Australian Government

Fisheries Research and Development Corporation

ANNUAL REPORT 2009–10

TO THE PARLIAMENT OF AUSTRALIA, THE AUSTRALIAN FISHING INDUSTRY AND OTHER FRDC STAKEHOLDERS

Highlights in 2009–10

- *Working Together: the National Fishing and Aquaculture Research, Development and Extension (RD&E) Strategy 2010* is approved by the Primary Industries Ministerial Council.
- FRDC's new RD&E Plan for 2010–2015 is approved by the Minister for Agriculture, Fisheries and Forestry.
- An economic evaluation of 18 randomly selected clusters of FRDC's R&D investment across three programs finds the average return to FRDC investment is 5.6 to 1.
- $6 million climate change program established with the Department of Climate Change and Energy Efficiency.
- Assessment of current fisheries management approaches identifies potential for $350 million in improvements.
- *Rickettsia* vaccine is developed as part of the FRDC Atlantic Salmon Subprogram.
- Domestication of tiger prawns (*Penaeus monodon*) leads to direct increase in production volume.
- New electronic weighing system is developed and implemented for individual transferable quotas (ITQ) in the managed South Australian Rocklobster Fishery.
- Mapping of Abalone Viral Ganglioneuritis leads to improved biosecurity, leading to better management and minimising impacts on fishery.
- A study confirms ITQ as the best management method for the Northern Prawn Fishery (NPF) — the first ITQ managed fishery in world.
- Implementation of T-90 nets improves environmental outcomes, reduces fuel use and increases the quality of catch in the Great Australian Bight fishery.
- FRDC funded Batwing boards place second in the World Wildlife Fund's international 'SmartGear' competition.
- New ground breaking bio-economic model leads to adoption of maximum economic yield results in the NPF.
- Blood fluke identified as the key factor in Southern Bluefin Tuna mortality, and the intermediate host identified as a polychaete in sediment.
- More than 50 people take part in FRDC's People Development program including leadership training, bursaries, scholarships).

Quick guide to the Annual Report

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

1. For an outline of the FRDC's investments and income, read pages iv–vi and the financial statements starting on page 101.
2. For an overview of operations during the past year, read 'The Directors' review of operations and future prospects' starting on page 1.

More detailed coverage is in these sections:

- The key strategic imperatives that drive the FRDC's activities are shown on pages xiii and 1–10.
- Outcomes by recent and current projects are in the R&D programs reporting starting on page 25 (Natural Resources Sustainability), page 41 (Industry Development) and page 57 (People Development).
- Performance reporting for the Management and Accountability program is described on pages 74–94.
- Financial contributions by industry and governments are listed on pages v and 123.
- Coverage of corporate governance information is in the section starting on pages 87–95.
- The financial statements start on page 101.

Front cover: The population of Australia's newest recreational-only fish species, the Longtail Tuna, can now being monitored because of input from the fishers themselves. Online reporting of their catch successes and failures will aid scientific research into the species. For more details see page 28.

Back cover: Australian Blue Mussels (a juvenile pictured) have added to the tonnage of aquaculture production being up by 8.5% over last financial year. See table 5, page vii.

Australian Government
Fisheries Research and Development Corporation

21 August 2010

Minister for Agriculture, Fisheries and Forestry
Parliament House
CANBERRA ACT 2600

Dear Minister,

On behalf of the directors of the Fisheries Research and Development Corporation, I have pleasure in presenting the Corporation's annual report for the year ended 30 June 2010. It is forwarded in accordance with section 9 of the *Commonwealth Authorities and Companies Act 1997* (Act). It has been prepared in accordance with the *Primary Industries and Energy Research and Development Act 1989*, the CAC Act, the *Environment Protection and Biodiversity Conservation Act 1999*, the Commonwealth Authorities and Companies (Report of Operations) Orders of 2005, and other Commonwealth legislation and guidelines.

The contents of the report are intended to enable an informed judgment of the Corporation's performance during the year ended 30 June 2010 by you, the Minister for Agriculture, Fisheries and Forestry and the Australian Parliament.

The report is also intended to inform the FRDC's other stakeholders — especially fishing industry levy payers and other financial contributors; other people in the commercial, recreational and indigenous sectors of the fishing industry; and members of the research and development community.

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

Yours faithfully,

Peter Neville
Chairman

Postal address: Locked Bag 222, Deakin West ACT 2600 Australia
Office location: Fisheries Research House, 25 Geils Court Deakin ACT
Telephone: 02 6285 0400 Web: http://www.frdc.com.au
Facsimile: 02 6285 4421 E-mail: frdc@frdc.com.au
Australian Business Number: 74 311 094 913

IT'S JUST A MATTER OF SCALE(S)

For 2008–09 the value of the Australian fishing industry was worth $2.2 billion.

Fisheries Research and Development Corporation

Annual Report 2009–10

2009–10 achievements through investment

Five years at a glance

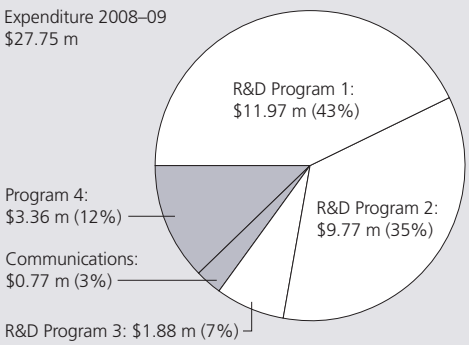
TABLE 1: FINANCIAL INDICATORS OF R&D INVESTMENT

Expenditure	2005–06	2006–07	2007–08	2008–09	2009–10	Change	Direction
	$m	$m	$m	$m	$m	%	– or +
Total expenditure	26.95	24.22	21.09	27.75	28.93	4.3	+
Total of R&D projects *	23.99	20.67	17.35*	23.62	24.45	3.5	+
R&D Program 1 (Natural Resources Sustainability)	12.11	11.07	8.70	11.97	13.75	14.8	+
R&D Program 2 (Industry Development)	10.91	8.52	7.55	9.77	8.68	11.7	–
R&D Program 3 (People Development)	0.97	1.08	1.10	1.88	2.02	7.4	+
Communications and extension	0.67	0.83	0.74	0.77	0.80	3.9	+
Program 4 (Management and Accountability)	2.29	2.72	3.00	3.36	3.67	9.2	+

Figures in this table have been rounded, hence totals may not agree with component figures. For exact figures see the financial statements beginning on page 101.

* In 2007–08 the Board approved projects containing milestones valued at over $33.50 million; however project slippage was such that actual expenditure in the year only reached $17.35 million.

	2005–06	2006–07	2007–08	2008–09	2009–10	Direction
Number of approved new projects	69	53	127	135	128	Down
Total number of active projects under management	433	399	430	436	384	Down
Number of final reports completed	88	67	79	126	151	Up



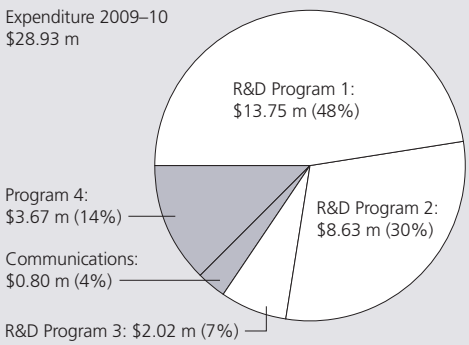


TABLE 2: INDUSTRY CONTRIBUTIONS TO FRDC AS A PERCENTAGE OF MATCHABLE GOVERNMENT CONTRIBUTIONS

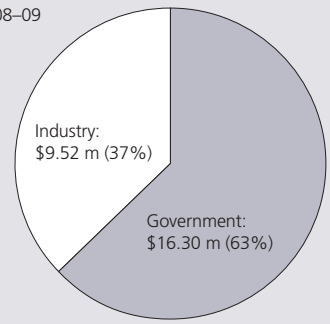
	2005–06	2006–07	2007–08	2008–09	2009–10
Commonwealth	117	120	195	322	202
New South Wales	106	122	134	74	119
Northern Territory	105	197	476	517	439
Queensland	99	100	94	90	99
South Australia	165	183	145	199	139
Tasmania	135	109	105	104	98
Victoria	96	131	108	110	205
Western Australia	136	116	89	164	110
Total all fisheries	**128**	**129**	**130**	**169**	**138**

TABLE 3: INCOME TO THE FRDC

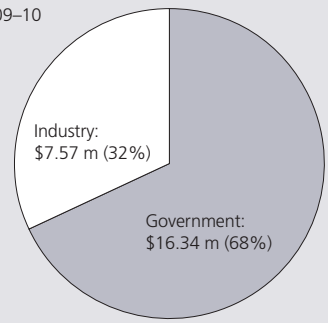
	2005–06	2006–07	2007–08	2008–09	2009–10
	$m	$m	$m	$m	$m
Industry contributions	6.97	6.90	7.47	9.52	7.57
Maximum matchable (government) contribution	5.41	5.35	5.45	5.50	5.50
Actual government matched [1]	5.20	5.29	5.38	5.30	5.36
Government unmatched [2]	10.82	10.69	10.90	11.00	11.00
Total government contributions	16.02	15.98	16.28	16.30	16.34
Project funds from other parties [3]	3.72	2.95	2.11	2.41	5.91

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 146 (including when industry contributions exceed 0.25% of average gross value of production (GVP)).
2. 'Government unmatched' is an Australian Government contribution set at 0.50% of average GVP, in accordance with the criteria detailed on page 146.
3. Included in 2009–10 project funds from other parties is $4.9 million from Australian Government to fund the following:
   - ¬ Game and shark fishing research
   - ¬ Recreational fishing industry development strategy
   - ¬ National Climate Change Adaption Research Plan

Contributions 2008–09
$25.82 m



Contributions 2009–10
$23.91 m



Summary of industry contributions

TABLE 4: INDUSTRY CONTRIBUTIONS, MAXIMUM MATCHABLE CONTRIBUTIONS BY THE AUSTRALIAN GOVERNMENT AND RETURNS ON INVESTMENT, 2009–10

Fisheries [see note 1]	A	B	C	D	E	F
	Maximum matchable contribution (0.25% of AGVP) ($) [see note 2]	Actual industry contribution 2009–10 ($) [see note 3]	B÷A as per cent	Distribution of FRDC R&D investments 2009–10 ($) [see note 4]	Return on contribution (D : B) [see note 5]	
					2009–10	5 years
Commonwealth total [6]	733,645	1,432,065	195	4,700,485	3.28	2.55
South East Trawl	131,722	577,716	439			
Bass Strait Scallop	9,729	34,557	355			
New South Wales total	344,088	383,124	111	1,548,995	4.04	4.04
NSW oyster aquaculture	96,229	90,719	94			
NSW other	135,667	284,905	210			
Northern Territory total	142,233	595,114	418	819,089	1.38	1.57
NT pearls and other aquaculture	58,117	416,735	717			
NT other	12,683	178,379	1406			
Queensland total	758,373	715,070	94	2,474,754	3.46	3.47
QLD prawn aquaculture [7]	115,504	144,155	125			
QLD other	248,176	494,778	199			
South Australia total	1,030,960	1,437,690	139	5,187,628	3.61	2.86
SA Pilchards	43,662	42,399	97			
SA Southern Rocklobster [6]	244,261	404,651	166			
SA other	47,644	157,778	331			
Tasmania total	1,294,345	1,247,301	96	3,197,430	2.56	2.73
TAS salmon aquaculture [6]	742,035	608,327	82			
TAS Southern Rocklobster [6]	170,315	248,822	146			
TAS other	61,995	93,198	150			
Victoria total	182,188	421,336	231	1,311,644	3.11	3.81
VIC Southern Rocklobster [6]	36,603	104,928	287			
VIC wild abalone	92,059	191,736	208			
VIC other	3,603	37,108	1030			
Western Australia total	1,001,358	1,212,658	121	5,089,867	4.20	3.09
Prawns wild harvest	69,541	168,360	242			
Western Rocklobster	546,718	35,720	7			

NOTES FOR TABLE 4 (INDUSTRY CONTRIBUTIONS)

[1] Individual fisheries are included just as an example for where there is an Australian Government levy or an Industry Partnership Agreement. As such not all contributions are shown and hence total may not agree with component figures.

[2] 'Maximum matchable contribution' is the maximum amount to which the Australian Government will match industry contributions in accordance with the criteria detailed on page 146.

[3] The industry contribution figures are accrual based.

[4] Distribution of FRDC R&D investments is based on the estimated flow of R&D benefits to the respective fisheries.

[5] Ratios in column F are derived from the distribution of FRDC investments (column D) for 2009–10 and the previous four years. The figures for these five years are relevant to the 1995 Ministerial direction, summarised on page 88, concerning spending of industry contributions.

[6] There are timing issues in some jurisdictions:
- matching may not occur in the year in which the invoice is raised because:
  - jurisdictions ask for invoices late in the financial year
  - matching is triggered by cash received
  - Department of Agriculture, Fisheries and Forestry (DAFF) closes its processing prior to financial year end.

[7] All Australian Prawn Farmers Association contributions are currently attributed to Queensland because a break-down by states is not available from the Levies Revenue Service of DAFF.

TABLE 5: FISHING INDUSTRY RESULTS 2009–10*

Australian Fisheries Statistics*	2004–05	2005–06	2006–07	2007–08	2008–09	Change
The wild catch sector caught less but earned more this year	$1.50 b for 236,000 t	$1.42 b for 194,527 t	$1.45 b for 188,488 t	$1.38 b for 181,601 t	$1.4 b for 173,142 t	$: +1.0% t: (–5.0%)
The aquaculture sector produced more but earned less	$634 m for 48,014 t	$748 m for 54,569 t	$806 m for 60,142 t	$870 m for 64,137 t	$861 m for 69,572 t	$: (–1.0%) t: +8.5%
Overall production was less but the value was the same	$2.09 b for 279,099 t	$2.16 b for 249,096 t	$2.21 b for 248,481 t	$2.22 b for 240,517 t	$2.22 b for 237,697 t	$: 0.0% t: (–1.0%)

* The figures quoted from the *Australian Fisheries Statistics* are for 2008–09, and are from the latest edition that can be downloaded from the FRDC website — www.frdc.com.au

The fishing industry in which FRDC operates

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

The fishing industry is Australia's sixth most valuable food-based primary industry with a landed value of more than $2.2 billion a year. In addition, more than 3.4 million Australians recreationally fish each year spending an estimated additional $2.5 billion. For indigenous communities the fishing industry not only provides a significant role in culture and subsistence but also an avenue for income.

Demand for seafood is rising in Australia because of increasing affluence and increasing awareness of seafood's prominent role in a healthy diet. In Asian markets, consumption is also increasing with the growth of the middle class. World supply to affluent consumers will continue to be limited, giving rise to higher prices.

Currently Australia's commercial seafood production only provides about 35 per cent of domestic demand. As a result the commercial sector is now making a major re-orientation towards better serving the growing Australian market. Increasingly, value chains will encompass both domestic and imported product. Other factors, such as further improvements in fisheries management and better utilisation of catch, will also be important in meeting domestic demand. But it is not only seafood for consumption that Australia produces. Pearls are a high value consumer item that is produced at the highest level of quality through leading edge technology and environmental credentials, making it one of Australia's most valuable and sustainable fisheries.

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

Top five by volume		Top five, by value	
Australian Sardines	31,500 tonnes	Rocklobster	$404 million
Salmonids	29,700 tonnes	Salmonids	$323 million
Prawns	23,900 tonnes	Prawns	$289 million
Oysters	14,100 tonnes	Abalone	$188 million
Tuna	13,700 tonnes	Tuna	$187 million
Top five exports, by value		**Top five export destinations, by value**	
Rocklobster	$462 million	Hong Kong, China	$726 million
Pearls	$366 million	Japan	$367 million
Abalone	$208 million	United States	$87 million
Tuna (whole)	$175 million	Chinese Taipei	$54 million
Prawns	$82 million	Singapore	$45 million
Top five imports, by value		**Top five import sources, by value**	
Canned fish	$331 million	Thailand	$370 million
Pearls	$321 million	New Zealand	$218 million
Frozen fish fillets	$239 million	Vietnam	$168 million
Canned crustaceans and molluscs	$185 million	China	$156 million
Fresh, chilled or frozen prawns	$135 million	United States	$68 million

The figures quoted from the Australian Fisheries Statistics 2009, and are from the latest edition that can be downloaded from the FRDC website — www.frdc.com.au

Contents


SHIPTON

About the FRDC

The Fisheries Research and Development Corporation (FRDC) is a co-funded partnership between its two stakeholders, the Australian Government and the fishing industry. It was formed as a statutory corporation on 2 July 1991, under the provisions of the *Primary Industries and Energy Research and Development Act 1989* (the PIERD Act) and is responsible to the Minister for Agriculture, Fisheries and Forestry.

Its primary role is to invest in fisheries research, development and extension (RD&E) activities throughout Australia.

The FRDC's strategic investments in RD&E activities benefit the three sectors of the fishing industry: commercial (wild catch and aquaculture), recreational and indigenous. The FRDC collaborates with its key stakeholders to coordinate, and direct its investment to best address RD&E priorities. In addition the FRDC monitors and evaluates the adoption of RD&E to inform future decisions.

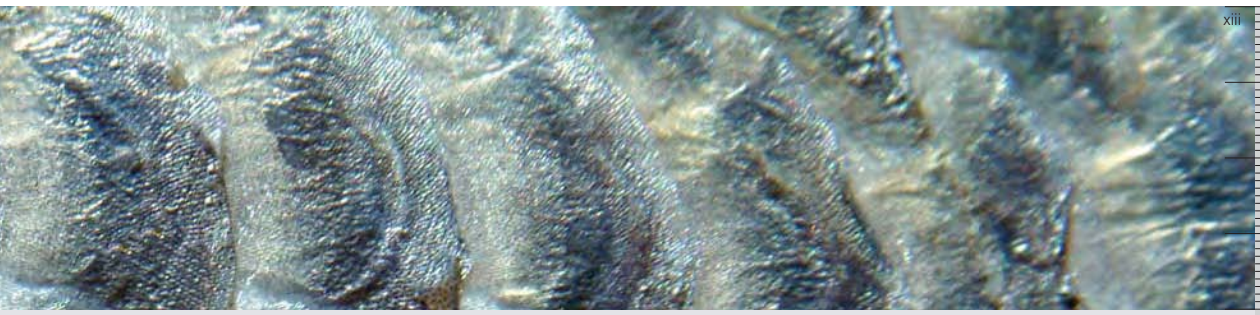
The 'fishing industry' is defined in the PIERD Act such that it includes any industry or activity carried out in or from Australia concerned with:

- taking; or
- culturing; or
- processing; or
- preserving; or
- storing; or
- transporting; or
- marketing; or
- selling;

of fish or fish products.

The FRDC therefore invests in RD&E undertaken along the whole supply chain of the industry 'from capture to cuisine'. This applies equally to the recreational sector where it would be from 'catch to release' encompassing the angling experience. The FRDC provides research administration and services using a value adding model. Unlike a simple granting model, this involves significant management and commissioning of RD&E through a variety of flexible approaches.

These include open call applications; formal industry partnership agreements with industry sectors; subprograms and coordination programs tailored to industry sectors or activities; short-term tactical research investment; and specifically targeted commissioned R&D.

