Western Australia *Director General*	Research projects or work undertaken by the organisation	1,460,737	1,667,884
Ms R. Brooks (ceased with Department of Primary Industries 31 January 2015)	Department of Primary Industries (NSW) *Deputy Director, General Land and Natural Resources*	Research projects or work undertaken by the organisation	373,029	108,024
Dr P. Hone	Seafood CRC Company Ltd *Director*	Research projects or work undertaken by the organisation	4,717,823	3,122,429
Dr B. Mapstone	CSIRO *Member, Executive Management Council*	Research projects or work undertaken by the organisation	2,774,470	7,776
	Institute of Marine and Antarctic Studies at the University of Tasmania *Member, Advisory Board*	Research projects or work undertaken by the organisation	2,408,871	782
Dr P. O'Brien	Australian Rural Leadership Foundation *Governor Member*	Research projects or work undertaken by the organisation	121,000	–
Mr D. Thomason (deceased 23 November 2014)	Seafood CRC Company Ltd *Director*	Research projects or work undertaken by the organisation	2,058,470	170,515

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

Note 14: Other related party disclosures

The FRDC has a Research & Development Funding Head Agreement with the Department of Agriculture under which it manages the suite of projects detailed below.

2014–15

- AQUAPLAN 2014–2019 activities 2.2, 3.4 & 3.7
- Assisting commercial and recreational organisations adapt to national maritime safety standards
- Commonwealth Fisheries Harvest Strategy Policy
- Training, education and extension support in the development and implementation of the Fisheries Communications Strategy
- Small Pelagic Fishery
- AW1213-13—Aquatics Communications Co-ordinator
- Rural R&D for Profit: Growing a profitable,innovative and collaborative Australian Yellowtail Kingfish aquaculture industry: bringing white fish to the market

2013–14

- Aquaplan 2014–19
- Aquavetplan

The FRDC has recognised in 2014–15: $3,496,753 (2013–14: $131,740) (refer Note 4C: Grants).

Torres Strait Regional Authority

The FRDC has a Research & Development Funding Agreement with the Torres Strait Regional Authority under which it manages the suite of projects and programs detailed below.

2014–15

- Torres Strait Fisheries Development
- Development of a Torres Strait Islander and Aboriginal Traditional Inhabitant Commercial Finfish Fishery Action Plan for the Torres Strait Finfish Fishery and supporting Communications Plan

2013–14

- Finfish Fishery Action Plan

The FRDC has recognised in 2014–15: $768,500 (2013–14: $40,000) (refer Note 4C: Grants).

Note 15: Financial instruments

Note 15A: Categories of financial instruments

	2015	2014
	$	$
Financial assets		
Loans and receivables		
Cash and cash equivalents	**3,183,264**	4,169,252
Trade and other receivables	**7,933,010**	2,535,306
Other investments	**5,001**	5,001
Loan	**–**	2,500
Total loans and receivables	**11,121,275**	6,712,059
Total financial assets	**11,121,275**	6,712,059
Financial liabilities		
Other financial liabilities		
Suppliers	**45,221**	90,558
Projects	**1,410,931**	219,760
Other payables	**–**	324,004
Total other financial liabilities	**1,456,152**	634,322
Total financial liabilities	**1,456,152**	634,322

Note 15B: Net gain or loss from financial assets

	2015	2014
	$	$
Loans and receivables		
Interest revenue (Note 4B)	**199,572**	219,583
Net gain from loans and receivables	**199,572**	219,583

Note 15C: Fair value of financial instruments

	Carrying amount 2015	Fair value 2015	Carrying amount 2014	Fair value 2014
	$	$	$	$
Financial assets				
Loans and receivables				
Cash and cash equivalents	**3,183,264**	**3,183,264**	4,169,252	4,169,252
Trade and other receivables	**7,933,010**	**7,933,010**	2,535,306	2,535,306
Other investments [1]	**5,001**	–	5,001	–
Loan	–	–	2,500	2,500
Total financial assets	**11,121,275**	**11,116,274**	6,712,059	6,707,058
Financial liabilities				
Other financial liabilities				
Suppliers	**45,221**	**45,221**	90,558	90,558
Projects	**1,410,931**	**1,410,931**	219,760	219,760
Other payables	–	–	324,004	324,004
Total financial liabilities	**1,456,152**	**1,456,152**	634,322	634,322

(1) There are no significant differences between the carrying amounts and fair values of financial assets and liabilities; with the exception of the value of *Other investments*, which is carried at cost because it does not have a quoted market price in an active market, and a fair value cannot be reliably measured.

Note 15D: Credit risk

The FRDC's activities expose it to normal commercial financial risk. As a result of the nature of the FRDC's business, the FRDC's internal policies, and Australian Government policies dealing with the management of financial risk, the FRDC's exposure to market, credit, liquidity, cash flow and fair value interest rate risk is considered to be low.

The majority of FRDC's receivables are from government agencies, industry, universities and program contributors that have long-standing relationships with the FRDC.

The FRDC held no collateral to mitigate against credit risk.

Credit quality of financial assets not past due or individually determined as impaired

	Not past due nor impaired	Not past due nor impaired	Past due or impaired	Past due or impaired
	2015	2014	2015	2014
	$	$	$	$
Cash and cash equivalents	**3,183,264**	4,169,252	–	–
Receivables for goods and services	**7,910,106**	2,024,529	**22,904**	510,777
Other investments	**5,001**	5,001	–	–
Loan	–	2,500	–	–
Total	**11,098,371**	6,201,282	**22,904**	510,777

Ageing of financial assets that were past due but not impaired for 2015

	0 to 30 days	31 to 60 days	61 to 90 days	90+ days	Total
	$	$	$	$	$
Receivables for goods and services	–	134	–	22,770	22,904
Total	–	134	–	22,770	22,904

Ageing of financial assets that are past due but not impaired for 2014

	0 to 30 days	31 to 60 days	61 to 90 days	90+ days	Total
	$	$	$	$	$
Receivables for goods and services	205,270	550	244,750	60,207	510,777
Total	205,270	550	244,750	60,207	510,777

As of 30 June 2015, other receivables in the amount of $22,904 (2013–14: $510,777) were past due, but not impaired.