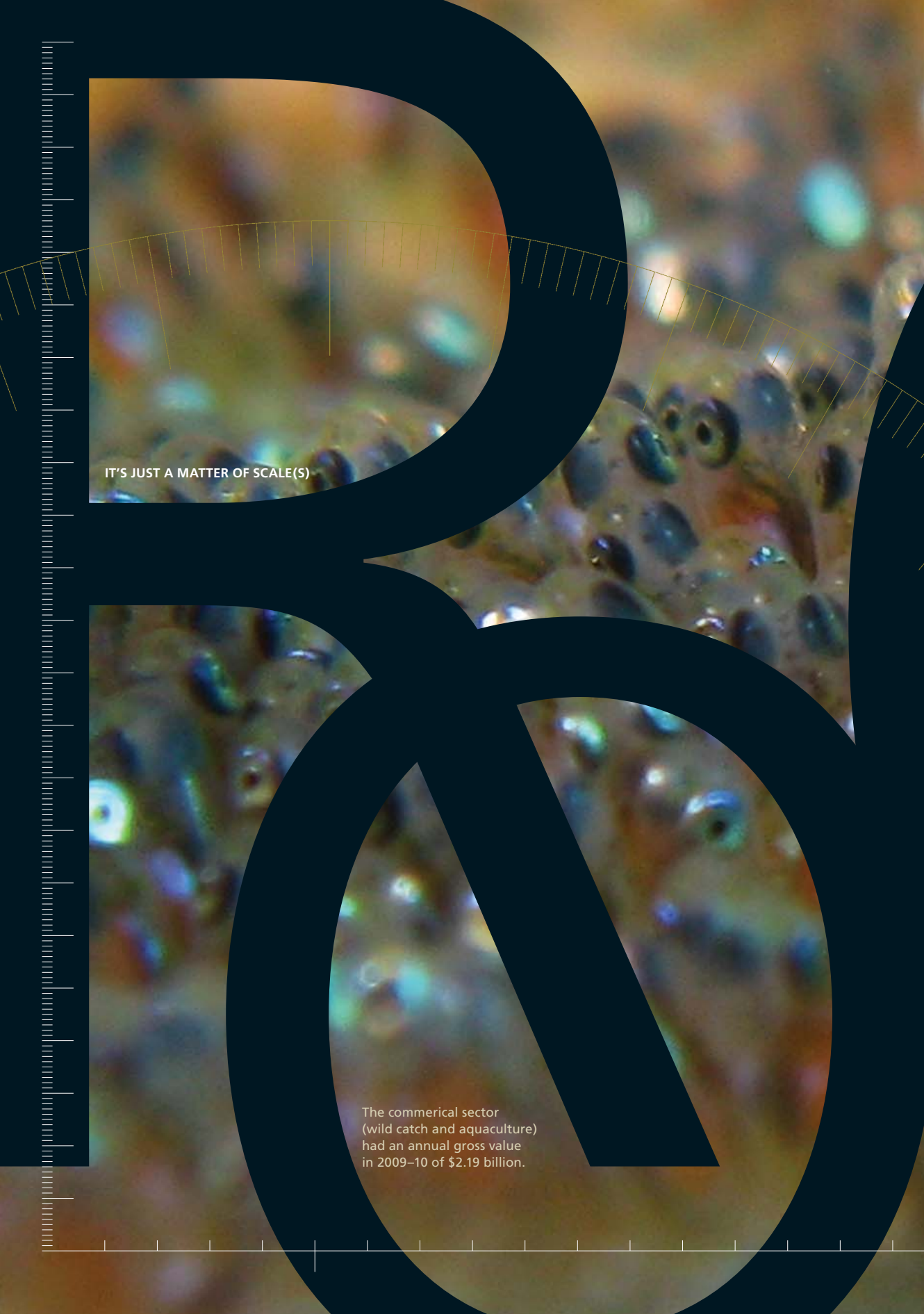


The five strategic research and development challenges for the FRDC

The FRDC has aligned its planning, management and reporting of R&D program activities to the objects of the PIERD Act — see Appendix B. This alignment is reflected in the FRDC's four R&D programs with the focus of each program further described under five strategic challenges specified in the Corporation's R&D plan.

The R&D programs and associated strategic challenges are as follows.

Program	Strategic challenges
1. Natural Resources Sustainability	1. Natural resources sustainability — to maintain and improve the management and use of aquatic natural resources to ensure their sustainability.
	2. Resource access and resource allocation — to optimise resource access, resource allocation and opportunities for each sector of the fishing industry, within a rights-based framework.
2. Industry Development	3. Responses to demand; profitability — the challenge is to respond to, and take advantage of, increased demand for seafood and for recreational and customary fishing experiences; and to enhance the profitability of the fishing industry.
3. People Development	4. People development — the challenge is to develop people who will help the fishing industry to meet its future needs.
	5. Community and consumer support — increase community and consumer support for the benefits of the three sectors of the fishing industry.
4. Management and Accountability	

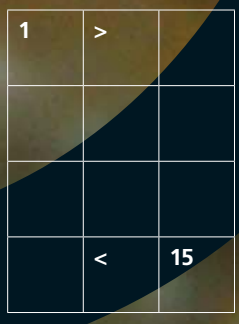


IT'S JUST A MATTER OF SCALE(S)

The commerical sector (wild catch and aquaculture) had an annual gross value in 2009–10 of $2.19 billion.

Report of Operations

Part 1: The Directors' review of operations and future prospects



The Corporation's operating environment

Australian commercial wild catch and aquaculture industries had a mixed performance in 2009–10. Domestic demand for seafood continued to grow, in particular those that supplied finfish. The farmed Atlantic Salmon industry grew strongly over the year through increased production and domestic demand for its product. The pearling sector continued to face a significantly weak export market for Australia's premium pearl products. A continuing decline in recruitment for Western Rocklobster resulted in a further reduction in that fishery's total allowable catch to 5500 tonnes from an average catch of 9000 tonnes. Strong demand for rocklobster in China allowed both the Western and Southern Rocklobster sectors to increase their price offsetting the reduced catch.

China has become Australia's most important export market for seafood and is expected to continue to grow in importance. Nevertheless, Australia has now a net negative balance of trade for seafood with exports now worth less in value than imports. This is resulting in a fundamental shift in supply chain focus, in particular for finfish and prawns, towards the domestic market. The expected continuing strong Australian dollar will support this trend in the medium outlook. The decline of Japan as an export destination and the continuing difficulties in accessing European markets has meant that the industry has a high reliance on China for its future growth. Some sectors, like Southern Rocklobster, have invested in RD&E to develop market opportunities in Northern America and Europe to provide diversification of markets. The Seafood Cooperative Research Centre, in which FRDC is the largest single investor, has developed an extensive program to improve supply chain efficiencies and market opportunities.

Australian farmed prawns had an excellent production season in 2009–10. A significant factor in this success was the implementation of the domestication program that FRDC and its research and industry partners have invested in. One farm reported an average of 17.5 tonnes per hectare which, compared to the industry average of 8 tonnes per hectare five years ago is a significant achievement. Productivity improvements in prawn aquaculture have allowed the sector to compete with imported prawn products on the domestic market. Aquaculture has an advantage over the wild catch sector in productivity improvements as the latter is often faced with increased regulation if catch efficiency increases in input controlled fisheries.

The implementation of marine protected areas and changes to the access to key species, such as Longtail Tuna, have been a major focus for the recreational sector in 2009–10. The introduction of recreational fishing licences expanded in 2009–10 with Western Australia introducing a new boat-based licence. Funds collected through recreational licences are playing a growing importance in the development of recreational fishing in New South Wales, Victoria and Western Australia. These funds are being used to improve fishing sustainability, quality and access. FRDC partnered with these funding streams in several important projects during 2009–10.

Indigenous fisheries continued the trend to have the High Court recognise their customary rights. The Blue Mud Bay decision and the recent case for Torres Strait Islanders (Torres Strait Regional Sea Claim) offers increasing opportunities for both cultural and commercial value for indigenous fishers.

The role of the Board

The Minister for Agriculture, Fisheries and Forestry, the Hon. Tony Burke MP appointed five new directors and reappointed two from the previous Board in September 2009. (The report of the Board Selection Commitee is contained in FRDC's Annual Report 2008–09.) A high priority for the Board has been to ensure that the issues identified by the Minister and the industry are addressed through targeted RD&E investment. This has resulted in a strong emphasis on research that addresses productivity, climate change and food security issues.

FRDC has partnered with the Department of Climate Change and Energy Efficiency (DCCEE) to co-invest in adaptation RD&E for marine biodiversity, resources and fisheries. Jointly the two agencies have invested $5.5 million over three years in climate change adaptation research. FRDC has entered into an agreement to manage this investment with DCCEE.

The Board has been very supportive of the developing role of the Council of Rural Research and Development Corporations (CRRDC). The CRRDC is the peak forum for the rural research and development corporations (RDCs), facilitating coordination of research and strategic directions for evaluating the collective impact of the RDCs and for developing collaboration on major projects of national significance. During 2009–10 the focus of FRDC's participation in the CRRDC has been on:

- strengthening the role of the CRRDC across the rural RDCs
- implementing the CRRDC evaluation process
- implementing the Primary Industries Standing Committee (PISC) RD&E Framework
- participating in activities to develop shared services between RDCs
- developing options for improved cross-sectoral investment processes between RDCs
- contributing to the joint CRRDC submission to the Productivity Commission inquiry into the RDCs.

The Board has provided input into the submission process established by the CRRDC chaired by Dr Kate Grenot. This council has taken an important role in establishing a National Strategic Rural R&D Investment Plan, the development of a performance measurement and reporting framework and enhancing cross-sectoral research collaboration.

The Board welcomed the Minister's announcement in December 2009 of a Productivity Commission inquiry into the RDC model as an opportunity to demonstrate the value of the existing model — the collaborative partnership between government and industry — and develop options for improvements that would ensure the ongoing relevance of the model for all stakeholders. The PIERD Act was enacted in 1989, some 21 years ago. Stakeholders needs and expectations have changed since then and it is important that PIERD Act reflects their needs, in particular FRDC's largest funding contributor the Commonwealth Government. The Board has taken a strong leadership role among the RDCs pressing for change to the model and how the model is implemented.

Working Together: the National Fishing and Aquaculture RD&E Strategy 2010

Over the last 12 months the Board has provided leadership and oversight in the development of the FRDC's new RD&E Plan 2010–2015 and the National Fishing and Aquaculture RD&E Strategy.

On 23 April 2010, the Primary Industries Ministerial Council (PIMC) approved a national strategy for fishing and aquaculture research, development and extension, which establishes the future direction to improve the focus, efficiency and effectiveness of RD&E to support Australia's fishing and aquaculture industry.

The strategy was developed at the request of the PIMC, and is one component of the National Primary Industries Research, Development and Extension Framework. A major driver for the Framework is that RD&E resources are finite and there is a need to rationalise delivery to make RD&E more efficient and cost effective, while at the same time ensuring that gaps in capability are addressed to maximise strategic areas of need.

The Framework spans 14 primary industry sectors and seven cross-industry sectors. It recognises that basic and strategic research can be provided from a distance, while adaptive development can be achieved regionally; and extension and adoption of research outcomes most often have a local focus. For jurisdictions with significant capability in a particular R&D field or host major industry, it may be determined that they will take a major role and specialise in that field of R&D. For another jurisdiction with lesser capability but with strategic interest, it may be determined that it will take a supporting role. Jurisdictions without capability in a particular R&D field, but still requiring R&D in that field will link to jurisdictions with major capability and focus on extension and adoption.

Development of the strategy was led by the FRDC, and a working group including the Victorian Department of Primary Industries, the Department of Primary Industries and Resources South Australia, and the Tasmanian Department of Primary Industries, Parks, Water and Environment.

In addition to wide consultation with stakeholders, two comprehensive studies — *Overview of the Australian Fishing and Aquaculture Industry: Present and future*, and *RD&E capability audit and assessment for the Australian Fishing and Aquaculture Industry* — supported the development of the strategy.

Outcomes of the development of the Framework have been:

- ¬ a new national priorities forum that brings together government and industry representatives to lead the implementation of the strategy, including prioritisation of RD&E investment
- ¬ development within the strategy of a national strategic RD&E plan with defined outcomes, research themes and research topics
- ¬ a regional and national approach to RD&E planning, investment and delivery that encourages collaborative arrangements consistent with habitat, species distributions, and aquaculture activity
- ¬ recognition that extension needs to be included when considering research and development investment, and integrated within the national system
- ¬ determination of gaps in critical RD&E capability and strategies to close the gaps
- ¬ definition of key performance indicators which will measure achievement against the strategy's planned outcomes.

Importantly, the strategy provides a foundation for further improvement in the outcomes for stakeholders from their RD&E investment. The most important elements that require greater focus during the coming year are to address the identified gaps in capability, strategies to close those gaps and advance major-support-link arrangements within a regional and national approach.

Investing for tomorrow's fish: the FRDC's Research, Development and Extension Plan 2010–2015

Running in parallel to the development of the national strategy has been the development of the FRDC's new Research, Development and Extension Plan (RD&E Plan) for 2010–2015. The Minister for Agriculture, Fisheries and Forestry approved the plan on 13 July 2010.

The development of the RD&E Plan built on the large volume of consultation undertaken as part of the Framework and allowed FRDC to align both documents to stakeholder needs. To this end the RD&E Plan clearly articulates:

- The FRDC's research programs and themes reflecting the outcomes and strategic research themes of the National RD&E Strategic Framework, and providing direction for researchers on national priorities. A list of the programs and themes is outlined in the year ahead section on page 8.
- A significant increase in the focus on extension and adoption, with the development of a new extension and adoption program providing the focus to support end users bringing about positive change from R&D outputs.
- The FRDC's RD&E investment policy encouraging regional collaboration, and supporting areas of national specialisation established through nationally-agreed major-support-link arrangements.
- Commitment to provide support to establish the key structures that will deliver on the strategy, and in particular, provision of support for industry to fully participate in these structures.

Embracing a national strategy is a significant step for fishing and aquaculture. Structural and collaborative arrangements, driven by strong leadership, will continually improve on the benefits the strategy can deliver for our stakeholders. FRDC will continue to play a critical role in bringing about change to realise these benefits.

Thank you

Continued support from the Commonwealth Government and industry stakeholders across the three diverse sectors has been welcomed by the Board over the last 12 months. Government and industry have high regard for FRDC and this has been critical in ensuring high quality research outcomes. The Board thanks the FRDC's three representative organisations for their continued strong support. FRDC is dependent on the support of numerous 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 Cooperative Research Centre (Seafood CRC)
- Seafood Services Australia

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

The Board would welcome your feedback so please contact any of the FRDC directors and let them know your thoughts after reading this annual report.

Significant events following 30 June 2010

The Minister for Agriculture, Fisheries and Forestry approved the FRDC's RD&E Plan for 2010–2015 on 13 July 2010.

On 31 August 2010, Peter Neville completed his term as FRDC Chair. Over his three years as Chair, Peter has been proactive in driving forward key strategic issues. He chaired the FRDC co-management working group that developed the framework for implementing fisheries co-management. A framework that has since been implemented by the Australian Fisheries Management Authority (AFMA) and fisheries in Western Australia, Queensland and South Australia through a series of practical trials in train at present.

During Peter's tenure at FRDC some of the highlights achieved by the Board working with the staff have been:

- increasing the time that the Board spent considering strategic issues and reducing the time spent evaluating applications
- building closer relationships with fisheries management agencies — in particular the Australian Fisheries Management Forum
- developing the PISC National Fishing and Aquaculture RD&E Strategy
- developing FRDC's new RD&E Plan for 2010–2015
- implementing the Council of Rural RDCs evaluation framework into FRDC's business
- ensuring that FRDC's planning and reporting better reflects the government contribution
- championing co-management in Australia as a better way of engagement for fisheries management
- taking an active role on the Council of Rural RDCs to ensure better colouration.

Internally, a strategic plan for the future of the FRDC, as an organisation itself, has been implemented and is now part of ongoing business. This has led to changes and efficiencies in the operational arrangements of FRDC and how it conducts its business with its partners.

On 1 September 2010, the Hon. Harry Woods was appointed by the Minister for Agriculture, Fisheries and Forestry as the new FRDC Chair.

Annual operational plan budget 2010–11

REVENUE	$		$
Australian Government 0.5% AGVP	11,032,125		
Australian Government matching of industry contributions	5,516,063		
Total revenues from the Australian Government			**16,548,188**
Contributions revenue			
Australian Fisheries Management Authority	670,000		
Australian Capital Territory	20,000		
New South Wales	340,000		
Northern Territory	595,000		
Queensland	645,000		
South Australia	1,550,000		
Tasmania	1,300,000		
Victoria	265,000		
Western Australia	800,000		
Other project related income	1,600,000		
Total contributions revenue			**7,785,000**
Other revenue			
Interest	250,000		
Sales of goods and services	115,000		
Other income	5,000		
Total other revenue			**370,000**
TOTAL REVENUE			24,703,188
EXPENDITURE			
Projects expenditure			
Environments	8,120,109	*40% **	
Industries	7,105,095	*35% **	
Communities	1,015,014	*5% **	
People	2,030,027	*10% **	
Extension and adoption	2,030,027	*10% **	
Total programs			**20,300,272**
Made up of:			
Forecast payments against existing contracts	15,482,158		
Forecast payments against new contracts	4,818,114		
Communications			
Other goods and services expense			**920,000**
Management and accountability			
Employees			**1,835,186**
Suppliers			**960,000**
Depreciation and amortisation			**685,000**
Net write down of assets			**0**
Other expenses			
Total Programs support			**3,480,186**
TOTAL EXPENDITURE			24,700,458
NET RESULT FOR THE YEAR			2,729
Expected carryover of cash ($6.3 m) and net receivables ($3.7 m) from previous financial year			

* Target expenditure level

The year ahead, 2010–11

Innovation remains the key focus for the FRDC and the Corporation will strive to fund more projects that deliver gradual evolution in knowledge and adoption while also funding projects that are more revolutionary.

In 2010–11 the FRDC will start to implement its 2010–2015 RD&E Plan in consultation with key stakeholders. The new RD&E Plan aligns with the National Framework for RD&E and will help focus FRDC strategic research, development and extension investments in the highest priority areas to best meet stakeholder needs. Within the RD&E Plan FRDC's investment in 2010–11 will be broadly in the following five program areas.

Environment Program

- ¬ Biosecurity and aquatic animal health
- ¬ Habitat and ecosystem theme
- ¬ Climate change
- ¬ Ecologically sustainable development

Industry Program

- ¬ Governance and regulatory systems
- ¬ Resource access and allocation
- ¬ Production, growth and profitability
- ¬ Consumers, products and markets
- ¬ Value from aquatic resources

Communities Program

- ¬ Resilient and supportive communities

People Development Program

- ¬ Leadership development
- ¬ Workforce development
- ¬ Innovation skills

Extension and Adoption Program

- ¬ Extension and adoption

The FRDC will focus its investment further into the following areas.

Biosecurity and aquatic animal health — FRDC has a strong health program led by its Aquatic Animal Health Subprogram. Key areas of focus in 2010–11 will be continued work on addressing Atlantic Salmon resistance to amoebic gill disease, identifying the causative agent for Southern Bluefin Tuna six week mortality syndrome, characterisation of abalone herpes-like virus infections in abalone (Abalone Viral Ganglioneuritis), and the development of a number of polymerase chain reaction testing protocols, including for an unknown disease agent in pearl oysters. In addition to biosecurity research on developing improved diagnostic and pest detection, FRDC has a significant investment with the Department of Agriculture, Fisheries and Forestry (DAFF) on surveys of ornamental fish for pathogens of quarantine significance.

Climate change — FRDC has commenced a coordinated funding program to enhance the fishing industry's capacity to adapt, mitigate against, and take advantage of, further climate change. The program partners are the DCCEE, DAFF and participating state government agencies. This builds on the large body of research undertaken over the past decade looking at climate variability and its impact on the fishing industry. FRDC will continue to participate with the other rural RDCs in the collaborative research initiative Climate Change Research Strategy for Primary Industries (CCRSPI), to examine and respond to the positive and negative impacts of climate change on primary industries.

Community resilience and development — The recently established social science research coordination program will be undertaking a gap and needs analysis on social research that will assist fisheries managers achieve triple bottom line requirements. These needs will be prioritised for future investment.

Consumers and markets — Increasing consumer satisfaction, building markets and improving supply chains are critical to improving productivity. FRDC is partnering with Seafood Services Australia to address trade and market access issues in a number of international markets including China, India and the European Union.

Ecologically sustainable development (ESD) — This is now accepted as the foundation for natural resource management in Australia. A substantial amount of work is being done to develop the methods to measure and assess the performance of fisheries across the full range of ESD issues. FRDC in partnership with the Australian Fisheries Management Forum (AFMF) will develop a program to support research on harvest strategies that explicitly include environmental, economic and social indicators. FRDC will also look to further the work that has been already undertaken on ecosystem based fisheries management.

Extension and adoption — FRDC will develop an extension and adoption plan to facilitate the transfer of knowledge to its stakeholders. This will include the development of an extension network and a range of information resources for industry. It will also look to fund research to better target extension activities.

Governance and regulatory systems — To improve management outcomes and reduce costs, FRDC is trialling alternative co-management arrangements with three fisheries jurisdictions: Commonwealth, Queensland and Western Australia. Resource access and allocation and the delivery of performance indicators for spatial management will be completed. Work will continue on developing data collection techniques for recreational fishers and how this can be incorporated into management models for the future.

Habitat and ecosystem protection — By-catch and by-catch reduction will continue to be an area in which a range of activities is undertaken. Activities are underway to reduce the interaction and impacts between fishers and sea snakes, seals and threatened, endangered and protected species.

Maximising value from aquatic resources — Food security continues to be a strong focus for the FRDC. Investment will aim to optimise use of wild resources and build on increasing capacity in the aquaculture sector. Research in Western Australia will target under-utilised fish stocks and improved retail chains. Social and personal values including recreational and customary is also a focus here.

People development — Professional development awards and leadership programs will build leadership, professionalism and cross-sectoral understanding, and enhance opportunities for young people, Aboriginal and Torres Strait Islanders, and women to participate and reach their potential. Opportunities to develop and share knowledge and skills will be provided through visiting experts program, travel awards and conferences. Furthermore, FRDC is leading a change in culture on workforce training and will invest in workforce attraction and retention strategies, including industry and research connections with the education sector.