These relate to debtors for whom there is no recent history of default. The FRDC has been in contact with the relevant debtors, and is satisfied that the payment will be received in full.

Other balances within other receivables do not contain impaired assets and are not past due. It is expected these balances will be received when due.

Note 15E: Liquidity risk

The FRDC's financial liabilities are supplier payables, project payables, and other payables. The exposure to liquidity risk is based on the notion that the FRDC will encounter difficulty in meeting its obligations associated with these financial liabilities. This is highly unlikely due to Australian Government funding and internal policies and procedures put in place to ensure there are appropriate resources for the FRDC to meet its financial obligations.

Maturities for non-derivative financial liabilities in 2015

	On demand	Within 1 year	Between 1 to 2 years	Between 2 to 5 years	Total
	$	$	$	$	$
Suppliers	–	45,221	–	–	45,221
Projects	–	1,410,931	–	–	1,410,931
Other payables	–	–	–	–	–
Total	–	1,456,152	–	–	1,456,152

Maturities for non-derivative financial liabilities in 2014

	On demand	Within 1 year	Between 1 to 2 years	Between 2 to 5 years	Total
	$	$	$	$	$
Suppliers	–	90,558	–	–	90,558
Projects	–	219,760	–	–	219,760
Other payables	–	324,004	–	–	324,004
Total	–	634,322	–	–	634,322

The FRDC had no derivative financial liabilities in either 2014–15 or 2013–14.

Note 15F: Market risk

The FRDC holds basic financial instruments that do not expose the FRDC to certain market risks. The FRDC is not exposed to 'currency risk' or 'other price risk'.

Note 16: Financial assets reconciliation

	Note	2015 $	2014 $
Total financial assets as per Statement of Financial Position		11,141,062	6,797,827
Less: non-financial instrument components			
GST receivable from the Australian Taxation Office	6B	19,787	85,768
Total non-financial instrument components		19,787	85,768
Total financial assets as per financial instruments note		11,121,275	6,712,059

Note 17: Reporting of outcome

The FRDC is a co-funded partnership between its stakeholders, the Australian Government and the Australian fishing industry (aquaculture, commercial fishing, Indigenous fishing and recreational fishing) accountable to the Parliament of Australia through the Minister for Agriculture.

The objective of the FRDC is to plan and invest in fisheries RD&E activities in Australia. As a national organisation with strong linkages to industry, managers, and researchers it has a fundamental role is providing leadership and coordination. The FRDC achieves this through establishing strong relationships, and putting in place mechanisms to identify and address RD&E priorities with industry and government stakeholders. In addition the FRDC monitors and evaluates the adoption of research and development outputs to better inform future decisions.

Note 17A: Net cost of outcome delivery

	Outcome 1	
	2015 $	2014 $
Departmental		
Expenses	28,155,832	27,563,145
Own-source income	13,032,737	8,958,262
Net cost/(contribution) of outcome delivery	15,123,095	18,604,883

Note 17B: Major classes of departmental expenses, income, assets and liabilities by outcome

	Outcome 1	
	2015	2014
	$	$
Expenses		
Employees	2,094,407	2,021,461
Suppliers	1,008,568	1,085,734
Projects	24,853,945	22,872,063
Depreciation and amortisation	173,342	453,819
Write down and impairment of assets	25,570	1,130,068
Total expenses	28,155,832	27,563,145
Own-source income		
Revenue from the Australian Government	18,708,154	17,932,344
Sale of goods and rendering of services	2,245	83,541
Interest	199,572	219,583
Grants	4,265,254	171,740
Contributions	8,565,666	8,463,990
Other	–	19,408
Total	31,740,891	26,890,606
Assets		
Cash and cash equivalents	3,183,264	4,169,252
Trade and other receivables	7,952,7971	2,623,574
Other investments	5,001	5,001
Property, plant and equipment	63,690	124,575
Intangibles	848,576	640,977
Inventories	12,798	14,169
Other non-financial assets	10,300	8,381
Total assets	12,076,426	7,585,929
Liabilities		
Suppliers	85,109	129,110
Projects	1,410,931	219,760
Other payables	–	324,004
Employee provisions	864,4301	804,374
Total liabilities	2,360,470	1,477,248

Note 18: Budgetary reports and explanations of major variances

The following tables provide a comparison of the original budget as presented in the 2014–15 Portfolio Budget Statements (PBS) to the 2014–15 final outcome as presented in accordance with Australian Accounting Standards for the FRDC. The budget is not audited.

Note 18A: Departmental budgetary reports

Statement of Comprehensive Income

FOR THE PERIOD ENDED 30 JUNE 2015

	Actual	Budget estimate	
	(A)	(B)	(C)=A–B
		Original [1]	Variance [2]
	2015	2015	2015
	$	$	$
NET COST OF SERVICES			
Expenses			
Employee benefits	2,094,407	2,375,000	(280,593)
Suppliers	1,008,568	1,420,000	(411,432)
Projects	24,853,945	22,934,000	1,919,945
Depreciation and amortisation	173,342	250,000	(76,658)
Write down and impairment of assets	25,570	–	25,570
Other expenses	–	460,000	(460,000)
Total expenses	28,155,832	27,439,000	716,832
Own-source income			
Own-source revenue			
Sale of goods and rendering of services	2,245	20,000	(17,755)
Interest	199,572	260,000	(60,428)
Grants	4,265,254	–	4,265,254
Contributions	8,565,666	7,881,000	684,666
Other revenue	–	1,002,000	(1,002,000)
Total own-source revenue	13,032,737	9,163,000	3,869,737
Total own-source income	13,032,737	9,163,000	3,869,737
Net cost of services	15,123,095	18,276,000	3,152,905
Revenue from the Australian Government	18,708,154	18,287,000	421,154
Surplus/(deficit) attributable to the Australian Government	3,585,059	11,000	3,574,059
OTHER COMPREHENSIVE INCOME			
Items not subject to subsequent reclassification to net cost of services			
Changes in asset revaluation surplus	22,216	–	22,216
Total other comprehensive income	22,216	–	22,216
Total comprehensive income (loss) attributable to the Australian Government	3,607,275	11,000	3,596,275

(1) The FRDC's original budgeted financial statement that was first presented to Parliament in respect of the reporting period from the 2014–15 Portfolio Budget Statements (PBS).