Productivity and profitability — FRDC and its industry partners have a considerable investment in the Seafood CRC (71 per cent of its funds). The Seafood CRC is targeting more efficient value chains, developing United States and China market programs for rocklobster, abalone and prawns. Adoption of the benchmarking research undertaken for the prawn, oyster, abalone and barramundi industries is planned as part of the Seafood CRC's technology transfer program. Through the Aquaculture Innovation Hub, Emerging Species Program and the Seafood CRC, new species, hatchery methods and husbandry practices are to be developed to increase production.

FRDC's people

Portfolio minister

The portfolio Minister for Agriculture, Fisheries and Forestry during the year was the Hon. Tony Burke MP.

Pictured below is Mr Burke (at right) with Andrew Ettingshausen (centre), host of the *Escape with ET* television series (see story on page 80) and Greg Joyes.

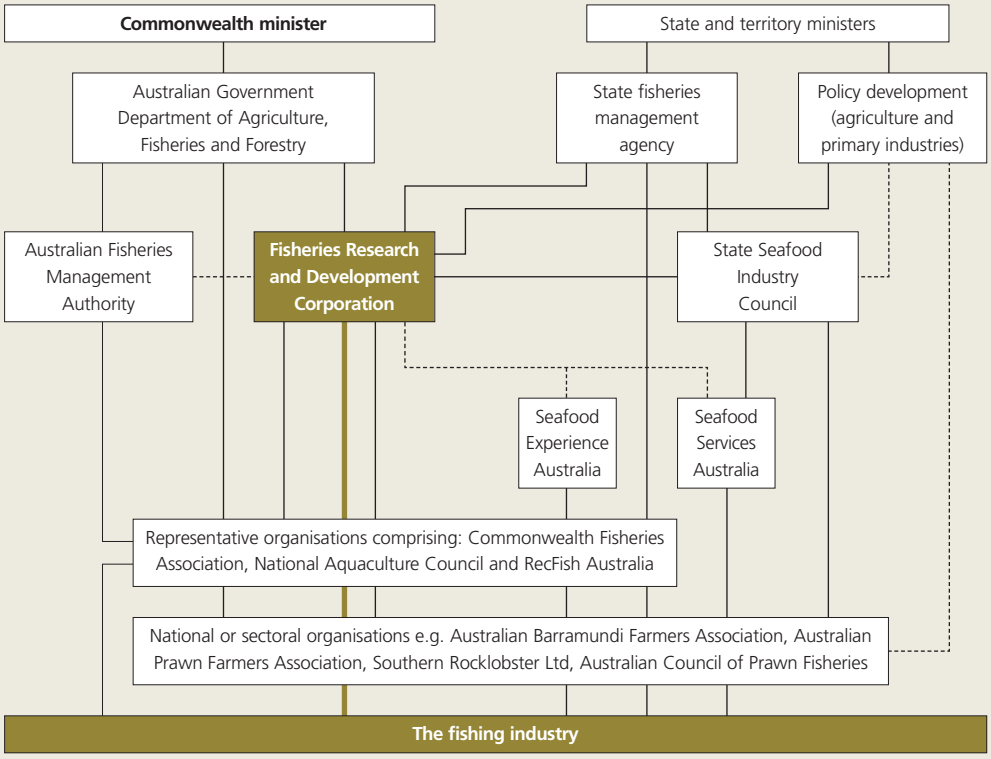
FRDC Board Members during the year

Mr Peter Neville	Chair
Mr Stuart Richey AM	Deputy Chair
Dr Patrick Hone	Executive Director
Ms Heather Brayford	Director
Ms Renata Brooks	Director
Dr Ray Johnson	Director
Mr Brett McCallum	Director
Dr Daryl McPhee	Director
Dr Paul McShane	Director
Mr Frank Prokop	Director
Dr Keith Sainsbury	Director
Mr Richard A. Stevens OAM	Director
Mr Richard N. Stevens	Director

The FRDC staff

Dr Patrick Hone	Executive Director
Mr John Wilson	Business Development Manager
Ms Cheryl Cole	Manager Corporate Services
Ms Tina Lin	Office Administrator
Mr Crispian Ashby	Programs Manager (pictured below)
Ms Annette Lyons	Projects Manager — Finance
Ms Kylie Giles	Projects Manager — Research
Dr Carolyn Stewardson	Projects Manager — Research
Mr Neil Garbutt	Projects Manager — People Development
Mr Peter Horvat	Communications Manager
Ms Julie Haldane	Communications Officer
Ms Jo-Anne Ruscoe	RD&E Strategic Planning

FIGURE 1: THE FRDC'S OPERATING CONTEXT



Strategic partnerships

In addressing the FRDC's five strategic challenges, strategic directions are established in association with its partners — government, industry stakeholders and research organisations.

The FRDC works with its partners to not only undertake program management in an effective manner, but also to disseminate the results and assist with their adoption and, when appropriate, commercialisation. Over the course of the year, the FRDC collaborated and worked with all government and research and development corporations on major issues.

Australian Fisheries Management Forum

The Australian Fisheries Management Forum comprises of the heads/CEOs of the Australian and state and territory government agencies responsible for the management of fisheries. The Forum discuss issues relating to fisheries management. FRDC worked closely with this group in developing the National Fishing and Aquaculture Strategy.

Rural research and development corporations

The FRDC is one of 15 rural research and development corporations (RDCs). As part of this group, considerable expertise exists from which to partner and leverage capacity. During the year FRDC partnered with the other RDCs on a number of activities. Most significant of these were climate change; evaluation of R&D and the development of a National Primary Industries Research, Development and Extension Framework. Not only will FRDC partner other RDCs on this project but it will also work more broadly with the Primary Industries Standing Committee participants (Commonwealth and state governments).

The FRDC attended meetings of the Council of Rural Research and Development Corporations' (CRRDC), as well as meetings of Executive Directors, Business Managers and Communications Managers. In conjunction with other RDCs, the FRDC will assist in coordinating sponsorship of initiatives such as Taste for Excellence (a chef, waiter and restaurateur competition) primary producer's tour. Additionally, FRDC will continue to provide advice and services in relation to project management and the FRDC project management software — OmniFish.

Sector industry bodies

The FRDC has continued to build partnerships with individual industry sectors. It currently invests in, and partners, entities such as Southern Rocklobster Ltd, Australian Southern Bluefin Tuna Industry Association, Tasmanian Salmonid Growers Association, and both the Prawn and Barramundi Farmers Associations. An overview of the sectors that have contributed more than the maximum matchable contribution is shown in Table 4: Industry contributions, maximum matchable contributions by the Australian Government and returns on investment, 2009–10.

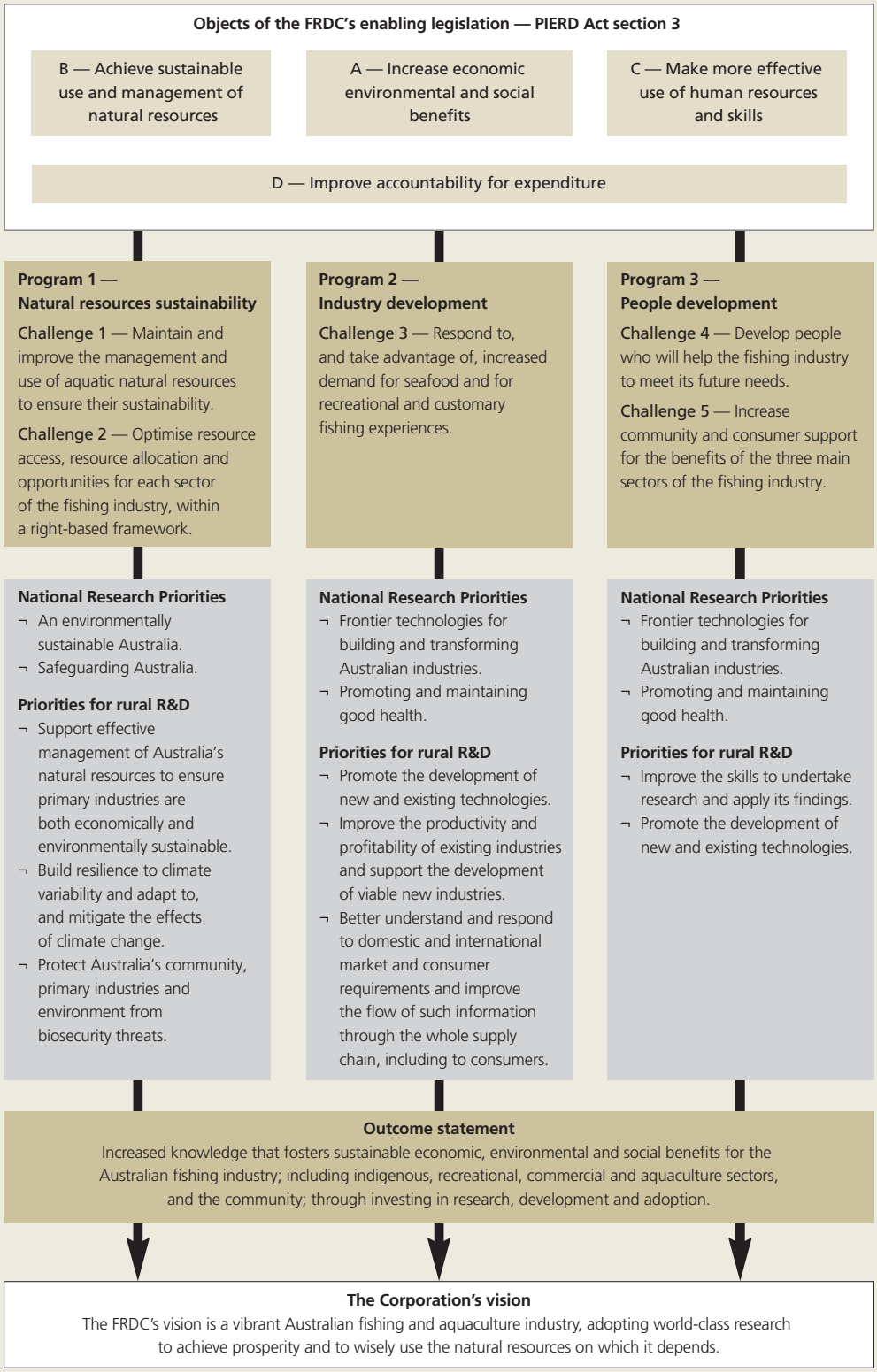
Seafood Services Australia

FRDC continues to work with and invest in Seafood Services Australia (SSA). At present, the key focus of this partnership is to develop industry's capacity and knowledge and to assist them to engage on key trade issues. SSA has been instrumental in delivering a number of industry based initiatives, extending the research and development activities of FRDC. See also a review of SSA on page 51.

Seafood Cooperative Research Centre

The FRDC has many partners in both the research funding and service provision areas, with one of our newest partners being the Seafood Cooperative Research Centre (Seafood CRC). The FRDC, as a core participant of the Seafood CRC, will invest over $24 million in cash and $1.4 million in-kind, over its seven year life. The mission of the Seafood CRC is to assist end users of its research to profitably deliver safe, high-quality, nutritious Australian seafood products to premium markets, domestically and overseas. Its research program aims to increase the profitability and value of the Australian seafood industry, increase access to premium markets and increase demand for Australian seafood. These priorities are aligned with the FRDC's R&D programs, and in particular Program 2: Industry Development. This partnership is one innovative way the FRDC extends its activities further along the value chain and enhances its focus on development.

FIGURE 2: FRDC'S FRAMEWORK FOR INTEGRATING LEGISLATIVE, GOVERNMENT AND INDUSTRY PRIORITIES



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.

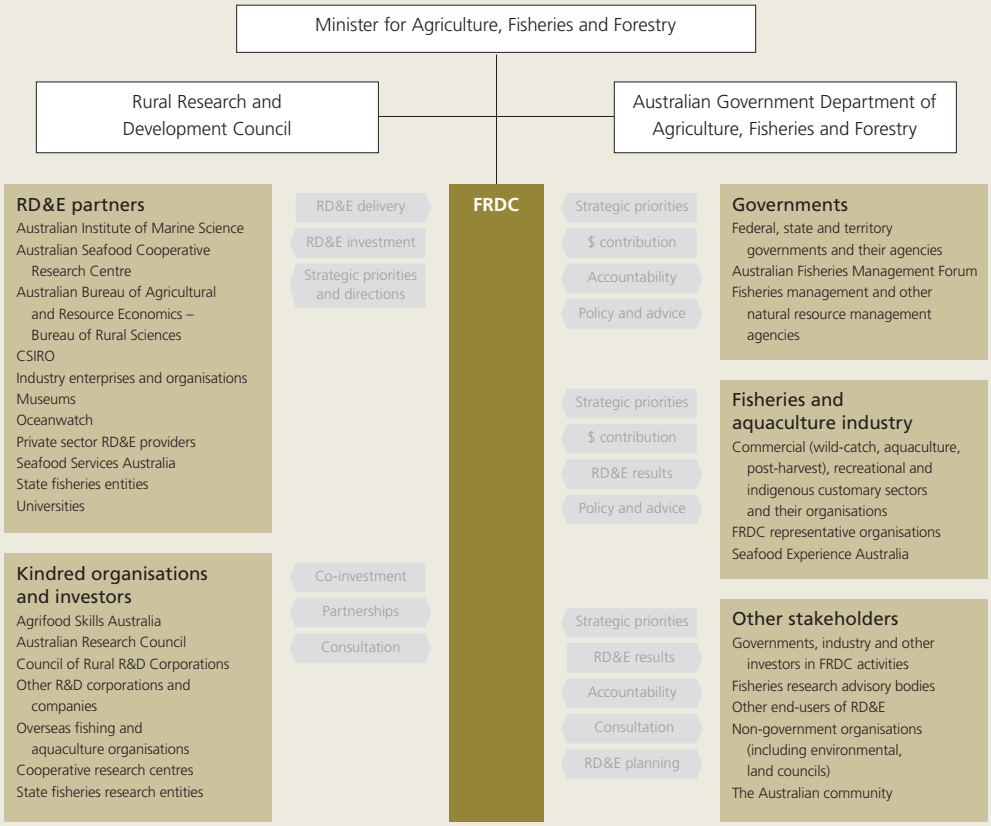
The Corporation's vision

The vision of the Fisheries Research and Development Corporation 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.

Stakeholders

Stakeholders in the FRDC are the Australian Government and the fishing industry. There are many other partners, collaborators, beneficiaries and interest groups who all influence the FRDC in its priority setting processes and assist in the conduct of its business and the adoption of its research and development activities. These arrangements are addressed in this report. In addition, the legislation under which the Corporation operates recognises that the people of Australia, ultimately, are the principal beneficiaries of the work of the FRDC.

FIGURE 3: THE FRDC'S STAKEHOLDER FRAMEWORK AND STAFF STRUCTURE



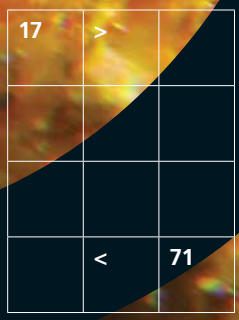
Not all entities involved with the FRDC are shown. For simplicity, only the relationships between the FRDC and other entities are shown — not relationships between those entities. Many of the entities have multiple relationships with the FRDC: for example, CSIRO is a co-investor and a research provider.

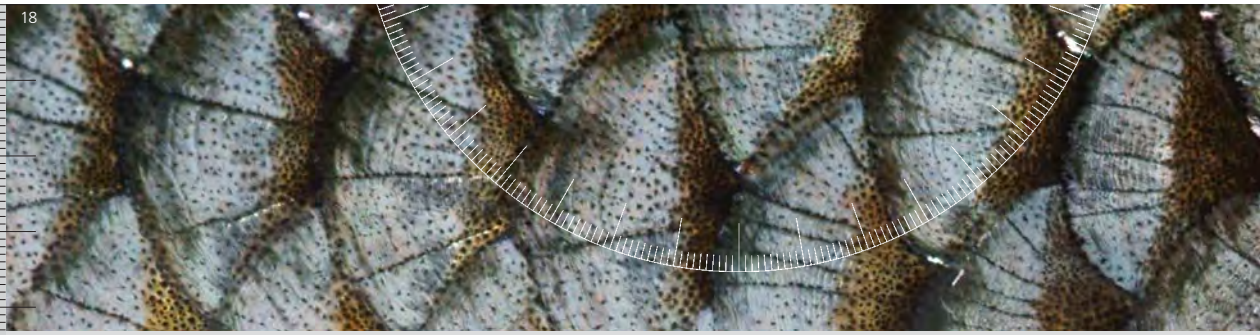
IT'S JUST A MATTER OF SCALE(S)

The commercial sector (wild catch and aquaculture) produced 236,000 tonnes of seafood in 2008–09.

Report of Operations

Part 2: The FRDC's operational results





Benchmarking review of the FRDC's research management

The FRDC faces continually increasing expectations from stakeholders that its operations are world class and represent value for money for industry and taxpayers and best practice for researchers. The FRDC must be able to demonstrate that its operations match these expectations.

Accordingly, in August 2009, it commissioned Origin Consulting to report on the extent to which current FRDC policies and practices for managing its research program are consistent with better practice guidance, particularly the Australian National Audit Office's (ANAO) *Better Practice Guide on the Management of Research Projects* and other benchmark guides such as Land & Water Australia's *The Getting of Knowledge*.

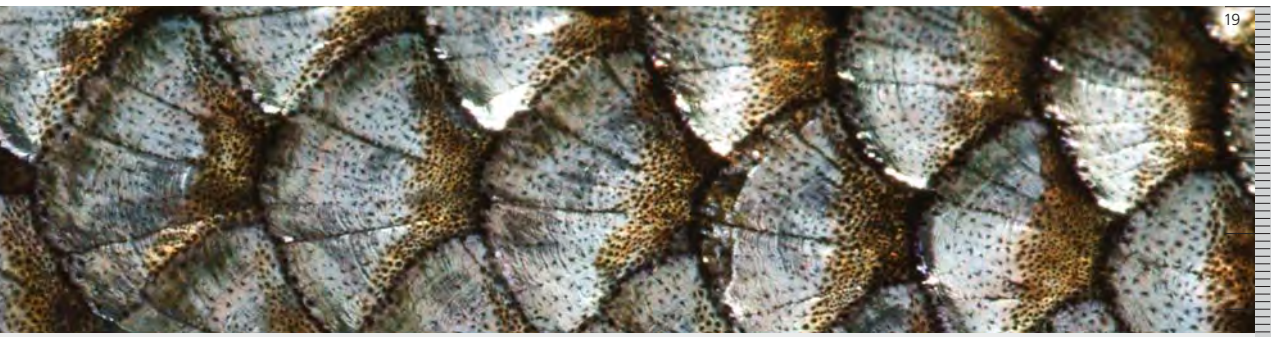
The methodology for the review included:

- examining current FRDC research management framework of policies, procedures, manuals and other guidance on the setting and communication of research priorities, development of research portfolios, selection and approval of projects, contracting, management and monitoring of projects and project finalisation and review
- reviewing a small sample of projects to assess the extent to which these have been managed consistently with the guidance framework and identify any recurring issues in project managed
- interviewing FRDC staff to understand the application of the guidance and identify any areas for improvement
- interviewing a sample of external stakeholders such as researchers, funding partners and others to gain an external perspective on the management of research.

Key findings and recommendation

Overall, Origin Consulting found that the FRDC compares well against better practice guidance and has most elements of an effective system in place for managing its research programs. More importantly, there is clearly a commitment from the Secretariat at all levels to continue to improve their operations in this area.

Areas of particular strength are the governance and infrastructure arrangements supporting projects, and contracting and monitoring processes. Areas where improvement efforts should focus are in regard to research strategy, alignment of the role of Fisheries Research Advisory Board (FRABs) in priority setting and project assessment, and in post-project review.



Key findings by area

The FRDC has a robust governance and infrastructure framework for managing its research program and compares well against better practice guidance. FRDC has a comprehensive suite of supporting policies and procedures. Its approach to organisational risk management is particularly strong, including regular updates and input from the Board. However, project-level risk assessment requires strengthening. Sufficient skilled staff are essential to its operations and the FRDC has good performance management arrangements in place. However, there are some signs of skill gaps, and a skills analysis could give more focus to training, development and future staff selection. A recent stakeholder study confirms that staff are highly respected. The Project Management Information System (PMIS) is seen as a useful tool, though a more flexible reporting capacity would be useful.

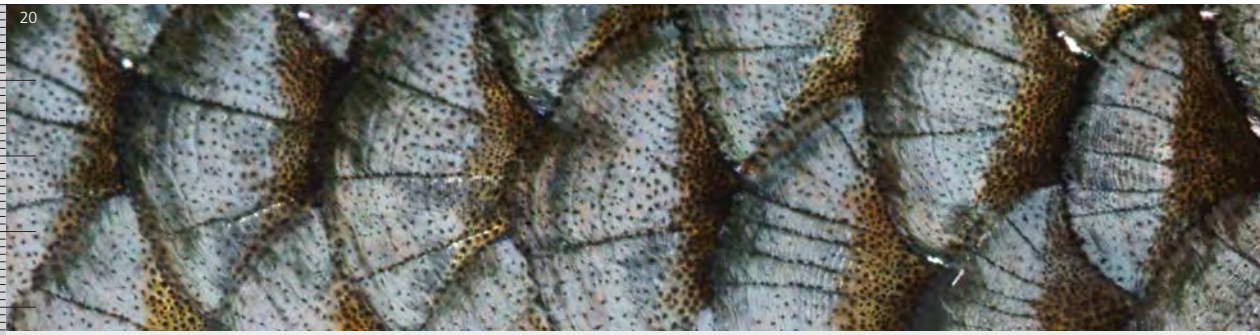
The FRDC's research strategy must respond to a complex and changing industry and scientific environment. As some stakeholders put it, FRDC is in a 'plan rich' environment. Its own R&D Plan and annual operating plan are comprehensive documents and clearly acknowledge the various priorities of stakeholders. There appears to be some disconnects between the FRDC's plans and those of other key levels in the governance structure, particularly the FRABs. Overall, the FRDC structure compares less well against better practice guidance.

Related to the previous comments, processes for developing, planning and approving projects are well established and generally consistent with better practice guidance. The FRDC devotes significant effort to ensuring a thorough assessment of projects. However, the respective roles of the FRDC and the FRABs are not completely clear. A number of issues have already been identified by the FRDC and are being addressed. One area to focus on is to align the selection and ranking methodologies of the FRABs and FRDC.

Contracting of projects takes up a significant amount of staff time. The FRDC has a standard contract and also clear procedures for negotiating with researchers. It was noteworthy that the Board's requested changes or conditions are consistently attended to and overall practices are generally consistent with better practice.

Monitoring of project progress, a major task of the program section, is conducted in a systematic manner and compares well against better practice guidance. There are a number of regular 'slippage' reports provided to management outlining patterns in delays. In some cases, however, new projects are approved for researchers who have outstanding reports. Management is now moving to put in place stricter requirements on the completion of project final reports, and this should be continued.

Project finalisation and review has been through a number of changes in recent years, with the FRDC trialling the conduct of benefit cost studies and other approaches to post-project review. The FRDC is currently participating in a broader effort by rural RDCs to improve the quantification of benefits. Overall, the FRDC is generally consistent with better practice guidance.



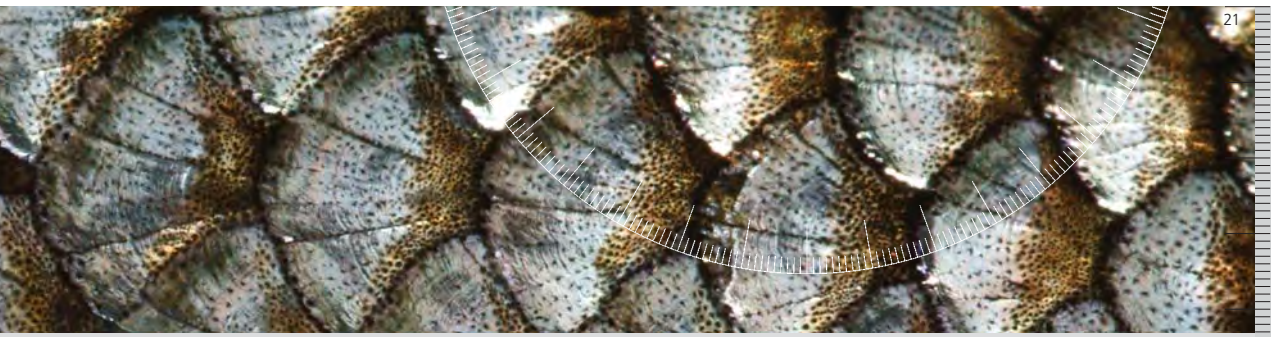
The approach to extension and dissemination is guided by annual communications plans and FRDC policy. However, there remains some misunderstanding by researchers of their responsibilities to publicise findings. Overall, the FRDC is generally consistent with better practice guidance.

FRDC has acted on all recommendations (designated in italics below) and has work in progress on the remaining four.

Recommendations

1. *Distribute the updated Investment Framework Policy to stakeholders.*
2. *The FRDC should prepare a short guide for principal investigators on project management that addresses major recurring weaknesses in project management.*
3. *The FRDC should conduct a skills audit to assess and guide future training of its staff.*
4. *Review the risk register to include a category of project-related risks that will support a greater focus on project risk assessment.*
5. *The FRDC reviews the role of FRABs in setting priorities. Changes should be then codified through explicit terms of reference and/or a service level agreement between the FRDC and FRABs. This should include agreed priorities with each jurisdiction that clearly reflect the FRDC's national research plan and its national research framework.*
6. *Further develop a research planning framework that explicitly links and aligns federal, state/territory and FRDC research priorities.*
7. Develop a common priority-setting and project assessment process to be used by FRABs and the FRDC.
8. *The assessment processes used by FRABs should clearly delineate between technical and industry priority considerations.*
9. Revise the risk assessment section of the standard template to give greater guidance and emphasis to project-level risks (drawn from the FRDC risk register) that might affect delivery. This guidance could specifically highlight risks to project timeliness.
10. *Continue to monitor the timeliness of feedback to researchers on milestone and final reports.*
11. Decide who will be asked for beneficiary impact at the start of the project independently of the researcher.
12. *Develop a policy to guide FRDC practice in regard to post-project review including the dissemination of lessons learned.*
13. The FRDC establishes a work process defining when the Communications Manager participates in project assessment.
14. *The FRDC sends a reminder to all current researchers on their obligations for clearing reports.*

A copy of the FRDC's *Research Management Benchmarking Study* is available on request.



Evaluating the FRDC's RD&E portfolio

The FRDC has undertaken and completed an economic evaluation of a statistical sample of 18 randomly selected clusters of FRDC investment across three programs and has found that the average return to FRDC investment is 5.6 to 1. The 18 cluster analyses and subsequent report 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 CRRDC work to collaboratively implement a framework of benefit cost analysis (BCA) to evaluate research and development activities undertaken. The FRDC believes that these analyses will enable a total RD&E portfolio assessment for the last five years. The Corporation intends to continue a rolling series of BCAs to ensure that this assessment is maintained and informs the FRDC Board on the optimal RD&E investment strategy.

All research projects that were completed or substantially completed between July 2002 and June 2007 were included in a population of projects, and this population was divided into 32 clusters of investment by grouping projects into homogenous subject areas. It was from these 32 clusters that the 18 clusters analysed were randomly selected. The total value of FRDC funding for this population was $92.76 million (nominal). The FRDC investment in the 18 clusters totalled $51.63 million therefore, represented 56 per cent of FRDC's total investment (in nominal terms) in the population.

The majority of the benefits qualitatively identified from the 18 clusters of research was economic in nature, although significant numbers of environmental and social benefits were also identified. The major beneficiary of the impacts of the 18 clusters has been the fishing industry (61 per cent of benefits identified), with 38 per cent of the identified benefits being public in nature. The results demonstrate the significant spill overs of benefits to the public sector from research targeted at the fishing industry.

A number of the benefits identified from the research projects were quantified, and the investment for each cluster was calculated. Benefits were estimated over 30 years from the final year of investment in the research. Benefits and costs were expressed in 2008/09 dollar terms, and discounted to 2008/09 using a discount rate of 5 per cent.

The net present values (NPVs) for total investment for the individual clusters ranged from $1.4 million to $160.2 million and the benefit cost ratios ranged from 1.2 to 33.8. On average, FRDC investment made up 39 per cent of the total investment, and the NPVs for the Corporation's investment ranged from $0.6 million to $54.6 million.

When all 18 clusters are aggregated, the benefit cost ratios for the $214 million investment in the 18 clusters (present value terms) is 5.6, with present value benefits of $1200 million, an NPV of $986 million, and an internal rate of return of 24.3 per cent. For the FRDC investment of $83 million, the NPV is $398 million. The stratified sample included:

- Program 1 — eight clusters
- Program 2 — eight clusters
- Program 3 — two clusters

The NPVs for Programs 1 and 2 were $435 million and $538 million respectively, with the NPV for Program 3 being much lower at $13.1 million (reflecting the smaller number of clusters sampled). The benefit cost ratios and internal rate of return were:

	Benefit cost ratio	Internal rate of return
Program 1	5.3 to 1	25 per cent
Program 2	6.1 to 1	23 per cent
Program 3	2.7 to 1	61 per cent

Lessons learnt for future investment

A number of lessons were learnt from the current investment and will be taken into account for future investment and evaluation. The full report contains a complete list of these with the key lessons learnt summarised below.

Lessons relating to evaluation

- The inability to value, with any confidence, changes in the biodiversity features of fishing areas should be noted. While it may be possible to value extinction of a marine species through the community's willingness to pay, it would be far more difficult to make credible assumptions about how the improvements to habitat features (e.g. more protection from fishing given to seamounts and shelfs) contribute to biodiversity and reduce the risk of declining biodiversity or extinction.
- Innovations that apply to new growing industries (whether stimulated by the investment or not) have a greater capacity to provide higher return to R&D than small and/or slow growing industries.
- Authoritative information on the costs along the value chains for wild catch destined for domestic and/or export markets are not readily available and this hinders effective evaluation. It is understood some work that might contribute to this is currently being undertaken by the Seafood CRC.
- The approach developed for valuing the benefits from the population dynamics and stock assessment clusters could be used by FRDC for ex-ante assessments of proposals aiming to improve stock assessments. An additional variable on the probability of success of the proposed project would need to be added if the approach was to be used for that purpose.
- It would be helpful to future evaluations if the FRDC project management system were able to more easily extract funding information by financial year across a range of individual R&D areas.

Lessons relating to future investment and management

- FRDC could consider developing cost of production models for aquaculture enterprises that include unit feed costs, feed conversion ratios and other production parameters in order to assess research priorities and individual research proposals, as well as to assist in the communication of research results to the relevant industries.
- The salmon aquaculture cluster demonstrated the importance of identifying and addressing high priority issues for the industry and utilising existing research from overseas that can be adapted to Australian situations.
- Backgrounding emerging issues and preparing for change are important for the FRDC in order to respond effectively and quickly to sudden external policy changes that affect the fishing industry.
- Subprogram structures can be of value in assisting with priority setting across the research and development spectrum, and across different sectors and issues.

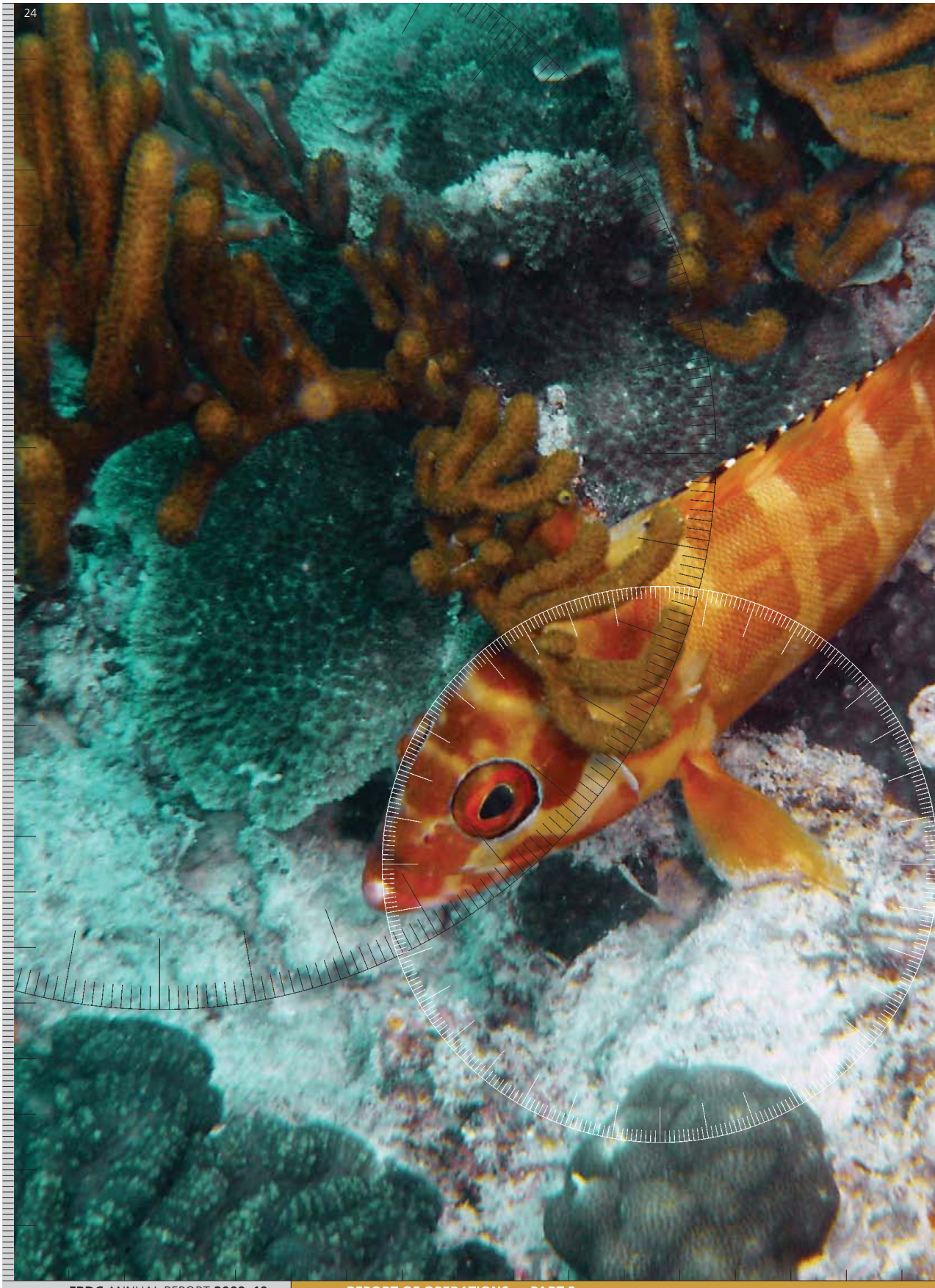
Ex-ante evaluation

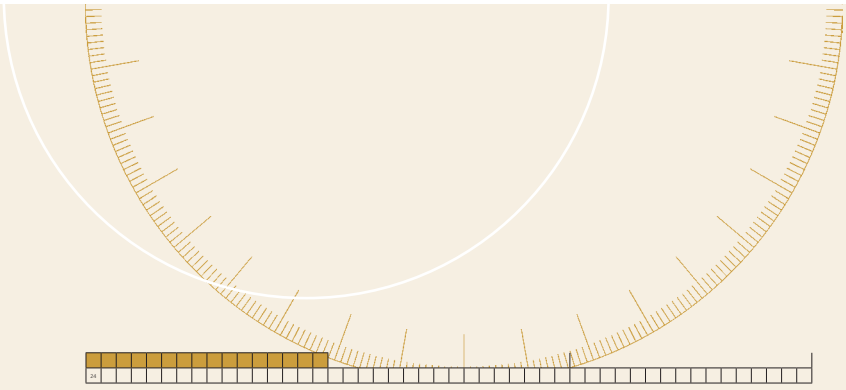
The evaluations carried out by Agtrans were ex-post evaluations, as they were undertaken after the completion of each project. Economic evaluations can also be ex-ante in nature, in that they take place prior to the project being undertaken, and they seek to predict the likely benefit from the research. Based on the research and evaluation, three potential uses of ex-ante evaluation were provided to FRDC for consideration in future planning:

1. As part of the proposal process: Those submitting project proposals could be asked to complete a basic benefit cost analysis and actually produce expected investment criteria. Though, while an effective approach, a number of issues would need to be resolved to be effective or practical.
2. As part of the funding decision process: Benefit cost analysis is a tool that can be used to aid in R&D funding decisions when choosing between projects at the margin of being funded.

   It was noted, that for the decision makers, it was not only the actual investment criteria that were used in the decision-making process. But rather enhanced project logic and assumptions of the whole package of information that were of value in comparing the projects. This approach could also be useful in assessing marginality (over or under investment in research) by completing (after project completion) benefit cost analyses for marginal projects funded.
3. As a monitoring and evaluation tool for large investments: Ex-ante benefit cost analyses can be a valuable tool for developing a framework for large investments, or subprograms of investment.

A full list of all benefit cost evaluations and their reports is available on the FRDC website.





Program 1: Natural Resources Sustainability

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 for managing the fisheries and aquaculture activities within their jurisdictions. Large components of the R&D 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 and expenditure for 2009–10 visit the FRDC website — **www.frdc.com.au**

Principal inputs

During 2009–10, $13.75 million (56 per cent of total R&D expenditure) was invested in R&D activities within this program.

Strategic challenges for Program 1

Challenge 1: Natural resources sustainability	Improve the sustainability of natural resources supporting wild catch and aquaculture.
Challenge 2: Resource access and resource allocation	Optimise resource access, resource allocation and opportunities for each sector of the fishing industry, within a rights-based framework.

Summary of performance indicators for Program 1

Key performance indicator		Achievement
Improved understanding of the impacts of climate change that lead to adaptation by fisheries management and industry.	Two reports	Achieved — FRDC invested in numerous projects that were completed during the financial year. These have all led to some changes in both management and stakeholder activity. Examples of projects completed are: ¬ development of an agent-based model to communicate implications of recruitment variability of finfish to recreational fishers ¬ effects of environmental variability on recruitment to fisheries in South Australia.
Improved adoption of co-management fisheries principles by industry and fisheries managers.	Two fisheries	Achieved — Multiple fisheries are now starting on the co-management path. Spencer Gulf Prawn fishery has advanced along the path towards a delegated management model, whereas the Northern Prawn Fishery (NPF) (see story page 32) has undertaken some functions such as data collection.
Improved sustainability performance due to the use of social and economic R&D outputs.	One fishery/ agency reports on performance	Achieved — The NPF has adopted as part of their management to consider maximum economic yield as opposed to maximum sustainable yield. The FRDC has also developed as part of its new RD&E Plan a social science research coordination program.
Increased use of spatial R&D outputs by fisheries managers.	One agency reports on use	Achieved — The results of research project *Mitigating seal interactions in the Southern Rocklobster Fishery (SRLF) and gillnet sector Southern and Eastern Scalefish and Shark Fishery (SESSF) in South Australia* have led to a management response which includes spatial management.

Program 1 — Challenge 1 and 2 examples of project activities

Climate change suspected in alarming lobster slump

Project 2009/018 — Identifying factors affecting the low Western Rocklobster puerulus settlement in recent years

Western Rocklobster settlement is the lowest it has been in 40 years, and is a worrying trend that has researchers wondering what is responsible.

After nearly a year drifting in the ocean, the tiny spider-like creatures are swept towards Western Australia's coastal reefs by wind and ocean currents to settle and go on to become part of Australia's most economically important fishery.

Although settlement rates vary each year, researchers have noticed a concerning trend during the past few years; one that has required a 60 per cent reduction in total allowable catches for commercial fishers in the north of the fishery and a raft of new research projects.

In 2008, despite environmental conditions favouring strong settlement, rates were at their lowest in 40 years — with just two to three puerulus counted on each collector positioned around Jurien Bay. It was a similar story across the fishery. The Western Australian Department of Fisheries notes that at the fishery's centre — Jurien Bay, 267 kilometres north of Perth — the average puerulus settlement is normally about 100 per collector for the year; compared to 200 in a good year and 40 to 50 in a 'normal' bad year.

Peaks in settlement are associated with a strong Leeuwin Current and troughs with a weak Leeuwin Current (a warm ocean current that flows southwards near the west coast of Australia) which could account for the 2006–07 rates. Due to a weak Leeuwin Current that year and water temperatures well below average, a low settlement rate was expected.

However, in 2008–09 the Leeuwin Current was strong and water temperatures high, meaning the resulting record-low settlement rates were unexpected. To understand why, research was needed.

A range of ideas including breeding stock levels, environmental conditions and even measurement error, were examined as possible research options, before deciding on a series of new research programs that include oceanographic modelling with CSIRO.

The oceanographic modelling work is being led by CSIRO's Wealth from Oceans Flagship. It will use existing ocean hydrodynamic modelling information to build a model that will simulate lobster larval dispersal and settlement. The project is designed to identify potential source and sink relationships (a method ecologists use to describe how variation in habitat quality may affect population growth) associated with puerulus settlement.

Once the model is built, it will be used to help determine what is causing the inter-annual changes in settlement and whether long-term climatic trends are to blame for the recent poor levels.

With the model still being fine-tuned it is difficult for the research team to draw any conclusions as to what may be happening. Yet with the fishery worth up to $350 million annually in export value and representing about 20 per cent of the total value of Australia's fisheries, finding an answer to low settlement levels is vital, especially for the 1000 or more fishers, crew, processors and other groups who depend on it.