(2) Between the actual and original budgeted amounts for 2014–15. Explanations of major variances are provided in Note 18B.

Statement of Financial Position

AS AT 30 JUNE 2015

	Actual	Budget estimate	
	(A)	(B)	(C)=A–B
		Original[1]	Variance[2]
	2015	2015	2015
	$	$	$
ASSETS			
Financial assets			
Cash and cash equivalents	3,183,264	5,071,000	(1,887,736)
Trade and other receivables	7,952,797	1,526,000	6,426,797
Other investments	5,001	5,000	1
Other financial assets	–	–	–
Total financial assets	11,141,062	6,602,000	4,539,062
Non-financial assets			
Property, plant and equipment	63,690	75,000	(11,310)
Intangibles	848,576	719,000	129,576
Inventories	12,798	–	12,798
Other non-financial assets	10,300	–	10,300
Total non-financial assets	935,364	794,000	141,364
Total assets	12,076,426	7,396,000	4,680,426
LIABILITIES			
Payables			
Suppliers	85,109	170,000	(84,891)
Projects	1,410,931	200,000	1,210,931
Other payables	–	85,000	(85,000)
Total payables	1,496,040	455,000	1,041,040
Provisions			
Employee provisions	864,430	713,000	151,430
Total provisions	864,430	713,000	151,430
Total liabilities	2,360,470	1,168,000	1,192,470
Net assets	9,715,956	6,228,000	3,487,956
EQUITY			
Reserves	245,387	194,000	51,387
Retained earnings	9,470,569	6,034,000	3,436,569
Total equity	9,715,956	6,228,000	3,487,956

(1) The FRDC's original budgeted financial statement that was first presented to Parliament in respect of the reporting period from the 2014–15 Portfolio Budget Statements (PBS).

(2) Between the actual and original budgeted amounts for 2014–15. Explanations of major variances are provided in Note 18B.

NOTE 18A: DEPARTMENTAL BUDGETARY REPORTS (CONTINUED)

Statement of Changes in Equity

FOR THE PERIOD ENDED 30 JUNE 2015

	Retained earnings			Asset revaluation surplus			Total equity		
	Actual	Budget estimate		Actual	Budget estimate		Actual	Budget estimate	
		Original[1]	Variance[2]		Original[1]	Variance[2]		Original[1]	Variance[2]
	2015	2015	2015	2015	2015	2015	2015	2015	2015
	$	$	$	$	$	$	$	$	$
Opening balance									
Balance carried forward from previous period	**5,885,510**	6,023,000	(137,490)	**223,171**	194,000	29,171	**6,108,681**	6,217,000	(108,319)
Adjusted opening balance	**5,885,510**	6,023,000	(137,490)	**223,171**	194,000	29,171	**6,108,681**	6,217,000	(108,319)
Comprehensive income									
Surplus (deficit) for the period	**3,585,059**	11,000	3,574,059	–	–	–	**3,585,059**	11,000	3,574,059
Other comprehensive income	–	–	–	**22,216**	–	22,216	**22,216**	–	22,216
Total comprehensive income	**3,585,059**	11,000	3,574,059	**22,216**	–	22,216	**3,607,275**	11,000	3,596,275
Total comprehensive income attributable to the Australian Government	**3,585,059**	11,000	3,574,059	**22,216**	–	22,216	**3,607,275**	11,000	3,596,275
Closing balance as at 30 June 2015	**9,470,569**	6,034,000	3,436,569	**245,387**	194,000	51,387	**9,715,956**	6,228,000	3,487,956
Closing balance attributable to the Australian Government	**9,470,569**	6,034,000	3,436,569	**245,387**	194,000	51,387	**9,715,956**	6,228,000	3,487,956

(1) The FRDC's original budgeted financial statement that was first presented to Parliament in respect of the reporting period from the 2014–15 Portfolio Budget Statements (PBS).

(2) Between the actual and original budgeted amounts for 2014–15. Explanations of major variances are provided in Note 18B.

Cash Flow Statement

FOR THE PERIOD ENDED 30 JUNE 2015

	Actual	Budget estimate	
	(A)	(B)	(C)=A-B
		Original[1]	Variance[2]
	2015	2015	2015
	$	$	$
OPERATING ACTIVITIES			
Cash received			
Goods and services	–	20,000	(20,000)
Receipts from the Australian Government	16,814,739	18,287,000	(1,472,261)
Contributions	8,271,323	7,974,000	297,323
Grants	2,273,283	–	2,273,283
Interest	194,948	260,000	(65,052)
Net GST received	1,530,684	–	1,530,684
Other	2,245	460,000	(457,755)
Total cash received	29,087,222	27,001,000	2,086,222
Cash used			
Employees	(2,034,351)	(2,360,000)	325,649
Suppliers	(1,243,276)	(1,434,000)	190,724
Projects expenditure	(26,148,169)	(23,384,000)	(2,764,169)
Total cash used	(29,425,796)	(27,178,000)	(2,247,796)
Net cash from/(used by) operating activities	(338,574)	(177,000)	(161,574)
INVESTING ACTIVITIES			
Cash used			
Purchase of property, plant and equipment	–	(50,000)	50,000
Purchase of intangibles	(323,410)	(100,000)	(223,410)
Total cash used	(323,410)	(150,000)	(173,410)
Net cash used by investing activities	(323,410)	(150,000)	(173,410)
FINANCING ACTIVITIES			
Cash used			
Other	(324,004)	–	(324,004)
Total cash used	(324,004)	–	(324,004)
Net cash used by financing activities	(324,004)	–	(324,004)
Net increase/(decrease) in cash held	(985,988)	(327,000)	(658,988)
Cash and cash equivalents at the beginning of the reporting period	4,169,252	5,398,000	(1,228,748)
Cash and cash equivalents at the end of the reporting period	3,183,264	5,071,000	(1,887,736)

(1) The FRDC's original budgeted financial statement that was first presented to parliament in respect of the reporting period from the 2014–15 Portfolio Budget Statements (PBS).