For further information: Nick Caputi, 08 9203 0165, ncaputi@fish.wa.gov.au

The Western Rocklobster fishery

The Western Rocklobster Fishery was the first fishery in the world to be certified as ecologically sustainable by the Marine Stewardship Council.

Sustainable catch is estimated at between 10,000 and 11,000 tonnes per year on average, although the size of the actual catch has varied between 8000 tonnes and 14,500 tonnes.

The fishery extends from Shark Bay in the north to Cape Leeuwin in the south. The fishery is divided into three zones and extends to the shelf break for approximately 60 kilometres offshore.

'Out of the box' thinking measures Longtail Tuna health

Project 2008/058 (Tactical Research Fund) — Biology, fisheries and status of Longtail tuna (*Thunnus tonggol*), with special reference to recreational fisheries in Australian waters

The population of Australia's newest recreational-only fish species the Longtail Tuna is alive and thrashing with vitality. The elusive nature of Longtail Tuna however, has driven researchers to trial new monitoring methods for a CSIRO-led project, 'Biology, fisheries and status of Longtail Tuna, with special reference to recreational fisheries in Australian waters'. The new methods for estimating recreational fishers' total Longtail Tuna catch include time-location sampling. Adopted from the frontiers of epidemiology and social sciences, time-location sampling is the process of selecting a random number of locations and sampling them randomly through time.

The new method is a significant breakthrough in recreational fishing research and demonstrates outside-the-box thinking by the project team. By targeting sport fishers at aggregation points, such as tackle stores, researchers were able to more cost effectively collect a representative sample of fishers, compared with traditional methods involving telephone or boat-ramp surveys.

Time-location sampling can use representative data derived from a subset of fishers to estimate the total recreational catch by expanding the total population size of Longtail Tuna fishers. Online reporting was another defining feature of the progressive research, partly funded by the FRDC.

A website dedicated to the project encourages fishers to assist with scientific research and help secure the fish population by detailing their Longtail Tuna catches online. However, researchers urge fishers to record both their catch successes and failures to provide a more complete picture of the overall fishing effort directed at the species.

Initial findings seem to indicate an apparently low recreational fishing pressure, but researchers hope further findings will answer whether Australia's Longtail Tuna population is part of a single stock, or one shared with South-East Asia.

For further information: Shane Griffiths, 07 3826 7364, shane.griffiths@csiro.au; or Bill Sawynok, 07 4928 6133, 0417 075 277, bill@info-fish.net

Cyclone forces fishers to pull up anchor

Project 2008/103 (Tactical Research Fund) — Adapting to change: Minimising uncertainty about the effects of rapidly-changing environmental conditions on the Queensland Coral Reef Finfish Fishery

The dramatic change in catch rates caused by tropical cyclone (TC) Hamish could be an early warning sign of what a changing climate and extreme climate events might mean for commercial fishers on the Great Barrier Reef.

Since March 2010, the small fishing port of Bowen in north Queensland has seen almost a doubling of boats unloading at its harbour. On the surface, this seems an economic bonus for wholesalers and retailers. However, the change is actually of concern to the industry. It highlights just how dramatically fishing effort in the Coral Reef Fin Fish Fishery (CRFFF) can shift geographically in response to the effects of the tropical cyclone.

The category 5 cyclone traversed the Great Barrier Reef in March 2009, surpassing all previous storms in intensity, duration and maximum track length over coral reef structure. In its fury, it crossed the reef east of Bowen, unleashing damage on a section of the reef that historically produces 70 per cent of the annual landings taken by the CRFFF's commercial fleet. TC Hamish had the same impact on the reef as TC Larry had on the land in 2006. TC Larry caused hundreds of millions of dollars' worth of damage and resulted in the Australian Government providing more than $100 million in assistance.

Along with the structural damage to the reef, TC Hamish's impact has also been to change catch rates, reducing the catch of the primary target species, Common Coral Trout, and increasing catch rates of the secondary target species, Red Throat Emperor. Coral Trout have disappeared and the bottom feeder Red Throat Emperor has taken their place.

This has prompted commercial fishers to move north from their usual fishing grounds in the reef's southern section, concentrating fishing effort in an area 1000 square nautical miles east-north-east of Bowen bounded by 'no fishing' green zones to the north and the impacted reef to the south. Given that total coverage of the Great Barrier Reef Marine Park is about 190,000 square nautical miles, it is a very small area to be receiving such a concentrated fishing effort.

The change in fishing effort is a concern across the 100-boat industry and it has prompted an FRDC Tactical Research Fund project to examine the issue. The project aims to assess the immediate impacts of TC Hamish, compare this recent experience with historical cyclones of lower intensity, and explore the adaptability of commercial and charter fishers to climate variability.

Anecdotally, this is the second time Coral Trout have moved. In 1997, TC Justin also caused fish to stop biting. TC Justin was a peculiar, low intensity storm with a large associated cloud mass. The storm persisted for 24 days and as a result caused an unprecedented cooling of the sea temperature. Water was about 4˚C lower, which is a fairly substantial reduction.

Researchers says that by looking at these two events researchers can work together to identify the impacts they have had, but also look to how we can build resilience into the fishing industry to allow fishers and managers to better cope with such events in future years.

For further information: Andrew Tobin, 07 4781 5113, andrew.tobin@jcu.edu.au

Scientists target Barra killer

Project 2008/041 (Aquatic Animal Health Subprogram) — Tools for investigation of the nodavirus carrier state in marine, euryhaline and freshwater fish and control of through integrated management

The nervous necrosis virus (NNV) — also known as beta-nodavirus — is a nightmare for fishing and aquaculture industries worldwide. It is a serious disease that affects more than 35 species, in Australia it has targeted Barramundi. But now a research breakthrough has improved the virus test so dramatically that it is set for a national roll-out in a new project funded by the FRDC, which could help save fish stocks and significant dollars in both aquaculture and wild fisheries.

Described as a 'quantum leap' in DNA detection technology, the new test is 100 times more sensitive than anything before it. As one researcher says, "That means we can pick up the virus at 100 times less concentration in fish than ever was possible. This means researchers can find the virus when it's very uncommon in the individual fish or the fish population and the test's sensitivity allows them to pinpoint the exact moment the disease was transferred." Already a trial of the technology at the Darwin Aquaculture Centre has revealed hatchlings thought to have contracted the virus from brood stock were actually infected with water contaminated by wild fish in Darwin Harbour.

The implications for industry are dramatic, it opens up new opportunities and approaches for controlling the disease and this is what Barramundi producers have been seeking for a long time. For example, with the water supply identified as a potential contamination source, aquaculture industries can look to engineering solutions for improved biosecurity.

Biosecurity on-farms is now something that needs a lot of attention because we want to stop the transmission of infection from older fish (which can carry the disease, but have no symptoms) to younger fish (which can die). This can include having dedicated staff and equipment for the hatchery and nursery, foot baths and hand wash stations.

The new test, now being rolled out to five state-based laboratories with FRDC funding, will sweep away the old, time consuming pathological test, meaning a diagnosis can be made quickly and accurately if there is an outbreak. The laboratories will use the test to shed light on the nature of the disease itself as part of the three-year project.

This could reveal opportunities for intervention to break the cycle of infection. Researchers will be able to measure and better understand the way the disease behaves. This includes which environmental factors may trigger an outbreak, at what age a fish can become infected, what dose is required for infection and how quickly the disease spreads. Knowing answers to these questions will also allow researchers to design a targeted testing strategy to detect the virus, saving money for producers.

For further information: Richard Whittington, 02 9351 1619 or 02 9351 1787

Industry buy-in swells voluntary data collection

Project 2008/045 — Co-management in Commonwealth fisheries

In its first year of taking on contracted management roles, the Northern Prawn Fishery has shown that industry involvement can be quite a success.

Industry 'ownership' of some management tasks that used to be performed by the Australian Fisheries Management Authority (AFMA) has certainly had an impact on data collection in the Northern Prawn Fishery (NPF).

In its first year of taking on contracted co-management duties from AFMA, NPF Industry Pty Ltd — the company set up to represent NPF fishers — the amount of fisheries data collected by crew member observers (CMO) more than tripled. The reconciled fishery catch and effort data was also delivered to researchers on time, despite the fact that NPF Industry rolled out a fisheries wide electronic logging program at the same time.

The NPF is one of a number of Commonwealth Fisheries that has begun trialling co-management arrangements with AFMA. NPF Industry's formal contracted agreements with AFMA began in February 2009 and will end in June 2011. It sees industry taking on data management and CMO program management functions.

The first year of undertaking data-management functions, included some testing times, mostly due to technicalities. Fishers rolled out the fishery-wide e-log program at the same time as taking over the data-management function and there were complexities in that, which caused some challenges.

The fishery collects real-time data via e-logging, including recording catch, area and interaction with protected species, and sends this information to AFMA in Canberra using 3G phone connections. It is this catch and effort data that is used in CSIRO's stock-assessment program.

The trial sees industry provide recommendations to government on changes to season length, and in-season management, such as monitoring catch levels to determine if the season will continue or not. This collaborative spirit saw a voluntary small prawn avoidance policy implemented last season.

When operators went into areas where there were smaller than optimum-sized prawns, they reported it back. "And so we advised others to stay out of those areas and were very successful in implementing a voluntary closure in one area of the NPF. The cooperation of the whole fleet to avoid that area was really good. In a way, it's another level of co-management." Annie Jarrett says that overall the trial with AFMA has been very successful. "I think it's been a very positive year and we've proven we can deliver. We've not yet determined the costs and benefits of what it means for us in taking over those tasks, but in terms of industry ownership and improved capacity building it's been very positive."

Industry agrees that without question, the AFMA trial is heading in the right direction. It has opened up prospects for cooperation between industry and government across a much broader range of fisheries' activity, setting a more holistic approach to management that marries science, regulation and commerce in ways that have not been possible before.

The AFMA/industry co-management team is now developing an analysis process to test whether the trial has been effective or not and, if it has been, how similar functions can be rolled out to other fisheries. For the NPF itself, there could also be greater industry involvement in management, with the feasibility of industry leading the fisheries scientific observer program also being investigated.

For further information: Annie Jarrett, 07 5437 0513, annie.jarrett@austarnet.com.au

Management is not just black and white

Project 2005/010 — Grey Mackerel management

This project indicated that Grey Mackerel fisheries should be managed at a state/territory level and by regions within these jurisdictions. The project identified at least five separate stocks of Grey Mackerel throughout northern Australia for management purposes. This information provides the basis for reliable and robust assessment of the status of Grey Mackerel stocks, identifies where stocks encompass shared jurisdictions, and helps deliver sustainable harvest and profitable utilisation of Grey Mackerel resources in northern Australian waters. The project provided a framework for more accurate stock assessment of Grey Mackerel fisheries and results have influenced the development of monitoring strategies for the fisheries on the Queensland east coast and in the stock assessments for the Gulf of Carpentaria. The project helped develop relationships between community groups, research and management to address emerging fisheries issues.

For further information: David Welch, david.welch@jcu.edu.au

Western Australian co-management a way forward

Project 2008/059 — Fisheries co-management

This project looked at co-management strategies for Western Australian state-managed fisheries using the Exmouth Gulf Prawn Fishery as a case study. The case study provides a local co-management governance model that could be used as a template for other WA-managed fisheries. It suggests that the progression of a trial towards self-management is worth pursuing should there be market advantages from third-party environmental certification. Further progression of co-management is recommended.

To date most Australian fisheries co-management initiatives have focused on modifications to existing fishery management plans and — apart from in South Australia — primary co-management legislation has not been introduced. While industry-driven operational issues have progressed under co-management trials, principal policy-change decisions requiring legislative amendments remain very much in the hands of government. Legislative change is necessary to provide transparency and real decision-making power for stakeholders to effect fisheries plan amendments. Specific legislative amendments to the *Fish Resources Management Act 1994* are proposed. In examining the 'business case' for it showed that with modification to consultative and communication arrangements, 're-engineering' decision-making and reporting processes, and updating fishery stock assessment, Marine Stewardship Council certification could be achieved.

The development of the case study and this report have added to the understanding of the issues involved in fisheries co-management and legislative requirements for amending the Western Australian *Fish Resources Management Act 1994*. It is also expected to strongly influence the evolution of the development of future management arrangements for the Exmouth Gulf Prawn Fishery.

For further information: Professor Peter Rogers, 08 9360 6349, p.rogers@murdoch.edu.au

SIFT technology provides options

Project 2005/213 — Sustainable finfish culture technologies

This project showed that yields of 10 tonnes of fish per hectare cannot be sustainably achieved in static, autotrophic saline ponds (that is, ponds dominated by photosynthetic organisms) over a three to four-month production cycle, despite the removal of settable wastes from the semi intensive floating tank system (SIFTS). The outcome of this finding was to advise potential industry entrants of this fact and to further investigate alternative options to enable such yields to be achieved.

The project's work on integrating heterotrophic pond-management techniques (that is, ponds dominated by bacterial organisms that use organic carbon as an energy source) with carnivorous fish production in SIFTS has shown that 15 tonnes per hectare is achievable over a 100-day production cycle. Economic analysis revealed that the profitability of a stand-alone enterprise growing carnivorous fish in SIFTS within heterotrophic ponds would be marginal at 150 tonnes per year of production. The outcomes of these trials have already been used to design further trials on optimising heterotrophic pond management at the Queensland Department of Primary Industries' Bribie Island Aquaculture Research Centre. Demonstrating that SIFTS can be integrated with heterotrophic pond management systems creates an opportunity for existing prawn farms using heterotrophic pond management to integrate Barramundi farming into their existing operations with minimal changes.

For further information: Gavin Partridge, gavin.partridge@challengertafe.wa.edu.au

Clear waters ahead for salmon

Project 2004/074 — Environmental issues of salmonid farms

This project has established a detailed set of data that provides a clear picture of the environmental conditions in the Huon Estuary and D'Entrecasteaux Channel, where two-thirds of Tasmania's salmonid industry is located. Environmental conditions are generally good, with occasional periods of high phytoplankton abundance and low dissolved oxygen. The data have been used to calibrate and validate sophisticated three-dimensional hydrodynamic and biogeochemical models of the region that capture the main physical and biological processes.

A major success of the project was the development of a three-dimensional hydrodynamic, sediment and bio-geochemical model to evaluate the environmental impact of salmonid fish farms in those waters and a long-term monitoring strategy has been developed to ensure the sustainability of the salmonid industry. The proposed monitoring program is designed to provide knowledge of how well the ecosystem is functioning with an increased nutrient load and to detect any significant trends in ecological indicators.

For further information: John Volkman, john.volkman@csiro.au

Abalone tells all

Project 2007/066 — Response to abalone virus depletion

This project provided survey and other information to support assessment of individual reef codes (designated sections of reefs) in Victoria's western fishing zones, and basic models to assess population status and examine management options for these reef codes. The immediate outcomes were better-informed abalone industry stakeholders in Victoria's western zone, the Victorian management agency and Victoria generally. However, as this was the first project to build reef code level assessment models, and the first to design surveys to assess the impact of the new disease on reef stocks, it has provided a basis for design and testing of models for reef scale management of stocks elsewhere, and a tested template for the information that will be required when/if the abalone virus spreads to other regions. Thus the industry generally and all abalone-producing states have benefited.

For further information: Harry Gorfine, hgorfine@unimelb.edu.au

An economic analysis of FRDC investment in population dynamics and stock assessments — tropical

Background

The sustainability of natural resources was one of the three programs defined in the FRDC's 2000–2005 R&D Plan. Improving the assessment methods for stocks and improving the management of stocks were key strategies in executing the program. A number of projects in this cluster addressed resource assessment and sustainability within northern Australian waters.

An estimate of stock size is a fundamental requirement in predicting a fishery's production potential and subsequently in developing ecologically sustainable management practices. Knowledge that underpins stock assessment and sustainability includes understanding taxonomy, age structure and longevity, reproduction, habitats, feeding preferences, history of the fishery, catch rate, and species interactions. Assessment is becoming more and more ecosystem-based with environmental drivers being important (e.g. climate variability, river changes, association with habitat and oceanographic conditions) as are the interconnectedness of species, by-product catches and the interactions between different fisheries management regimes.

FRDC do not fund stock assessment or monitoring per se but the improvement of assessment methods, particularly developing novel methods or making them more useful and robust, are important priorities for the Corporation. Routine monitoring, assessment and management are generally the responsibility of the various fisheries managers (state or Commonwealth).

The rationale for this investment is that wild fisheries need to be managed to avoid the tragedy of the commons. Management to ensure a sustainable catch usually takes the form of input and output controls, where output controls focus on the 'take' and input controls focus on the catch rate and gear type. Without government control, it is likely that the industry and the public would be worse off through an increased frequency of fisheries collapses, unsustainable resource use, and the industry becoming unprofitable.

It is argued that governments intervene in, or proactively manage, fisheries for the public good and therefore research to strengthen fisheries management is also a public good. FRDC funding for this cluster of projects therefore has been derived mainly from government funding. In fact, FRDC receives around 65 per cent of its funding from government. Due to extractive use by industry and a responsibility to ensure resources (fish and habitats) are used sustainably, some money from industry levies has also been invested in this cluster. In some cases this is reluctantly provided by industry as they see mainly increased regulatory outcomes causing industry pain, at least in the short term.

Project investment

Following are details of the 12 projects included in the cluster analysis. The projects in this cluster were those with final reports completed in the period from 1 July 2003 to 30 June 2008. This met the criteria for population definition in the guidelines for evaluation as communicated by the Council of Rural Research and Development Corporations.

Project number	Project title	FRDC $	Other stakeholders $	Total $
1997/146	Developing indicators of recruitment and effective spawner stock levels in north Queensland east coast prawn stocks	154,654	420,000	574,654
1998/128	Biological data and model development for management of longfin eel fisheries	339,353	340,100	679,453
1998/131	Stock structure and regional variation in population dynamics of the Red Throat Emperor and other target species of the Queensland Tropical Reef Line Fishery	393,848	1,306,837	1,700,685
1998/132	Distribution, abundance and population dynamics of beachworms (*Onuphidae*) in Queensland/New South Wales and the impact of commercial and recreational fishing	70,470	30,100	100,570
1999/120	Reference point management and the role of catch-per-unit effort in prawn and scallop fisheries	359,269	677,266	1,036,535
1999/123	Age validation in tailor (*Pomatomus saltatrix*)	241,470	573,598	815,068
2001/018	Development of a genetic method to estimate effective spawner numbers in tiger prawn fisheries	342,054	428,176	770,230
2001/077	Northern Australian sharks and rays: the sustainability of target and by-catch fisheries, Phase 1	160,162	92,400	252,562
2002/064	Northern Australian sharks and rays: the sustainability of target and by-catch species, Phase 2	989,351	232,584	1,221,935
1999/125	Tropical Resource Assessment Program: phase II, model application and validation	203,304	590,000	793,304
2000/142	Methods for monitoring abundance and habitat for northern Australian mud crab (*Scylla serrata*)	576,604	1,321,208	1,897,812
2001/019	Exploitation dynamics and biological characteristics of east coast Spanish mackerel harvested by the recreational and commercial sectors	163,634	277,185	440,819
Total		**3,994,173**	**6,289,454**	**10,283,627**

Benefits

Both private and public benefits will arise from the cluster investment. It is likely that most industry benefits will be confined to the wild catch fishing industry, although aquaculture industries are likely to benefit from reduced access by fishers to fisheries. Such an impact assumes that improved stock assessment results in more regulation and this may not always be the case. Furthermore, some aquaculture industries can also be impacted on by wild stock management constraints where they rely on wild broodstock such as black tiger prawns.

On the basis of the distribution of benefits from the cluster, and equal weighting for each benefit, it could be concluded that public benefits to Australia could make up to 67 per cent of the total benefits.

The principal outcomes from investment in this cluster can be summarised as:

- ¬ Development of new techniques and technologies that have enhanced understanding of stock changes and population dynamics in fisheries.
- ¬ Improved techniques for stock monitoring and assessment through lowering costs and/or increasing accuracy with associated greater confidence in assessments.
- ¬ Improved conservation and management decisions for fisheries.

Attribution of benefits

Economic

1. Potential for reduced catches for industry as a cost, at least in the short term; but potential for enhanced long-term economic benefits from the fishery due to information being used to maintain sustainability.
2. Changes in costs of stock assessment.
3. Potential for growth in aquaculture as wild fisheries become more controlled.

Environmental

4. Reduced likelihood of fisheries degradation.
5. Lowered risk of damaging habitat, the ecosystem and biodiversity.

Social

6. Potential costs and benefits to fishing communities.

Lessons learnt for future investment

Lessons learnt from this analysis include:

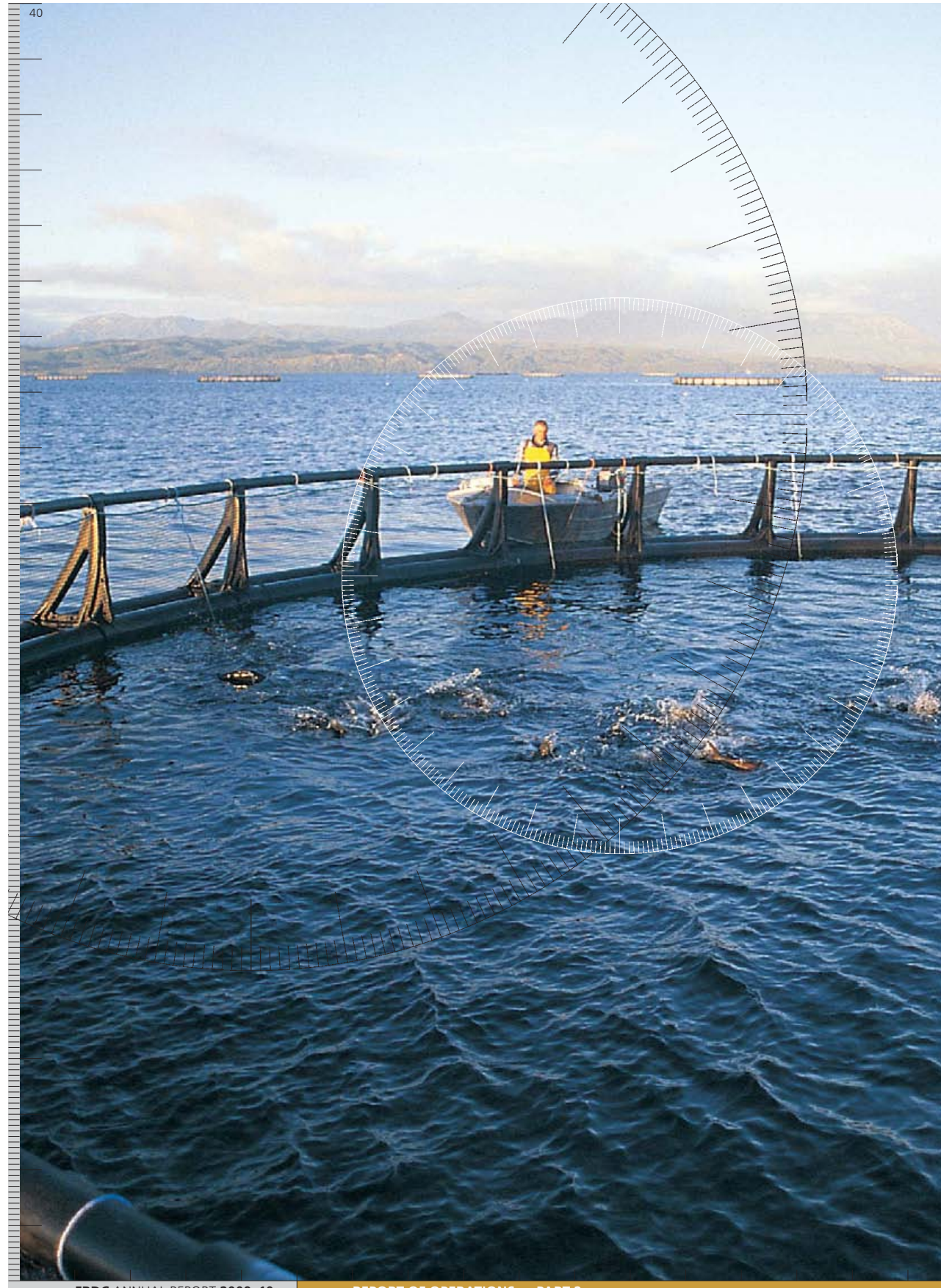
- ¬ There was little integrated information available on the current processes, accuracies and costs of existing stock assessments to provide a baseline for measuring improvements. A standardised process for assembling such information could be helpful to the FRDC in assessing proposals for improving stock assessments in future.
- ¬ The approach developed for this historical evaluation could be used by the FRDC for ex-ante assessments of proposals aiming to improve stock assessments. An additional variable on the probability of success would need to be added if the approach was to be used for that purpose.

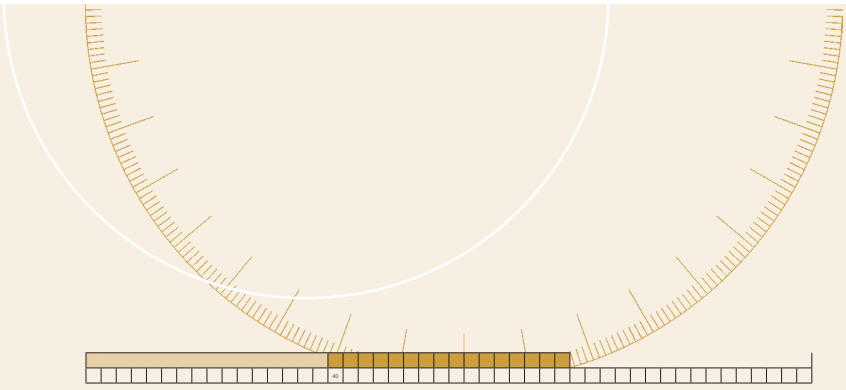
Conclusions

Investment was made in a total of 12 projects within the cluster with the FRDC's contribution approximating 38 per cent of the total costs involved.

Both private and public benefits have been identified as arising from the investment. On the basis of the six benefits identified, and with equal weighting for each benefit, it could be concluded that public benefits to Australia could make up two thirds of the total benefits. The benefits quantified have been valued in an economic framework of avoiding an industry loss from moving away from a sustainable fisheries status. To the extent that ecosystem malfunctioning and biodiversity loss may be damaged from overfishing, this approach does not value all public benefits. Hence the investment criteria estimated are probably significant underestimates of the total benefits from improved stock assessments.

Given the framework used and the assumptions made, the investment criteria estimated for the 12 projects in this cluster were positive with the total investment of $31.3 million (present value terms) estimating to return expected gross benefits of $132 million, yielding a net present value estimate of $101 million and a benefit cost ratio of over four (expressed in 2008/09 dollar terms and using a 5 per cent discount rate; benefits estimated over 30 years from the final year of investment).





Program 2: Industry Development

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 and expenditure for 2009–10 visit the FRDC website — **www.frdc.com.au**

Principal inputs

During 2009–10, $8.68 million (about 36 per cent of the total R&D investment) was invested in R&D activities within this program.

Strategic challenge for Program 2

Challenge 3: Response to demand; profitability	Respond to, and take advantage of, increased demand for seafood and for recreational and customary fishing experiences.

Summary of performance indicators for Program 2

Key performance indicator		Achievement
Industry uses the results of the FRDC's R&D to adapt to climate change.	One sector adopting research findings	Achieved — Numerous sectors have adopted knowledge around gear technology and fuel efficiency. Energy audits are now being undertaken by various sectors.
Increased aquaculture production.	Two per cent increase per year	Achieved — In total the aquaculture production rose by 2.2 per cent. In particular FRDC contributed to increases in Australian farmed prawn production value: an increase by 6 per cent to $289 million and a 5 per cent increase in production. FRDC also contributed to an increase in volume of production for the salmonid industry which increased by 15 per cent.
New value added products for the seafood sector (in conjunction with the Seafood CRC).	One new product developed	Commenced — FRDC through its investment in the Seafood CRC has commenced a project to develop a new range of chilled seafood products. It is anticipated these products will start to be developed early in 2010–11.
The FRDC funds R&D that helps industry reduce its cost structure.	Two new projects finalised	Achieved — One project was completed on a new design for 'trawl doors' which significantly reduce drag that has a resultant reduction in fuel usage. As noted above energy audits are now being undertaken by various sectors which are helping reducing costs.

Program 2 — Challenge 3 achievements and activities

Problem brine shrimp recast as money-makers

Project 2004/238 (Aquaculture Nutrition Subprogram) — Further development towards commercialisation of marine fish larvae feeds (Artemia)

From the sea, the coastline near Port Gregory, a remote rocklobster fishing outpost 520 kilometres north of Perth, is a foreboding grey ridge of low scrubby dunes. But from the air, the picture transforms into a spectacular montage; an azure ocean bordering the muted pastels of saltpans and the vivid pink water of the Hutt Lagoon. This pink hue is due to a prolific microalgae, *Dunaliella salina*, a rich source of beta carotene used globally in numerous health, nutrition and cosmetic products.

The pristine conditions within the Hutt Lagoon provide a particularly high quality beta carotene, but there has been a stumbling block — tiny brine shrimp called Artemia that feed on the microalgae. The Artemia were threatening the industry's viability and this prompted the industry to seek a solution.

The resulting partnership with FRDC and the Department of Fisheries Western Australia has helped rescue the microalgae venture — enhancing and securing the beta carotene extraction, but also spawning another valuable new industry.

Artemia are highly prized as an essential food for aquaculture and aquarium fish and, because of periodic global shortages, the price sometimes reaches several hundred dollars a kilogram. So the 'problem' quickly turned into an opportunity, but needed a considerable amount of R&D — mostly in sophisticated filtration systems and biosecurity.

The system developed pumps the saline, algae-rich water from evaporation ponds into 32,000-litre tanks in which the Artemia are reared. After filtration, the waste water from the Artemia tanks is then returned to the evaporation ponds with no Artemia present.

It required considerable ingenuity, bioscience and engineering, but the set-up has proved a success and the new commercial Artemia venture was officially opened in April 2010.

A further, unexpected, benefit of the Artemia project could provide a boon to Western Australia's grain growers. The Grains Research and Development Corporation has been funding research into the use of lupins as a high-protein fish feed, but fish are not particularly attracted to lupin meal. Researchers note the addition of an Artemia-based attractant could change this, creating a double benefit from the research investment. Lupins are the only break-crop option for many Western Australian growers, but viable markets have proved hard to find. Aquaculture would be a prize catch.

For further information: Sagiv Kolkovski, skolkovski@fish.wa.gov.au

Workforce exchange offers labour solution

Project 2008/334 (Human Capital Mobility Program) — A scoping study to investigate the feasibility of a national seafood industry exchange

While surviving economic challenges like over-capitalised fleets, declining fish stocks, lower commodity prices, rising fuel costs or environmental concerns (such as by-catch reduction), many fishing and aquaculture operators have managed to build experienced collections of staff. However, this investment in people is being tested with competition from high-paid jobs in other sectors.

Building, maintaining and capturing employee knowledge and experience is a challenge for any industry. But this is especially so in an industry where working conditions are unique and challenging, and competition for labour is strong, as in many sectors of the seafood industry. Labour-force efficiency is highly valuable.

It is where a new FRDC Tactical Research Fund project aims to help. The project will test run a series of crew and labour exchanges to investigate the feasibility of a national seafood industry worker exchange program, as well as identify barriers to greater workforce mobility.

A labour exchange could, for example, see workers from operationally similar sectors move across Australia, from fishing season to fishing season, supplementing labour and bringing about full seasonal employment. It is why the project team is producing a national seasonal map for both the wild catch and aquaculture sectors. It will help to identify peaks and troughs for labour demand. Ultimately, a website could connect crews and workers with prospective employers in a similar manner to the Australian Government's harvest trail initiative, which aims to connect prospective seasonal workers with employers.

The project will also gain a better understanding of the barriers to a more mobile workforce, build a framework to address them, review an existing seafood industry knowledge transfer program (the European Union's Aqua Technology Transfer program), and investigate the pros and cons of the 457 visa system in comparison with a workforce exchange program.

Although direct and powerful competition for labour is one of the more obvious challenges confronting improved workforce efficiency, recognising the way in which seafood industry workers learn is another important aspect of the project. As such, the project has been designed to give those in the industry hands-on experience. The project is facilitating exchange opportunities where fishers work directly with others, which should prove an effective method for transferring valuable knowledge and skills.

For further information: Andy Bodsworth, 0439 602 769, andy.bodsworth@cobalt.net.au

Bringing salmon on heat a delicate affair

Project 2008/217 (Atlantic Salmon Subprogram) — Effect of temperature on reproductive development of maiden and repeat spawning Atlantic salmon: Understanding the basis for improved egg survival and quality

As seasons change, fish are stimulated to reproduce by changes in water temperature, a fact not lost on aquaculture enterprises looking to optimise spawning of their brood stock.

Fish reproduction is an oddly impersonal affair, with many species relying merely on changes in water temperature to trigger spawning. The idea, it seems, is to conserve energy, and reproduce only under conditions that favour the survival of hatchlings. Scientists are interested because it shows how biology co-opts the environment to ensure species survival.

However, for those in the business of aquaculture, the environmentally sensitive sex life of fish makes water temperature in seacages a major production issue. This is especially true wherever species are cultured away from their normal environments and outside their preferred thermal range. Of particular interest in Australia are the lucrative autumn-spawning salmonids — species such as Atlantic Salmon and Rainbow Trout.

So important is the issue that it has led to a research-driven approach to insulate yearly smolt production from the vagaries of climate variability. The FRDC is involved, funding a team of fish biologists and researchers working on the problem and unravelling the intricacies of salmon egg development, maturation and ovulation.

The oceanic range for Atlantic Salmon during egg growth is normally somewhere between 4˚C and 12˚C. In fact, temperatures above 4˚C are needed to trigger the hormones required for egg growth. But the researchers found that during an especially thermally sensitive period in February and March — when yolk proteins are accumulating in eggs — there is an upper temperature limit beyond which egg production is impaired (between 15˚C and 18˚C) and then shuts off (above about 18˚C).

Yet in Tasmania, cultured Atlantic Salmon are typically exposed to summer temperatures between 15˚C and 20˚C. The situation has its advantages; for example, faster growth rates that see fish come to market after just one sea winter in the cages. However, the peak temperatures coincide with the biologically sensitive February to March period. As a result, warmer-than-normal summer temperatures can potentially affect smolt production.

The situation is the inevitable by-product of growing Atlantic Salmon in the Southern Hemisphere where the warmer temperatures provide tremendous opportunity, but also require sophisticated management strategies.

This particular project is now in its second season and, so far, maiden and repeat spawners have shown the same fall in oestrogen, yolk sac protein production, egg quality, fertility and egg survival in response to high temperatures with one exception — that repeat spawners appear to show greater capacity for recovery from thermal insult.

This finding gives the industry another management strategy. Repeat spawning fish are a bit awkward to manage because they are bigger, but they may be worthwhile keeping, if they offer industry a 'second string to its bow' and it turns out they get consistently more robust responses from repeat spawning fish.

The issue going forward for industry is to predict increasing frequency of warmer-than-normal summers, as a result of climate shifts. Artificial hormone treatment may provide one solution to protect broodstock from thermal insult for key periods, but researchers will first need to ascertain whether it is technically possible.

So far researchers have already provided a number of options. But the intention is to look for as many strategies as possible to ensure a mix of options suitable to a broad cross-section of the aquaculture industry.

For further information: Ned Pankhurst, 07 5552 8033, n.pankhurst@griffith.edu.au

Smart designs prove win–win for fishers and fish

Project 2008/079 (Tactical Research Fund) — Design, build and test model Batwing Board CP2

Two innovations designed to improve catch quality and efficiency on commercial prawn trawlers have added environmental benefits, including reducing by-catch.

A radical change in design to the conventional prawn trawling otter board has resulted in a device that reduces by-catch of ocean bottom (benthic) material by 90 per cent and cuts trawler fuel consumption by about 20 per cent.

The Batwing otter board works in a way that causes substantially less seabed impact and towing resistance than conventional prawn trawling otter boards. (Otter boards are heavy rudimentary wings attached to trawl lines on either side of the trawl gear to keep it spread out during trawling.)

Conventional prawn trawling boards drag along at an angle of 40° to the tow direction, creating an effect like a grader blade on the seabed. Recognising that the boards' efficiency could only be improved by finding a way to operate them at a lower angle of attack, researchers set about work that would involve a radical change in rigging arrangement and design.

The result is a design where the angle of attack is reduced from 40° to 20° and instead of towing the heavy contact 'shoe' at the same angle across the bottom, the shoe of the Batwing board is aligned with the direction of tow — in a straight line — thus eliminating the scraping action and any serious disturbance to the sea floor.

In FRDC-funded trials comparing prototype (CP1) Batwing boards and traditional prawn trawling boards, the Batwing board produced half the drag and a 90 per cent reduction in the accumulation of benthic material in the net.

These proof-of-concept trials highlighted a few problems, now addressed in a second commercial prototype. The CP2 Batwing board potentially reduces towing resistance by 70 per cent compared with conventional prawn trawling otter boards. This translates to a reduction in fuel consumption of about 15 to 25 per cent, giving fishers a big incentive to use the Batwing board. It is also at least as user-friendly and cheap to build as conventional boards.

This year, the CP2 Batwing otter board was the runner up in the World Wildlife Fund Smartgear competition, which rewards innovative ideas for reducing by-catch. The $10,000 prize was presented at the World Fishing Exhibition 2009 in Vigo, Spain.

CP2 Batwing boards are soon to be trialled on a commercial prawn trawler in Moreton Bay, Queensland, and results will be analysed to assess the overall economic impact on the prawn trawling business of using Batwing boards. Meanwhile, the existing set of small CP2 boards will be trialled by Clarence River fishers working with NSW Fisheries researchers.

For further information: David Sterling, 07 3300 1105, djstgs@tpgi.com.au;
Neil Gribble, 07 4057 3728, neil.gribble@dpi.qld.gov.au

Better management could haul daily million-dollar gains

Project 2006/071 — Resource allocation

Experts agree that flexible fisheries management and clear performance objectives could deliver substantial triple-bottom-line benefits and produce annual gains exceeding $350 million without increasing catch volume.

FRDC-commissioned research, *Evaluating the Performance of Australian Marine Capture Fisheries*, estimates there is a gap of $350 to $450 million per annum between Australian wild catch fisheries' current performance and 'best use' outcomes. Report findings were outlined at the Australian Bureau of Agricultural and Resource Economics (ABARE) *Outlook 2010* conference.

The research showed fisheries management had improved in Australia, but that it could be better. The need for better management has been regularly identified, but converting this into real pressure for change has proven difficult.

The report highlights the urgent need for structural and management changes in Australian fisheries: Input costs trends show that we need a 2 to 3 per cent efficiency improvement every year just to stand still.

The FRDC research is believed to be the first performance evaluation in the world to jointly analyse commercial, recreational and indigenous customary fishing sectors. Researchers interviewed more than 70 national and international experts to gauge their views on Australia's fisheries management performance and experts were consulted individually and confidentially, enabling them to provide advice free of professional or organisational affiliations.

The evaluation recorded strong agreement as to fisheries management goals, with 98 per cent citing understanding community perceptions of what contributes to 'best use'; economic performance, balanced fisheries activities, environmental sustainability and inspirational management as key objectives. The researchers' summation of individual expert views provided an overall rating of Australia's performance at 5.8 out of 10, which showed 'fisheries management has progressed from poor to reasonable'.

The report also reveals a growing understanding of recreational fishers' importance, but shows assessment and data collection must improve. The report also emphasises that recreational fishers' rights and responsibilities 'must be better defined to strengthen partnerships with other users', and indicates the customary fishing sector's potential is poorly understood at a national level.

The experts rejected rigid top-down management systems, which are ineffective and generate conflict, preferring a flexible management supported by a sound framework of rights and responsibilities that generate trust and collaboration.

The FRDC-funded report provides a 'first generation' tool that enables users to assess their triple-bottom-line performance, establish goals valued by their communities, and chart their pathway to achievement.

Experts concluded that links between commercial, recreational and indigenous customary users with their Australian communities are immature at best and non-existent at worst. They advised that best performance must be built on trade-offs between competing uses and interests, and recommended incentive packages and a joint fisher-community alliance to recover the '$1 million per day' in foregone value and ensure jurisdictional processes are aligned.

The evaluation recorded strong agreement as to consolidating the opinions of individual experts, researchers identified the following priorities for change (in order of importance):

1. A more strategic and flexible approach to fisheries management including clear performance objectives for each fishery.
2. Efficient and transparent allocation of shares and property rights for all users (recreational, commercial and indigenous customary).
3. An ecosystem or multi-species approach to fishery management.
4. Increased participation and collaboration of all users in fisheries management and change implementation.
5. A documented harvest and management strategy for each fishery outlining ecosystem, biomass and target stock sustainability goals.
6. Economically sustainable fishery operations based on greater use of economic analysis to inform management decisions about fishing chain values and performances.
7. Better fishery data including fish stocks, mortality, total economic value, community views and other data to allow users to track performance.
8. Integration of recreational fishing into overall sustainability targets and fishery harvest strategies.
9. Education programs for all users and managers on best practice and techniques to achieve best performance.
10. Improved communication to inform the community about wild catch fisheries performance and resource status/conservation needs.

For further information: George Kailis (pictured below), gkailis@nd.edu.au

Safe and healthy working vessels

Project 2002/231 — OH&S National Extension

While vessel owners and skippers are aware of the majority of their state's marine safety requirements due to well-established vessel principles, the industry's knowledge, understanding and application of workplace safety legislation varies in each state. This project aimed to provide each state and the Northern Territory with a comprehensive set of occupational health and safety (OH&S) guidelines tailored to each jurisdiction's legislation and industry requirements.