(2) Between the actual and original budgeted amounts for 2014–15. Explanations of major variances are provided in Note 18B.

Note 18B: Departmental major budget variances for 2015

Explanations of major variances

The major variance in 2014–15 was to the surplus attributable to the Australian Government.

This variance was due to a combination of factors detailed below:	Affected line items (and statement)
PBS Project expenditure and Australian Government revenue was reduced by $1,146,000 to reflect a proposed amendment to the PIRD Act that ended up not being passed by Parliament before the end of the financial year.	• Statement of Comprehensive Income Line items: (Expenses—Projects) (Own-source revenue—Contributions) (Revenue from Australian Government)
The Department of Agriculture provided FRDC with funding grants for various project activities totalling $3,496,753 (refer Note 15).	• Statement of Comprehensive Income Line item: (Grants) • Statement of Financial Position Line item: (Financial assets— Trade and other receivables) • Cash Flow Statement Line item: (Cash received—Grants)
The timing of the Department of Agriculture AGVP determination (05 June 2015) made it impossible for some special appropriation payments to be made before 30 June 2015. The payments have since been made.	• Statement of Financial Position Line item: (Financial assets— Trade and other receivables)
The Seafood CRC ceased effective 30 June 2015; and before ceasing novated a number of unfinished projects to the FRDC resulting in accrued payables of $1,323,914 (refer Note 8B).	• Statement of Financial Position Line item: (Liabilities—Payables projects)

We heard that recreational fishers want to contribute to the research that will improve aquatic resources and the quality of their angling experiences.

Appendices

A+B+C+D+E+F

APPENDIX A: The FRDC's principal revenue base

As stipulated in the PIRD Act, and shown in figure 4, the FRDC's primary revenue source is based on:

A. Australian Government providing unmatched funds equivalent to 0.50 per cent of the average gross value of Australian fisheries production (AGVP) for the current year plus the two preceding years,

B. fishers and aquaculturists providing contributions via government,

C. Australian Government matches this amount up to a maximum of 0.25 per cent of AGVP,

D. funds received from RD&E providers, both as cash and in-kind contributions through projects that have been successful for funding,

E. marketing funds collected from the sectors through a statutory levy (or if approved voluntary contributions). Marketing funds are not eligible to be matched by the Commonwealth.

There is no legislative impediment to fishers and aquaculturists contributing to the FRDC above the maximum level at which the Australian Government will provide a matching contribution. Industry contributions for the past financial year and trends for the past five years are shown on page iv.

Details of all FRDC revenue (including investments, royalties, and sales of products, information and services) are in the financial statements starting on page 133.

FIGURE 3: PROPORTIONS OF THE 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 RD&E investments and are to be used for marketing only

Rationale for the FRDC's revenue base

The high component of public good in the operating environment of the fishing industry, has significance for the FRDC's revenue base. The Australian Government's contribution of 0.50 per cent of AGVP is made on the grounds that the Australian Government exercises a stewardship role in relation to fisheries resources on behalf of the Australian community.

The fishing and aquaculture industry contributes to the FRDC on the basis that RD&E 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 roughly in proportion to the benefits received, but the government should contribute to spill-over benefits to the wider community.

APPENDIX B: The FRDC's legislative foundation and the exercise of ministerial powers

The FRDC was formed as a statutory corporation on 2 July 1991 under the provisions of the (now) PIRD Act. It also operates under the provisions of the PGPA Act, which applies high standards of accountability while providing for the independence required by the Corporation's role as a statutory authority.

The FRDC's objects, deriving from section 3 of the PIRD Act and shown in Appendix C, are incorporated in the FRDC's vision and planned outcomes. As reflected in table 3 on page 36, the FRDC's five R&D programs mirror the industry development, natural resources sustainability and people development themes of, respectively, sub-sections 3(a), (b) and (c) of the Act. This alignment has brought simplicity and robustness to the FRDC's RD&E planning, implementation and reporting, and to many of the organisations with which it does business. Importantly, the alignment ensures the RD&E outputs resulting from the FRDC's investments fully address the legislative objects.

More information about the FRDC's legislative foundations can be found in Appendix C.

Enabling legislation

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

The FRDC Board is responsible to the Minister for Agriculture and, through him, to the Parliament of Australia.

The objects, functions and statutory powers of R&D corporations are specified in the PIRD Act, the text of which is available via the FRDC website.

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

Objects

The objects of the FRDC, deriving from section 3 of the PIRD Act, are to:

(a) make provision for the funding and administration of research and development relating to primary industries with a view to:

  (i) increasing the economic, environmental and social benefits to members of primary industries and to the community in general by improving the production, processing, storage, transport or marketing of the products of primary industries, and

  (ii) achieving the sustainable use and sustainable management of natural resources, and

  (iii) making more effective use of the resources and skills of the community in general and the scientific community in particular, and

  (iv) supporting the development of scientific and technical capacity; and

  (v) developing the adoptive capacity of primary producers, and

  (vi) improving accountability for expenditure on research and development activities in relation to primary industries, and

(b) make provision for the funding and administration of marketing relating to products of primary industries.