OH&S documentation was developed, including each state's legislative requirements for workplace and marine safety, generic OH&S guidelines and fishery-specific guidelines based on the Western Australian Fishing Industry Council (WAFIC) OH&S code. The project also aimed to introduce the OH&S code into each state through workshops. This succeeded in some states and was partially successful in others. The uptake level was influenced by factors including the project's timing with regard to other industry programs, the level of resources of each state's peak body and the value the peak body and/or individual industry members placed on OH&S.

The level of awareness of OH&S has increased significantly across industry groups where workshops were conducted. Some states were not able to hold the workshops due to time constraints and lack of resources and further work is needed in this area. Further work is also needed to monitor and update the documentation and resources need to be allocated to assist states to implement the OH&S program. It was not always possible for the states to implement the program to coincide with this project and the milestones.

For further information: Tanya Adams, 08 9248 1405

Seafood Services Australia: The next generation (2007–2012)

Project 2007/203 — Seafood Services Australia Limited

The FRDC invests in Seafood Services Australia (SSA) to deliver the following outcomes:

- ¬ to develop environmental and market based processes to ensure supply through chain
- ¬ to develop processes and systems to enable Australian seafood businesses achieve and maintain access to markets
- ¬ to develop industry standards to differentiate Australian seafood products in key markets
- ¬ to provide seafood businesses with timely access to relevant knowledge and expertise to assist them to be globally competitive.

As part of SSA's agreed performance measures and ongoing funding, the FRDC undertook a 'mid-term' review of its activities and performance. The review was undertaken independently by Bronwyn Halliday & Associates and found that SSA had substantially met its agreed key performance indicators. The FRDC Board agreed to continue funding SSA to the end of the current project in 2012.

For further information: John Wilson, 02 6285 0400

Fuelling the energy efficiency debate

Project 2005/239 — Energy efficiency review

Throughout the fishing industry there is considerable hardship and concern connected with fuel costs and this has created a great deal of interest and debate regarding potential mitigation measures. A significant outcome of this project, targeted at improving energy efficiency in the industry, was linking high-level Australian engineering expertise to the task of scrutinising energy-intensive fishing and formulating initiatives to improve its economics.

The analysis focused on engine efficiency, alternative fuels and boat design (both hull and appendages). Information has been made available to industry on the prospects of utilising cheaper alternative fuels and efficiency issues associated with engines and boats and this has helped guide thinking along realistic themes and suppressed the propagation of suspect claims in relation to many dubious, highly-priced 'efficiency' products. The development of a conceptual framework of energy-related issues in Australian fisheries and professional networks formed by the project has allowed work to progress in other important areas such as propulsion devices, refrigeration and fishing (principally trawl) gear. A range of related research proposals was developed in response to the project, forming a list of prioritised initiatives for improving the economics of fishing. Tasks looking at alternative fuels for fishing have received funding from the FRDC and are well progressed.

For further information: David Sterling, 07 3300 1105

Other fuels evaluated

Project 2007/200 — Alternative fuels

This project has provided realistic evaluations of various fuelling options for fishing vessels in terms of cost, safety and emissions reductions so that fishing vessel operators can make better-informed fuelling decisions. Unfortunately, there is no straightforward solution to high fuel costs in terms of alternative fuels. Some net consumption reductions may be achievable with the addition of small quantities of liquefied petroleum gas or ethanol to the engine, while the engine still operates primarily on normal diesel fuel. Natural gas can replace most of the normal liquid fuel used in a diesel engine, but the benefits of reduced cost against the cost of implementation will depend greatly on future fuel pricing.

For further information: Laurie Goldsworthy, l.goldsworthy@amc.edu.au

An economic analysis of FRDC investment in market development and trade access

Background

The prices received by the fishing industry and paid by seafood consumers are determined by supply and demand as in any open market. Price-quantity and price-quality relationships exist in fish markets, although comprehensive analyses of the Australian market in this regard are scarce. In addition, the demand for Australian fish and hence its price will depend on the relative value perceived by consumers of other protein foods as well as of competing imported fish products. About 65 per cent of Australian seafood consumption is therefore imported, with about 35 per cent produced locally.

The consumer's willingness to pay for fish quality can be exploited through improving seafood quality standards and two projects in this cluster pursued this activity.

Four of the 20 projects in this cluster were associated with the promotion of seafood as a healthy food. Another project was also associated with enhancing demand for seafood by improving the image of seafood to consumers by presenting factual information regarding its environmental stewardship.

Another set of four projects was associated with understanding consumer markets, their purchasing patterns and what consumers require in their purchases of seafood. Associated with these projects was a project aimed at improving generic promotional processes.

Other investment by six projects was made in the area of market research and marketing for specific individual seafood types and two projects provided general information on markets and marketing. For example, assistance was given to specific industries with their positioning, domestic and export market research and promotion. The assistance was generally aligned to situations where the activity was market research or strategy formation regarding marketing — always at the industry level, not at an individual firm level. This was justifiable for the FRDC on the grounds that no industry marketing levy was in place. In fact, one project addressed the development of a marketing levy, which required the agreement by government to establish processes for collecting the levy.

Project investment

Following are the details of the 20 projects included in the cluster analysis. The projects in this cluster were those projects with final reports completed in the period from 1 July 2003 to 30 June 2008. This met the criteria for population definition in the guidelines for evaluation as communicated by the Council of Rural Research and Development Corporations.

Project number	Project title	FRDC $	Other stakeholders $	Total $
1994/136	*Handbook of Australian seafood: a guide to whole fish and fillets*	708,431	146,785	855,216
1999/331.90	*Seafood the Good Food II*. Additional copies and distribution arrangements	4,264	0	4,264
1999/371	Factors affecting the profitability of the Northern Territory Demersal fishery	12,860	33,750	46,610
2000/240	Operation of Seafood Services Australia — Technical information and advice	360,388	792,924	1,153,312
2001/309	Community perceptions of fishing — Implications for industry image, marketing and sustainability	104,065	26,681	130,746
2001/310	Developing a community communication plan and communication resources for the seafood industry	107,000	133,280	240,280
2002/233	Seafood Services Australia — Adding value throughout the seafood supply chain	3,860,000	3,449,341	7,309,341
2002/242	A health promotion program incorporating fish for withdrawal of antihypertensive drugs in overweight hypertensives	103,637	729,112	832,749
2002/404	The development of quality standards, product specifications, and a quality management framework to facilitate market expansion for farmed barramundi	23,320	5,120	28,440
2002/433	A survey of key merchandising requirements of Australian seafood retailers	6,200	0	6,200
2003/246	Development and incorporation of a nutritional software program into the existing Rob de Castella's *SmartStart to Life* school program	20,000	44,900	64,900
2003/418	Evaluation of the market for dried seafood (revised edition for Australian seafood industry) 2004	5,000	3,500	8,500
2004/249	*The retail sale and consumption of seafood in Melbourne*	175,000	37,000	212,000
2004/257	Develop and implement a communication strategy for the SmartStart Health Intervention Program to key stakeholders including the Australian and state government's departments of education and health	29,500	29,500	59,000
2004/413	Developing an Australian seafood strategy for export growth: Stage 1	10,000	229,000	239,000

Project	Project title	FRDC $	Other stakeholders $	Total $
2005/222	Fourth National Rocklobster Congress — Market development workshop	20,000	53,700	73,700
2005/321	*Ollie's Island* — Interactive edu-tainment program exploring sustainable production and consumption (pilot project)	30,000	1,620,500	1,650,500
2006/216.20	USA market development project — Establishing the USA market requirements	50,300	0	50,300
2006/239	Marketing and promotion levy for the Australian Prawn Farmers Association	27,390	0	27,390
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	15,000	90,000
Total		5,732,355	7,350,093	13,082,448

Attribution of benefits

Economic

1. Increased domestic demand.
2. Increased export demand.
3. Cost reduction along the supply chain.
4. Improved access to sustainable fish resources.

Environmental

5. Improved environmental performance.

Social

6. Food safety awareness and safety improvements in the seafood industry.
7. Health benefits from increased fish consumption.

Distribution of benefits along the fish supply chain

The demand driven private benefits will initially be captured by retailers and exporters. However, these benefits will be shared back along the fish supply chain including to fishers and aquaculture producers. The improved access benefits will impact initially on fishers but some will be passed on along the supply chain including to consumers. The cost reductions will be shared among the supply chain including fishers and consumers.

Lessons learnt for future investment

Lessons learnt from this analysis include:

- The introduction of a marketing levy could be reconsidered by the Australian Government and industry due to the apparent need for market and marketing investment by the seafood industries. This need has been met to a large extent by FRDC but this diverts resources away from R&D investment where marginal returns appear high.
- Authoritative information on the costs along the value chains for wild catch destined for domestic and/or export markets are not readily available and this hinders effective evaluation. It is understood some work that might contribute to this is currently being undertaken by the Seafood CRC.

Conclusions

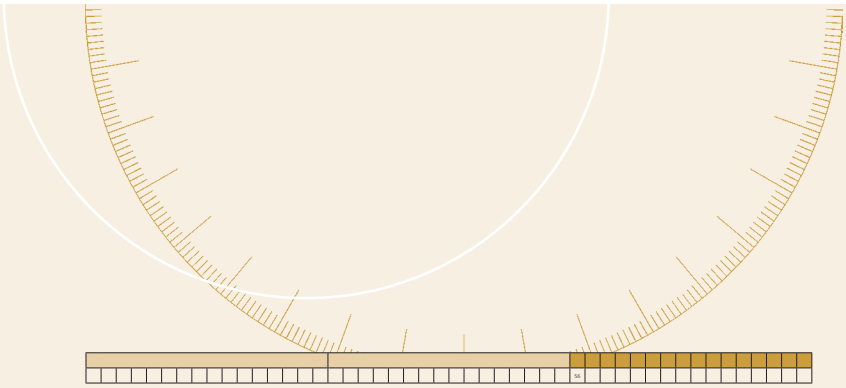
Investment was made in a total of 20 projects within the cluster with the FRDC's contribution approximating 45 per cent of the total costs involved with a disproportionate amount of the total investment occurring early in the period.

Seven benefits associated with this investment were identified. On the basis of the seven benefits, and equal weighting for each benefit, it could be concluded that public benefits to Australia could make up 43 per cent of the total benefits. If the subjective weightings provided are taken into account, then 38 per cent of the total benefits could constitute public benefits to Australia.

The principal benefit from the investment was its influence on the demand of Australian produced seafood in both domestic and export markets. Other principal benefits were associated with maintaining access to fishing resources and efficiencies along the supply chain.

Overall, the investment criteria estimated for the investment of $18.9 million (present value of costs) in the 20 projects in the cluster were positive with a net present value estimated at $38 million and a benefit cost ratio of 3 to 1, all estimated using a discount rate of 5 per cent (benefits estimated over 30 years from the final year of investment).


bioline



Program 3: People Development

People are the cornerstone of any industry. For the fishing industry, it is vital that it continues to produce 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 training for all levels of industry.

Projects funded under Program 3 primarily address the FRDC's Challenge 4 for People Development. However, this challenge is also addressed, as a secondary but very important element, by projects within Programs 1 and 2.

For a full listing of projects and expenditure for 2009–10 visit the FRDC website — **www.frdc.com.au**

Principal inputs

During 2009–10, $2.02 million (about 8 per cent of the FRDC's R&D investment) was invested in R&D activities within this program.

Strategic challenges for Program 3

Challenge 4: People development	Develop people who will help the fishing industry to meet its future needs.
Challenge 5: Community and consumer support	Increase community and consumer support for the benefits of the three main sectors of the fishing industry.

Summary of performance indicators for Program 3

Key performance indicator		Achievement
Fishing industry participation in the scholarship and bursary programs.	Ten participants complete programs	Achieved — Over fifteen scholarships and bursaries were awarded by FRDC.
Improved leadership skills of fishing industry people, researchers and other stakeholders.	Ten participants complete course	Achieved — Seventeen young leaders participated in the Advance in Seafood Leadership Course.
Media and industry reports of R&D attributable to FRDC investment.	Twenty reports per year	Achieved — In excess of 50 reports and articles produced.

Program 3 — Challenge 4 achievements and activities

The FRDC is continuing to invest in the future of the Australian seafood industry by focusing on its most valuable resource — its people.

Operating through its People Development Program, the FRDC is investing in a range of research, development and extension activities that will help address the fourth challenge of its five year RD&E Plan which is: *To develop people who will help the fishing industry to meet its future needs.*

The Corporation's investment is being delivered through a range of self-initiated activities, including personal and professional development opportunities, bursaries, conferences, awards, commissioned work and tenders. Projects are also regularly funded through the FRDC's annual open call for R&D applications and its tactical research fund.

MARTY PHILLIPS, RECIPIENT OF A NUFFIELD SCHOLARSHIP

ANNI CONN, 2009 NSILP GRADUATE WITH PAST GRADUATE KERRY STRANGAS

BEN TYLEY, RECIPIENT OF A NUFFIELD SCHOLARSHIP

JOEY McGIBBEN (LEFT) AND BO CARNE, 2009 NSILP GRADUATES

ADAM BUTTERWORTH, PAST NUFFIELD SCHOLAR

CLAYTON HARRINGTON, ARLP PARTICIPANT

ISLA FITRIDGE, PRIZE WINNER AT THE 2009 ASMA CONFERENCE

'Grass roots' ideas harvested in RD&E mission

Project 2009/300 (Empowering Industry R&D) — Developing an industry driven R&D model for the Australian fishing and seafood industry: partnerships to improve efficiency, profitability and performance

The success of a pilot program to gather 'grass roots' research and development ideas has led to a new project, which aims to both broaden the initial work and create an ongoing means for industry to address its RD&E needs.

The FRDC-funded 'Empowering Industry' project follows on from a project (2007/304) run during 2007 and 2008, which saw researchers meet with industry people from across Australia, discover their 'grass roots' R&D needs, and match them with an expanded base of service providers and funding sources. The pilot was successful in generating a wide range of industry-focused R&D, with 16 projects, worth more than $1.3 million, supported.

Based on that success, and with encouragement from industry, developing a mechanism to deliver a similar service to the broader seafood and fishing industry on an ongoing basis was deemed a model worth developing.

With that in mind, the FRDC supported the project's next stage — 'Empowering Industry RD&E: Developing an industry driven RD&E model for the Australian fishing and seafood industry — partnerships to improve efficiency, profitability and performance' (2009/300).

The project's aims are simple: to gather RD&E ideas from across all industry sectors, develop project partnerships between industry, link them with the most suitable RD&E providers and explore a range of funding sources beyond the FRDC. Importantly, the RD&E focus is on improving 'value' to industry, taking into account varying individual and sectoral needs, including efficiency, profitability and performance, as well as other characteristics, such as social aspects, enjoyment, wellbeing, amenity and cultural needs. To achieve this, the project will:

- re-engage with all sectors of industry
- identify national and regional industry RD&E needs
- identify and group industry RD&E priorities
- build a transparent process to link potential projects to service providers and funders
- build a model for developing and managing industry-focused RD&E.

The project also aims to use existing networks to find industry facilitators to spread the word and gather ideas. They include people from industry associations, the National Seafood Industry Leadership Program (NSILP), the Australian Rural Leadership Program (ARLP), SeaNet, FishCare, indigenous ranger groups and the Women's Industry Network Seafood Community (WINSC).

Following 50 meetings across the country during 2009, about 200 industry concepts, with noticeable synergies, have been identified across sectors and jurisdictions.

The next step is to run themed workshops, which will bring similar RD&E ideas together, discussed and specific RD&E projects developed. For example reducing water use in processing operations is just one of the RD&E needs raised by industry, but one that if successfully addressed, would have important and immediate effects — economically and environmentally.

For further information: www. empoweringindustry.com; Chris Calogeras, C-AID Consultants, 0401 692 601, info@c-aid.com.au; Ian Knuckey, Fishwell Consulting, 0408 581 599, fishwell@datafast.net.au

Choose fish for smarter children

Project 2006/312 — Omega-3 Centre development

Research is showing that the increasing consumption of omega-3-rich seafood is crucial in helping children reach their full potential.

Despite mounting medical evidence supporting the physical and mental health benefits of long-chain omega-3s — most readily supplied by oily fish — the reality is, according to the 2007 Australian National Children's Nutrition and Physical Activity Survey that nine out of 10 Australian children are missing out. The deficiency is jeopardising the development of children and increasing the risk of long-term health problems. Two serves of oily fish a week could provide Australian children with the long-chain omega-3s they need for brain development and general health and wellbeing.

Australian children have critically low intakes of long-chain omega-3, despite increasing awareness about omega-3's health benefits. There is compelling evidence linking long-chain omega-3s with heart health and the development of children's brains, vision and nervous systems. Omega-3s may also help with more immediate issues such as learning and behavioural difficulties and, potentially, address the increasing prevalence of attention-deficit hyperactivity disorder (ADHD) and asthma.

The findings were presented at the Australian Omega-3 Centre's annual symposium in December 2009. The symposium also heard about research into the benefits of fish-based omega-3 consumption by expectant mothers on the neurological development of children. The study involved more than 14,000 pregnant women in the United Kingdom and followed the development of their children. The results found a correlation between long-chain omega-3 deficiency in the diets of mothers and lower verbal IQ scores in their children. Children's verbal IQ scores were, on average, six points lower at eight years of age where mothers had consumed seafood-deficient diets during pregnancy.

Recommendations from the 2009 Omega-3 Centre consensus report on maternal and infant health include developing consumer-tested public health messages on the benefits of fish and long-chain omega-3s because the potential positive effects on child development outweigh potential disadvantages. One to two oily fish meals a week during pregnancy and while breastfeeding provides the recommended intake of long-chain omega-3s.

Oily fish such as Atlantic Salmon (fresh or canned), sardines and tuna are among the richest sources of long-chain omega-3s. Other sources include organ meats, such as brains, and bone marrow; eggs and lean red meat provide smaller amounts. There are also long-chain omega-3-fortified foods and fish oil supplements. While the Omega-3 Centre supports consumption in any form, making fish a regular part of the diet is one of the easiest ways to meet the recommended levels of 500 milligrams a day of combined long-chain omega-3s (DHA and EPA).

For further information:
www.omega-3centre.com

Proactive vision for the West's commercial fishers

Project 2008/308 — Australian Rural Leadersip Program

A proactive and well-respected fishing industry in Western Australia, which is not reliant on, nor the victim of, political decision making — that's Felicity Horn's vision and her participation in the Australian Rural Leadership Program (ARLP) is helping her to make this a reality.

For the past nine years Felicity (pictured below) has worked in the resource access program for the Western Australian Fishing Industry Council (WAFIC), the peak body for the state's commercial fishing industry. She is originally from Dongara, in mid-west Western Australia, where her family had a commercial Western Rocklobster operation.

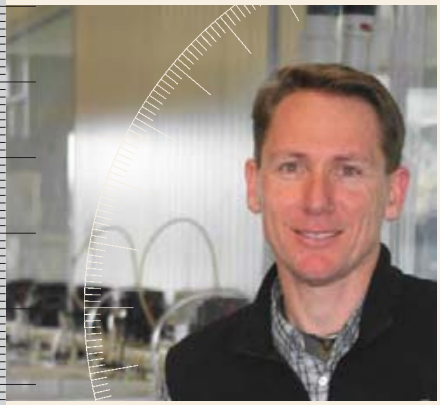
She chose to stay with the industry and with support from WAFIC and the FRDC was sponsored to participate in the 18-month ARLP. Each course involves more than 30 participants from diverse rural backgrounds, and this diversity is one of the program's strengths.

"You realise that the problems other primary industries face are strikingly similar to your own, whether it is the need to improve public perception, or surviving hardship caused by years of uncertainty. The fishing industry can be insular, so it has been valuable to draw from other industries' experiences."

The course involves several residential sessions throughout Australia, and one two-week overseas session, designed to focus on key national, economic, political, environmental, cultural and social characteristics of the country visited to appreciate how they differ from Australia. Participants meet people from all walks of life who are providing leadership at local, national and international levels and Felicity says many of them share similar traits. They are value-driven and have clear goals, they are tenacious and inclusive, and have both humility and integrity.

"Many of the people we met through the program didn't rely on government to solve their problems and emphasised that we have to take on the challenges ourselves." Felicity says the course has given her clearer direction about what she wants to achieve, including working more proactively with other sectors to resolve resource-sharing conflicts.

For further information: www.rural-leaders.com.au



Clams and scallops given a farming chance

Project 20007/315 — Nuffield Australia Farming Scholars

Clams and scallops offer Australia's aquaculture industry new opportunities, if technical issues related to hatchery cultivation and grow-out can be overcome. It is a potential option that newly awarded Nuffield scholar Tasmanian shellfish producer Ian Duthie plans to explore through his FRDC-sponsored scholarship. Ian is hatchery manager for Spring Bay Seafoods, an aquaculture company with 3000 hectares of marine leases off the east coast of Tasmania growing mussels and scallops. The company also processes and packages farmed abalone and oysters.