Functions

The functions of the FRDC, deriving from section 11 of the PIRD Act, are to:

- investigate and evaluate the requirements for fisheries research and development and, on that basis, prepare a five-year R&D plan, review it annually and revise it if required,
- prepare an annual operational plan for each financial year,
- coordinate or fund the carrying out of R&D activities that are consistent with the annual operational plan,
- monitor and evaluate fisheries RD&E activities that are funded and report on them to the Parliament; the Minister for Agriculture, statutory levy payers and the FRDC representative organisations, and
- facilitate the dissemination, adoption and commercialisation of the results of fisheries R&D.

Statutory powers

Subject to the PIRD Act, the FRDC is empowered under section 12 of the Act to do all things necessary or convenient to be done for, or in connection with, the performance of its functions, which may include:

- entering into agreements for the carrying out of R&D activities by other persons,
- entering into agreements for the carrying out of R&D activities by the FRDC and other persons,
- making applications, including joint applications for patents,
- dealing with patents vested in the FRDC and other persons,
- making charges for work done, services rendered, and goods and information supplied by it,
- accepting gifts, grants, bequests and devices made to it, and acting as trustee of money and other property vested in it on trust,
- acquiring, holding and disposing of real and personal property,
- joining in the formation of a company, and
- doing anything incidental to any of its powers.

The description of ministerial powers below 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. They relate to:

- directing the FRDC in writing as to the performance of its functions and the exercise of its powers,
- approving the RD&E plan and the annual operational plan,
- requesting and approving variation to the RD&E 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 Executive Director) in relation to matters not provided for by the PIRD Act,
- appointing the Chairperson,
- appointing directors, other than the Chairperson and Executive Director, from persons nominated by a selection committee,
- declaring one or more specified organisations to be representative organisations in relation to the FRDC,
- determining the gross value of production of the fishing industry for the purposes of establishing the maximum payments by the Australian Government to the FRDC,
- establishing written guidelines covering the payment by the FRDC to an eligible industry body, or member of an eligible industry body, for expenses reasonably incurred in connection with consultation with the FRDC,
- causing, at least once in each financial year, a coordination meeting to be held of all R&D corporations,
- granting leave of absence to the Chairperson, and
- terminating the appointment of the Chairperson or a director other than the Executive Director.

Additional powers under the PGPA Act relating to corporate governance and reporting are available to the Minister for Agriculture.

Exercise of ministerial powers during 2014–15 is described on pages 15 and 115.

APPENDIX C: Principal legislative requirements for reporting

This annual report complies with the requirements of Commonwealth legislation. The principal reporting requirements, and some of their consequences for the FRDC, are outlined in this appendix. The Acts are:

- *Primary Industries Research and Development Act 1989* (PIRD Act),
- *Public Governance, Performance and Accountability Act 2013* (PGPA Act),
- *Environment Protection and Biodiversity Conservation Act 1999* (Section 16A).

PGPA Act requirements

The PGPA Act is one of the principal legislation that specifies the content and standards of presentation of statutory authorities' annual reports for parliamentary scrutiny.

Part 2–3: Planning, Performance and Accountability—consolidates government policy for planning and performance reporting with budgets and actuals for both financial and non-financial measures. Section 46 of the PGPA Act requires the FRDC's directors to prepare an annual report in accordance with PGPA Rules, and to give it to the responsible minister by 15 October.

PIRD Act requirements

The PIRD Act also specifies matters that must be reported. In particular, section 28 states:

(1) The directors must include in each report on an R&D corporation prepared under section 9 of the *Commonwealth Authorities and Companies Act 1997*:

(a) particulars of:

(i) the R&D activities that it coordinated or funded, wholly or partly, during the period, and

(ia) if a levy attached to the Corporation had a marketing component during the period—the marketing activities that it coordinated or funded, wholly or partly, during the period, and

(ii) the amount that it spent during the period in relation to each of those activities, and

(iib) the impact of those activities on the primary industry or class of primary industries in respect of which the Corporation was established, and

(iii) revisions of its R&D plan approved by the Minister during the period, and

(iv) the entering into of agreements under sections 13 and 14 during the period and its activities during the period in relation to agreements entered into under that section during or prior to the period, and

(v) its activities during the period in relation to applying for patents for inventions, commercially exploiting patented inventions and granting licences under patented inventions, and

(vi) the activities of any companies in which the Corporation has an interest, and

(vii) any activities relating to the formation of a company, and

(viii) significant acquisitions and dispositions of real property by it during the period, and

(b) an assessment of the extent to which its operations during the period have:

(i) achieved its objectives as stated in its R&D plan, and

(ii) implemented the annual operational plan applicable to the period, and

(c) an assessment of the extent to which the Corporation has, during the period, contributed to the attainment of the objects of this Act as set out in section 3, and

(d) in respect of the grain industry or such other primary industry or class of primary industries as is prescribed in the regulations, particulars of sources and expenditure of funds, including:

(i) commodity, cross commodity and regional classifications, and

(ii) funds derived from transfer of assets, debts, liabilities and obligations under section 144.

EPBC Act requirements

Section 516A requires annual reports for Commonwealth entities to report against the criteria set out in that section of the Act.

Part 21—Reporting—Division 1—Annual reports
Section 516A: Annual reports to deal with environmental matters

(6) A report described in subsection (1), (4) or (5) relating to a body or person (the reporter) for a period must:

(a) include a report on how the activities of, and the administration (if any) of legislation by, the reporter during the period accorded with the principles of ecologically sustainable development, and

(b) identify how the outcomes (if any) specified for the reporter in an Appropriations Act relating to the period contribute to ecologically sustainable development, and

(c) document the effect of the reporter's activities on the environment, and

(d) identify any measures the reporter is taking to minimise the impact of activities by the reporter on the environment, and

(e) identify the mechanisms (if any) for reviewing and increasing the effectiveness of those measures.

APPENDIX D: Government priorities

In May 2015, the Australian Government announced a new set of Science and Research Priorities (SRPs) which updated the previous National Research Priorities and complement the Rural Research Priorities.

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

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

Government Research Priorities attributed to each RD&E program ($ and %)

Rural Research Priorities	Total expenditure	
	$ (m)	%
Productivity and adding value	4.56	18.35
Supply chain and markets	1.68	6.76
Natural resource management	11.96	48.13
Climate variability and climate change	1.02	4.10
Biosecurity	1.84	7.40
Innovation skills	1.31	5.27
Technology	1.39	5.59
Other research	1.10	4.43
Total	24.85	100.00

Science and Research Priorities	Total expenditure	
	$ (m)	%
Food	8.17	32.87
Soil and water	9.78	39.37
Transport	0.52	2.10
Cybersecurity	–	–
Energy	0.17	0.68
Resources	–	–
Advanced manufacturing	3.11	12.50
Environmental change	0.87	3.52
Health	1.06	4.28
Other research	1.17	4.69
Total	24.85	100.00

Figures in these tables have been rounded, hence totals may not agree with component figures.

APPENDIX E: Freedom of information statement

Australian Government agencies subject to the *Freedom of Information Act 1982* (FOI Act) are required to publish information to the public as part of the Information Publication Scheme (IPS). This requirement is in Part II of the FOI Act and each agency must display on its website a plan showing what information it publishes in accordance with the IPS requirements.

Further information on the FRDC's agency plan is available from the FRDC website—http://frdc.com.au/about_frdc/foi/Pages/default.aspx

Role, structure and functions

The FRDC's role is described on page 20 of this annual report; its structure and functions and legislation under which it is established are described in Appendices A to C.

Documents available for inspection

RD&E plan (the FRDC's 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 *
RD&E funding applications	Files
Annual report	File, publications and FRDC website *
FISH magazine	File, publications, iPad and FRDC website *
Administration	Files, unpublished document
Mailing lists	Database

* The FRDC's website address is www.frdc.com.au

Some other information may be subject to assessment of access for such matters as commercial confidentiality or personal privacy in accordance with the FOI Act.

Access to documents

To seek access to FRDC documents, please contact the FRDC's FOI Officer: address, telephone, fax and e-mail details are shown inside the back cover of this report. It may not be necessary to request the information under the FOI Act—the FRDC may simply provide it to you when you ask for it. At all times, however, you have the option of applying under the FOI Act.

Fees and charges for FOI

Request	Charge
Application	No fee
Search and retrieval	$15 per hour
Decision making and consultation	First five hours free, after that $20 per hour
When a FOI request is not responded to within the statutory time limit	No fee
Internal review	No fee
Request for personal information	No fee

The standard FOI application fee is nil when making your application, however processing charges will apply.

Documents are usually made available for direct access at the FRDC's office in Canberra. They may also be provided, depending on your preference:

- by post (photocopies) to an address specified in your request, or
- at the Information Access Office (established by the Attorney-General) nearest where you live.

APPENDIX F: Board selection committee report

Establishment of the selection committee

The FRDC selection committee was established under the *Primary Industries Research and Development Act 1989* (PIRD Act) to select and nominate six qualified and suitable persons for appointment as non-executive directors of FRDC.

On 3 March 2015, Professor Glenn Hurry was appointed as the FRDC selection committee presiding member until 31 December 2017 and commenced the selection process, as directed in the letter of appointment.

In addition to Professor Hurry as presiding member, the selection committee comprised four members, who were nominated by Professor Hurry following consultation with FRDC's representative organisations —the National Aquaculture Council, Commonwealth Fisheries Association, RecFish Australia and the National Seafood Industry Alliance. On 30 April 2015, the Hon. Barnaby Joyce MP, Minister for Agriculture appointed the following selection committee members:

- Mr Brian Jeffriess AM, Chief Executive, Commonwealth Fisheries Association,
- Mr Pheroze Jungawalla, National Aquaculture Council,
- Ms Lowri Pryce, National Seafood Industry Alliance,
- Mr Russell Conway, Recfish Australia.

Selection process

The selection committee conducted a thorough process to identify the widest possible field of available candidates.

At the commencement of this process, Professor Hurry undertook relevant consultations with the FRDC Executive Director, Dr Patrick Hone, about the process and the major issues under consideration by the FRDC. Prior to shortlisting, the FRDC Chair, the Hon. Harry Woods was also consulted about the mix of skills on the current Board and insights that he had into the Board's performance and the skills the new Board would require to successfully guide the organisation into the future.

Applications were called through advertisements placed in the national press—*Australian Financial Review* on 13 March 2015 and the *Weekend Australian* on 14 March 2014. The Department of Agriculture listed the vacancies on the AusGovBoards and Women on Boards websites. The advertisement was also e-mailed to all registrants on the department's Balance database. Applications closed on 27 March 2015.

A total of 167 applications were received, of which 43 (25.7 per cent) were from female applicants. The FRDC's four representative organisations were also invited to nominate candidates for consideration by the selection committee.

Secretariat services were provided by Ms Barbara Lawrence of Hayes Consulting, Melbourne.

In developing a shortlist of candidates, the selection committee took into account the core selection criteria listed in subsection 131(1) of the PIRD Act, along with additional criteria considered important by the Chair—agri-business and marketing—due to the FRDC's potential role in marketing. The selection committee gave due consideration to diversity, skills and experience of the candidates, individually and as a nominated group.

Nominations for appointment

The selection committee unanimously agreed on the final six nominations and a list of 10 other applicants considered suitable for appointment. The final nominations and list of other suitable candidates were provided to the Hon. Barnaby Joyce MP and the Parliamentary Secretary to the Minister, Senator the Hon. Richard Colbeck on 7 June 2015.

As this report only includes information on activities for the 2014–15 financial year, information on the final appointments and additional costs will be included in the annual report for next year.

Expenses

The following table includes the selection committee's expenses for 2014–15.

Item	1 May–30 June 2015	1 July–25 August 2015
Advertising	$10,855.92	–
Selection committee and interviewee travel expenses	$18,027.15	$1,123.80
Presiding member fees	–	$11,064.00
Secretarial/administrative	$4,414.63	–
Selection committee support and scribing	$2,222.50	–
	$35,520.20	$12,187.80
Sub total		$47,708.00
GST		$4,770.80
Total (including GST)		$52,478.80

We heard that often a small or short-term investment in training or tactical research can develop future leaders and have long-term benefits for the seafood industry as a whole.

LIST OF ABBREVIATIONS AND ACRONYMS

AASB	Australian Accounting Standards Board
ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
AGVP	average gross value of production
APFA	Australian Prawn Farmers Association
ASCo	Australian Seafood Co-products
BCA	benefit-cost analysis
CRC	cooperative research centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DNA	deoxyribonucleic acid
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
ESD	ecologically sustainable development
FBT	fringe benefits tax
FOI Act	*Freedom of Information Act 1982*
FRAB	Fisheries Research Advisory Body
FRDC	Fisheries Research and Development Corporation
GPS	global positioning system
GST	goods and services tax
ISO	International Organization for Standardisation
IT	information technology
KPI	key performance indicator
m	million
MP	member of parliament
NSW	New South Wales
PGPA Act	*Public Governance, Performance and Accountability Act 2013*
PhD	Doctor of Philosophy
PIRD Act	*Primary Industries Research and Development Act 1989*
POMS	Pacific Oyster mortality syndrome
QX	Queensland unknown
R&D	research and development
RD&E	research, development and extension
RDC	research and development corporation
SARDI	South Australian Research and Development Institute
TAFE	technical and further education
WHS Act	*Work Health and Safety Act 2011*

We heard that government-funded fisheries research should continue to contribute to the sustainable use and development of aquatic resources for the people of Australia.

Indices
Compliance
Alphabetical

Australia wide. Cape Byron Lighthouse, New South Wales.
Opposite page Maatsuyker Island Lighthouse, Tasmania.

INDEX: Compliance

This index shows the page numbers on which the FRDC has reported on matters specified in Australian Government legislation and policies.

The requirements for annual reports acknowledges that agencies vary in role and size and there is discretion as to the extent of information to include in annual reports and the sequence in which it is presented. The Joint Committee on Publications has also observed that a departmental report will necessarily be different from that of a statutory authority; a statutory authority, while accountable for its activities, has a degree of independence not shared by departments and its annual reports will thus have a greater freedom of expression and comment. The FRDC's reporting is, accordingly, appropriate to its legislative basis, functions and size.

TABLE 7: *PRIMARY INDUSTRIES RESEARCH AND DEVELOPMENT ACT 1989* (PIRD ACT)

Section	Title	Comply	Page
Section 10	R&D corporation is a body corporate etc.	Yes	186–187
Section 11	Functions	Yes	187
Section 12	Powers	Yes	187
Section 19	R&D plans	Yes	14
Section 20	Approval of R&D plans	Yes	14, 16
Section 21	Variation of R&D plans	Yes	14, 127
Section 24	Consultation	Yes	17, 24–27, 33, 98–99
Section 25	Annual operational plans	Yes	17–19
Section 27	Compliance with R&D plans and annual operational plans	Yes	113
Section 28	Annual report	Yes	All
Section 29	Accountability to representative organisations	Yes	25–26, 115
Section 33	Expenditure of money of R&D corporations	Yes	iv–v, 130–131, 133–181
	Spending must be in accordance with funding agreement	n/a	—
Section 33A	R&D money must not be spent on marketing	Yes	98, 133–181
Section 34	Commonwealth to be paid levy expenses from R&D corporation	Yes	133–181
Section 35	Commonwealth to be reimbursed for refunds of levy	Yes	133–181
Section 40	Separate accounting records	n/a	—
Section 47	Times and places of meetings	Yes	125
Section 53	Minutes	Yes	127
Section 76	Duties	Yes	121, 126
Section 87	Employees	Yes	21–22, 122–125
Section 143	Minister may give directions	Yes	115

TABLE 8: *PUBLIC GOVERNANCE, PERFORMANCE AND ACCOUNTABILITY ACT 2013* (PGPA ACT)

Section	Title	Comply	Page
Section 15	Duty to govern the Commonwealth entity	Yes	121–127, 186–187
Section 16	Duty to establish and maintain systems relating to risk and control	Yes	113
Section 17	Duty to encourage cooperation with others	Yes	17, 24–27, 33, 98–99
Section 18	Duty in relation to requirements imposed on others	Yes	113
Section 19	Duty to keep responsible minister and finance minister informed	Yes	127
Section 22	Application of government policy—Corporate Commonwealth entities	Yes	115, 202–204
Section 25	Duty of care and diligence	Yes	22, 121–127
Section 26	Duty to act in honesty, good faith and for proper purpose	Yes	22, 121–127
Section 27	Duty in relation to use of position	Yes	22, 121–127
Section 29	Duty to disclose interests	Yes	121–127, 167–169
Section 30	Termination—contravening general duties of officials	n/a	—
Section 35	Corporate plan for Commonwealth entities	n/a	—
Section 36	Budget estimates for Commonwealth entities	Yes	19, 133–181
Section 37	Records about performance of Commonwealth entities	Yes	All
Section 38	Measuring and assessing performance of Commonwealth entities	Yes	iv–v, 7–16, 38–39, 51–52, 64–65, 75–76, 84–85, 133–181
Section 39	Annual performance statements for Commonwealth entities	Yes	iv–v, 7–16, 38–39, 51–52, 64–65, 75–76, 84–85, 133–181
Section 40	Audit of annual performance statements for Commonwealth entities	Yes	130–131
Section 41	Accounts and records for Commonwealth entities	Yes	133–181
Section 42	Annual financial statements for Commonwealth entities	Yes	133–181
Section 44	Audit of subsidiary's financial statements	n/a	—
Section 45	Audit committee for Commonwealth entities	Yes	133–181
Section 46	Annual report for Commonwealth entities	Yes	All
Section 51	Making amounts appropriated available to Commonwealth entities	n/a	—
Section 55	Banking or dealing with relevant money	n/a	—
Section 59	Investment by corporate Commonwealth entities	Yes	133–181
Section 86	Subsidiaries of corporate Commonwealth entities	n/a	—
Section 105B	Instruments relating to procurement	n/a	—
Rule 10	Preventing, detecting and dealing with fraud	Yes	113, 127
Rule 13	Officials who are the accountable authority	n/a	—
Rule 14	Accountable authority officials—how and when to disclose interests	Yes	127

TABLE 8: CONTINUED

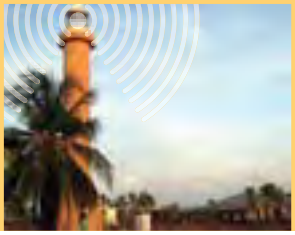
Section	Title	Comply	Page
Rule 15	Accountable authority officials—consequences of having interests	Yes	127, 167–169
Rule 16	Officials who are not the accountable authority or a member of the accountable authority	Yes	22, 121–127
Rule 16A	Officials appointed under a law—how and when to disclose interests	n/a	—
Rule 16B	Officials appointed under a law—consequences of having interest	n/a	—
Rule 17	Audit committee for Commonwealth entities	Yes	130–131
Rule 17A	Commonwealth entities ceasing to exist or functions transferred	n/a	—
Rule 18	Approving commitments of relevant money	Yes	112–115, 133–181
Rule 19	Banking of bankable money received by officials	Yes	133–181
Rule 20	Otherwise dealing with bankable money received by officials	Yes	133–181
Rule 21	Dealing with unbankable money received by officials	Yes	133–181
Rule 21A	Borrowing by corporate Commonwealth entities	Yes	133–181
Rule 22A	Investment by corporate Commonwealth entities	Yes	133–181
Rule 23	Insurance obtained by corporate Commonwealth entities	Yes	127
Rule 26	Minister to inform Parliament of certain events	Yes	127

TABLE 9: GOVERNMENT POLICY AND ASSOCIATED REPORTING REQUIREMENTS

Section	Compliant	Page
Australian Government Cost Recovery Policy	n/a	—
Australian Government Foreign Exchange Risk Management Guidelines	Yes	115
Australian Government priorities • Rural Research Priorities • Strategic Research Priorities		33–35, 191
Australian Government Commonwealth Procurement Rules	Yes	114
Australian Government Commonwealth Property Management Framework	Yes	116
Australian Government Protective Security Policy Framework (PSPF)	Yes	116
Australian Government Public Sector Workplace Bargaining Policy	Yes	127
Comcover Risk Benchmarking Survey	Yes	113
Commonwealth Disability Discrimination Act 1992 (National Disability Strategy 2010–2020)		22
Commonwealth Fraud Framework 2014	Yes	173
Environment Protection and Biodiversity Conservation Act 1999 (Section 16A)		38
Freedom of Information Act 1982, quarterly and annual lodgements	Yes	192–193
National Code of Practice for the Construction Industry and the Commonwealth's Implementation Guidelines	Yes	115
OLSC [Office of Legal Services] Legal Expenditure annual return	Yes	115
Work Health and Safety Act 2011		116–117

Australia wide. Cape Leeuwin Lighthouse, Western Australia.
Opposite page Cape Don Light, Northern Territory.

INDEX: Alphabetical



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PUBLICATIONS
AND OTHER INFORMATION

The following information is available from the FRDC	Printed	Website
The RD&E plan (Knowledge for fishing and aquaculture into the future: The FRDC's research, development and extension plan 2015–20), which provides comprehensive information on the FRDC; its business environment; the outlook for the fishing industry and the natural resources on which it depends; and the way in which the FRDC plans, invests in and manages fisheries R&D.	Yes	Yes
This and the previous annual report.	Yes	Yes
R&D plans for Commonwealth, states, Northern Territory, regions and industry sectors.	Yes	Yes
FISH (published in March, June, September and December, and on other occasions for special themes), which provides information on FRDC activities, summarises final reports on completed R&D projects released during the previous quarter, and lists projects that have been newly funded.	Yes	Yes
Information on completed projects (final reports and other related products).	Yes (see note 1)	Yes
Non-technical summaries of all final reports of FRDC projects.		Yes
Hyperlinks to other websites containing full final reports and fisheries R&D strategies, and to other important websites.		Yes
R&D funding application details.		Yes
Coming events of significance for the industry.		Yes
Research databases.		Yes

Note 1: Information on completed projects (final reports and other related products) are also available from:

- the National Library of Australia, Parkes ACT 2600
- the Librarian, CSIRO Marine Research, GPO Box 1538, Hobart Tasmania 7001
- state libraries and research institutions that the researcher considers appropriate.

frdc.com.au

The FRDC's website (www.frdc.com.au) provides easy access to information and publications, including the items on this page.

… and FRDC is on Facebook http://facebook.com/FRDCAustralia

ABOUT THIS REPORT

This report describes the extent to which the FRDC implemented its approved annual operational plan during the previous financial year. It meets the requirements for reporting legislated by the Australian Government and informs the FRDC's other stakeholders—especially those in the commercial, recreational and Indigenous sectors of the fishing industry and in the research and development community.

Fisheries Research and Development Corporation Annual Report, 2014–15

An electronic version is at the FRDC website—www.frdc.com.au

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The FRDC has heard from its stakeholders that over the next five years it will need to lead on key national issues; collaborating and partnering with stakeholders on issues relevant to them, to ensure it delivers knowledge that will result in sustainable economic, environmental and social benefits for Australia.

www.frdc.com.au

The FRDC is co-funded by our stakeholders, the Australian Government, and the fishing industry.

The FRDC invests strategically across all of Australia in research, development and extension activities that benefit all sectors of the fishing industry. Our goal is for Australia's fisheries to be sustainably managed.