He will use his scholarship to study shellfish cultivation techniques because he believes that, in addition to the well-established farmed-oyster industry, there is potential for the farming of mussels, clams and scallops in Australia. "I think the opportunity to look at what is happening internationally in the cultivation and marketing of shellfish will provide a fresh approach to traditional Australian industry perspectives," Ian says.

Following the initial six-week program, the scholars go their individual ways to pursue specific study programs in the country or countries of their choice. In addition to the FRDC-sponsored scholarship, South Australian commercial fisher Ben Tyley and Queensland Barramundi farmer Marty Phillips (pictured on page 58) were both awarded Nuffield scholarships.

For further information: www.nuffield.com.au

Leadership the mission for industry's students

Project 2009/310 — National Seafood Industry Leadership Program: 2009–2011

Developing a national seafood 'trail' that circumnavigates Australia's vast coastline, a move that corresponds with the new food tourism movement, is one of the projects developed by 2009's National Seafood Industry Leadership Program (NSILP) graduates.

The tourism and business development initiative — which could see seafood businesses along the coast opening shopfronts and tours for the growing band of 'foodies' and other tourists — is the result of a 'mission' NSILP graduates decided on at the start of 2009's program. That mission, to improve communication within the Australian seafood community through promotion, education and awareness, was the means of helping the 17 participants from across Australia's fishing and aquaculture industry to further develop their representative and leadership skills.

The NSILP is a six-month people development course run by Rural Training Initiatives and funded by the FRDC, with Sydney Fish Market as a major sponsor. It focuses on providing members of the seafood industry with leadership skills that can be applied at a personal, business and industry level.

The NSILP is Australia's only national industry specific leadership program. It was designed with the seafood industry for the seafood industry. With FRDC funding, there are now more than 100 NSILP graduates, including people of all ages and from all sectors of the industry including processing, fishing, extension, exporters, importers, marketing, deckhands and employees.

The strategies developed by the graduates generated industry interest, which the 2009 graduates will continue to pursue. Graduates also had the opportunity at the third residential session, held in Canberra, to meet with the Federal Agriculture Minister Tony Burke and discussed their ideas and some of the challenges facing the seafood industry.

For the 2009 graduates, who can now reflect on their course, the NSILP was a valuable experience. Shalan Bray, an AFMA manager, encourages those with passion for the seafood industry to register for the course. "The program helps prepare participants to take on a range of tasks and challenges into the future and assists them in developing skills to be a future leader — we need more leaders in the seafood community."

Andrew Tobin, a James Cook University researcher and another 2009 graduate, agrees. "It is easy not to throw your hat in the ring, but believe me your future life as a leader will be simpler as a result of the skills learned, networks formed and friends to call on." For Malcolm Poole, Recreational Fishing Alliance of NSW chair, his new skills are already in use. "It seems nearly every day now I am able to link back something learned or gained from the leadership program. I am very thankful towards all who have made it possible for such an opportunity."

The NSILP continued in 2010, with the first residential session held in Tasmania from 30 March to 1 April. The second residential was held in Sydney from 29 June to 1 July and the third will be held in Canberra from 21 to 23 September. Members of the seafood industry who are interested in shaping the future of their community are encouraged to apply for the course.

2009 graduates

- Laura Best, Industry & Investment NSW industry development manager (pictured above at left)
- Shalan Bray, Australian Fisheries Management Authority manager
- Robert (Bo) Carne, Northern Territory Fisheries Indigenous development manager
- Anni Conn, aquaculture business manager
- Nick Danenberg, a University of South Australia and Seafood CRC PhD candidate (pictured at right)
- Bryan Denny, Commercial Divers Association
- Neil Garbutt, FRDC people development manager
- Wesley Jones, from the Australia National Sportfishing Association
- Zac Launay, a seafood business manager
- Joey McKibben, a diver

- James Moriaty, seafood processing and marketing manager
- Craig Murray, Sydney Fish Market quality assurance safety and payroll officer (pictured at centre in photo on previous page)
- Malcolm Poole, Recreational Fishing Alliance of NSW chair
- Simon Rowe, OceanWatch program manager
- Andrew Tobin, a James Cook University researcher
- Andrew Winzer, Western Rocklobster Council CEO
- Tobin Woolford, an abalone industry diver

For further information: www.ruraltraininginitiatives.com.au; Neil Garbutt, FRDC people development manager, 02 6285 0400, neil@frdc.com.au, www.frdc.com.au

Development scholarships and bursaries

The FRDC People Development Program offered a suite of programs, scholarships and bursaries to help build leadership, skills, networks and knowledge within the Australian seafood industry. During the year the FRDC announced a number of scholarships and bursaries, which included the following.

Indigenous Development Scholarships

In this category the FRDC awarded two grants to:

- Arthur McLeod (pictured) of Cultural Capital Investments and In-Ja-Ghoondji Lands Inc., Nowra
- Markalal Maymaru of Laynhapuy Homelands Association Inc., Northern Territory.

Both Arthur and Markalal will be working with host organisations to further develop their knowledge of aquaculture operations and business practices. These scholarships were jointly funded with the Department of Agriculture, Fisheries and Forestry.

Emerging Leader Governance Scholarship

Strong applications prompted the FRDC to award three partial scholarships, instead of the originally planned single scholarship. The winners were Len Olyott from Recfish Australia, David Ellis from the Australian Southern Bluefin Tuna Industry Association and Sam Ibbott from Marine Solutions. All three participated in the Australian Institute of Company Director's (AICD) Company Directors Course.

The Emerging Leader Governance Scholarship is just one of the scholarships on offer. The FRDC funds a range of scholarships, programs and bursaries aimed at helping to build leadership, skills, networks and knowledge within the Australian seafood industry. The winners of its 2009 round of scholarships and bursaries included the following.

FRDC Governance Scholarship for Women

The scholarship was awarded to Rhonda Farlow (formerly of Recfish Australia) and now in a similar role with the Clarence River Fishermen's Co-operative. Rhonda will be funded by the FRDC to undertake the AICD Company Directors Course.

Professional Development Scholarship

Sydney Fish Market food technologist, Meaghan Dodd (pictured) will see the latest trends and technology being used in fish processing and marketing when she visits the 9th Annual Value-Added Seafood Conference in London this year. Meaghan has been funded by the FRDC, in partnership with the Women's Industry Network Seafood Community (WINSC) Professional Development Scholarship, which will allow Meaghan to attend the conference in September 2009.

FRDC Visiting Fellow Bursary

As part of this year's bursary, the Shoalhaven Marine and Freshwater Centre at the University of Wollongong will host Alyssa Joyce. Alyssa is a Lief Eriksson Fellow at the Norwegian University of Life Sciences, and a Swedish Institute Fellow at Stockholm University. She is an ecologist who has worked closely with the shellfish industry and coastal communities to examine aquaculture siting issues in British Columbia. While in Australia, Alyssa will work with the New South Wales Government to identify key aquaculture sites in Jervis Bay.

International Travel Bursaries

This year the FRDC has awarded four international travel bursaries to support individuals to undertake travel for professional development. This year's recipients were:

- Paul Hardy-Smith — who will attend the International Aquaculture Biosecurity Conference and AquaNor 2009
- Mark Oliver — who will attend and chair the education session of the World Aquaculture Society's Asia Pacific Conference in Kuala Lumpur
- John Keane — who will attend and present at the American Fisheries Society's annual Larval Fish Conference in Portland, Oregon
- Ben Chuwen — who will attend and present at the 4th International Otolith Symposium in Monterey, California.

Program 3 — Challenge 5 achievements and activities

Appetite for Excellence — Byron to Botany Bay a culinary journey

Project 2009/316 — Appetite for Excellence

The Electrolux Appetite for Excellence Awards national finalists — chefs, waiters and restaurateurs for the 2010 experienced the full suite of primary industries as they travelled from Byron Bay in northern New South Wales down the coast to finish in Sydney. Following a gruelling state and national selection process the 19 finalists won the right to take their place on the tour.

FRDC, along with a number of the other RDCs, was once again a major sponsor of the regional produce tour. In addition to visiting beef, dairy, horticulture and wine producers FRDC arranged for the finalist two special seafood stops.

The first seafood stopover was Armstrong Oysters on the Camden Haven River. A company with over 40 years experience, second generation oyster farmer Brandon Armstrong and fellow oyster grower Mark Bulley (also NSW Oyster Association past president) were the perfect hosts for the group.

Mark Bulley, believes that "the Appetite for Excellence program and in particular, the RDC sponsored industry tour, is truly a great initiative. It gives opportunity for all those involved in food process/production from 'paddock to plate' to meet with the food industry (chefs and waiters) and share first-hand the vagaries of their respective industries." He went on to add, "This type of event should continue to be supported because it is invaluable to our industry. Individually it is hard to run these events bringing many chefs together, but as part of a larger group it makes perfect sense."

The second stop was the Coffs Harbour Fisherman's Cooperative. Shane Geary, Seafood Operations Manager at the Coop was on hand to showcase some of the best seafood the group had ever seen. Highlighting how fresh the fish was the fact the boats were just arriving and unloading. Shane provided a great overview of the diverse range of seafood that gets landed into Coffs and when it's at its seasonal best.

The seven-day tour culminated in Sydney with a 'hunt and gather' dinner at the Electrolux showrooms. The concept behind the dinner was for invited guests to participate in an interactive evening where they participated in creating a dish with the finalists. It extended the impact of the tour by allowing the finalists, not only mingle with media and key stakeholders but also talk about and showcase the produce they had seen.

As the name suggests 'hunt and gather', the core ingredients (seafood, beef, pork, vegetables, cheese) had been sourced by the group on their travels. Shane from the Coffs Coop had recommended both the Ocean Jackets and Cuttlefish as they were both in season.

The Byron to Sydney regional produce tour is the fifth run in conjunction with the Appetite for Excellence program.

For further information: Peter Horvat, 02 6285 0414, peter.horvat@frdc.com.au

Australasian Aquaculture Conference 2010

Project 2009/303 — Australasian Aquaculture 2010 to 2014

Australasian Aquaculture 2010 was held from 23–26 May 2010 at the Hotel Grand Chancellor, Hobart, Tasmania. It is the largest conference and trade show for aquaculture and related industries to be held in the Asia Pacific in 2010 and has built upon the success of the previous biennial conferences. The event targeted a broad range of attendees and covered the full chain of aquaculture: science, research and development, students and industry — from hatchery to harvest, trade and marketing, feed, training and connecting with consumers.

The event was an outstanding success with over 900 in attendance. Delegates attended from over 30 countries, with 21 per cent of participants attending from abroad.

The 2010 committee made a commitment to bring 'fresh' ideas and incentives, challenging presenters, unprecedented networking opportunities and an interactive trade show. The conference program was well received and consisted of 49 sessions, with over 200 presentations — five concurrent sessions on days one and two, with six concurrent sessions being offered on day three. The program focused on main themes ranging from business, trade and marketing, climate change, aquaculture technology, education, policy as well as a focus across various species.

The trade show consisted of 70 booths, 17 of which were international companies. Although slightly smaller than anticipated the trade show was a huge success with exhibitors highlighting the latest innovations and services to the industry. Over 40 volunteers staffed the conference, made up from host agencies, sponsors, aquaculture students and event management students. All volunteers did a remarkable job in ensuring the conference ran smoothly and the feedback received was fantastic.

For further information: Peter Horvat, 02 6285 0414, peter.horvat@frdc.com.au

Seafood Directions Conference 2010

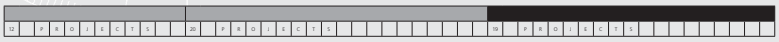
Project 2008/331 — Seafood Directions 2010: Connecting the supply chain

Seafood Directions 2010 took place from 14–16 April 2010 in Melbourne, Victoria and was attended by over 150 delegates. This was fewer than previous year's conferences and it was thought the global financial crisis impacted people's ability to attend.

The program of Seafood Directions 2010 was designed specifically to encourage delegate participation, discussion and debate and each presentation was followed by Q&A sessions to fulfil these objectives. A facilitated panel discussion was designed to examine the specific issues of the 'Future of seafood' and viable solutions. Presenters were invited from a range of backgrounds both nationally and internationally; from fisheries managers to fishers, aquaculturalists, retailers, chefs, auditors and scientists, in order to ensure the Conference appealed to a broad audience from across the seafood industry.

From evaluations of Seafood Directions 2010 the Conference Organising Committee concluded that the Conference had been successful in meeting the needs of the seafood industry nationally by providing an opportunity for exploration, debate, development of issues and challenges currently facing the industry. The organising committee is cognisant of the low participation rate of 'grass roots' fishermen. The next committee will also find 'grass roots' attendance a challenge and encouraged the organisers for the next conference to focus on increasing industry participation.

For further information: Peter Horvat, 02 6285 0414, peter.horvat@frdc.com.au



An economic analysis of FRDC investment in knowledge extension — workshops and conferences

Background

Much of the investment in this cluster of projects was associated with capacity building for both industry and research. As such this investment was part of FRDC's smallest program (Program 3), called the People Development Program.

The goal of the FRDC's People Development Program is to invest in research and development activities that develop the capabilities of the people to whom the industry entrusts its future. The program covers investment in such activities as personal and professional development opportunities, scholarships and bursaries to build leadership, skills and capabilities, networks and knowledge, knowledge transfer and adoption, as well as workshops, conferences and awards.

Workshops and conferences are a mainstream aspect of the R&D environment. The sharing of knowledge and the interaction between research personnel are fundamental to knowledge generation and capacity building. Workshops and conferences are avenues whereby such activities occur and have been supported strongly by FRDC.

FRDC-funded workshops and conferences are not only a realm for scientist and researcher exchange but also among industry personnel for industry management and policy purposes. Of major importance as well is the facilitation of communication between industry and science that has positive knowledge application outcomes.

Apart from capacity building benefits that have implications for future management and operations of the fisheries and research industries, these investments have delivered industry benefits in the shorter term. These benefits have been delivered via facilitation of adoption of improved management practices between members of individual fishing industries as well as between different fishing industries and fisheries. There have also been some benefits from improved communication and market and policy development for specific industries and more broadly across the fishing industry as a whole.

Project investment

Following are the details of the 19 projects included in the cluster analysis. The projects in this cluster were those projects with final reports completed in the period from 1 July 2003 to 30 June 2008. This met the criteria for population definition in the guidelines for evaluation as communicated by the Council of Rural Research and Development Corporation Chairs.

Project number	Project title	FRDC $	Other stakeholders $	Total $
2000/303	Seafood Directions 2001 — Second biennial national seafood industry conference	45,000	185,000	230,000
2001/306	Australian Society for Fish Biology (ASFB) workshop: Towards sustainability for data imited multi-sector fisheries	20,000	41,110	61,110
2002/306	Aquafest Australia 2002 — National aquaculture conference and trade exhibition	20,000	300,000	320,000
2002/307	Second National Abalone Convention 2003	20,000	165,000	185,000
2002/315	An international conference on governance of deep-seas fisheries	19,964		19,964
2003/300	Molluscan Fisheries and Aquaculture, World Congress of Malacology, Perth 2004	15,000	130,000	145,000
2003/301	Seventh International Conference and Workshop on Lobster Biology and Management	20,000	60,500	80,500
2004/102	FRDC sponsorship of the spatial management, conservation and sustainable fisheries workshop	3,857		3,857
2004/302	Seafood Directions 2005	64,575		64,575
2004/303	Contribution to the organisation and publication of ASFB 2004 Workshop entitled the *National Symposium on Ecosystem Research and Management of Fisheries*	15,000	30,000	45,000
2004/304	Third National Prawn Fisheries Conference, Cairns 2004	15,701	100,500	116,201
2004/305	Support for 15th International Pectinid Workshop	5,000	49,600	54,600
2004/306	Fourth International Fisheries Observer Conference	20,000	122,000	142,000
2005/302	International Aquaculture Conference 2006	80,000	118,000	198,000
2005/307	International symposium on cephalopod lifecycles: Biology, management and conservation	20,000	79,125	99,125
2005/314	Sharing the Fish Conference 2006	20,000		20,000
2005/319	Sponsorship for the 11th international symposium on veterinary epidemiology and economics	4,545		4,545
2006/303	Second national prawn fisheries workshop, Adelaide, February 2007	20,000	90,000	110,000
2007/302	Fifth National Rocklobster Congress — Growing the future	20,000	58,067	78,067
Total		**448,642**	**1,528,902**	**1,977,544**

Benefits

The support for these workshops, conventions, symposiums and conferences has helped deliver a range of capacity building benefits to the seafood industry, through exchanges associated with fisheries science, exposure to other industries, and market development and policy making associated with fisheries and seafood. These capacity building benefits, including sharing of knowledge and experiences, have been due to improved communication between various sectors.

Attribution of benefits

Economic

1. Higher returns to future R&D investment (e.g. improved certainty and continuity of research funding; better targeted research).
2. More effective management of wild catch fisheries and aquaculture industries leading to industry cost reductions.

Environmental

3. More effective resource and environmental management of wild catch fisheries and aquaculture industries.

Social

4. Increased social equity with regard to property rights and allocation of resource use.
5. Enhanced social capital via improved industry/community cohesion of fisheries, aquaculture communities and the general community.
6. Enhanced career satisfaction of Australian scientists.
7. Improved capacity of Australian and overseas science effort.

Distribution of benefits along the fish supply chain

In addition to scientific capacity building, 10 of the projects were considered to provide industry benefits. The principal sectors where such benefits were viewed as being significant were all of aquaculture, and the abalone and lobster wild catch industries. While some other sectors received some industry benefits, most of these were considered relatively low impact and difficult to value.

It was assumed that value growth or protection of the current value of each industry was influenced to a small extent by these conferences/workshops through the mechanisms previously described. The annual gains were assumed to apply to the five years after the conference or workshop was held.

Lessons learnt for future investment

Lessons learnt from this analysis include:

- ¬ It would be helpful to future evaluations if the FRDC project management system were able to more easily extract funding information by financial year across a range of individual R&D areas. While some capacity to do this does exist, the system could be made more friendly by requiring project managers to provide a wider range of category inputs at the time of contracting or final report assessment. Such an initiative may prove valuable not only in evaluation but also in planning and reporting.
- ¬ If leverage factors for projects in different R&D areas were available at an R&D area level (for both FRDC project funding and for the national context), they may be important in assessing the FRDC current and prospective roles in different areas and where public benefits are manifest but where funding is difficult to attract.
- ¬ A third observation noted is that the projects in this cluster do not necessarily address any of the key performance indicators in the current RD&E Plan.
- ¬ Finally, in the interests of addressing the marginality issue, it could be of interest for the FRDC to document the workshops and conferences not supported and the criteria on which funding decisions were made. Such a principle could apply also to project selection/rejection in other R&D areas.

Conclusions

Investment was made in a total of 19 projects within the cluster with the FRDC's contribution approximating 20 per cent of the total costs of investment.

Ten benefits associated with this investment were identified. On the basis of equal weighting for each benefit, it could be concluded that public benefits to Australia could make up 67 per cent of the total benefits, the remainder being industry benefits. If benefits were subjectively weighted, then public benefits would contribute 58 per cent of the total.

One important benefit delivered by the investment was the greater focus and cohesion in addressing industry problems and solutions resulting in efficiencies along the supply chain and improved policy and market development for a number of wild catch and aquaculture industries.

A second important benefit associated with these projects has been the building of additional scientific capacity which has led to an increased rate of innovation, ideas tested earlier then otherwise, project proposals that better reflect industry needs, and improved collaboration among researchers. Of the 19 projects in the cluster, at least 17 projects would have provided such benefits.

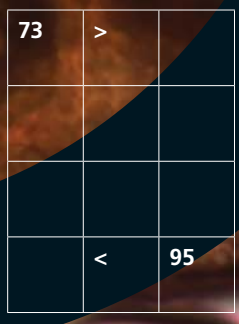
Overall, the investment criteria estimated for the total investment of $2.9 million (present value of costs) in the 19 projects in the cluster were a present value of benefits of $7.1 million, a net present value estimated at $4.2 million, and a benefit cost ratio of 2.5 to 1, all estimated using a discount rate of 5 per cent (benefits estimated over 30 years from the final year of investment).

IT'S JUST A MATTER OF SCALE(S)

The FRDC and the National Aquaculture Council have set an annual harvest target for seafood aquaculture of 100,000 tonnes, double the production of 2003–04.

Report of Operations

Part 3: Management and accountability and corporate governance



Program 4: Management and accountability and corporate governance

Planned outputs for this program are focused on continually improving the FRDC management and accountability activities. Each year, information on explicit planned outputs is provided in the annual operational plan. Since these outputs contribute to the planned outcomes of the three R&D programs, they are crucial to the FRDC's effectiveness and efficiency. The FRDC's ISO-certified quality management system encompasses all these activities.

Most Program 4 outputs do not lead directly to the FRDC's outcome but enhance the effectiveness to which Programs 1–3 are delivered.

Principal inputs

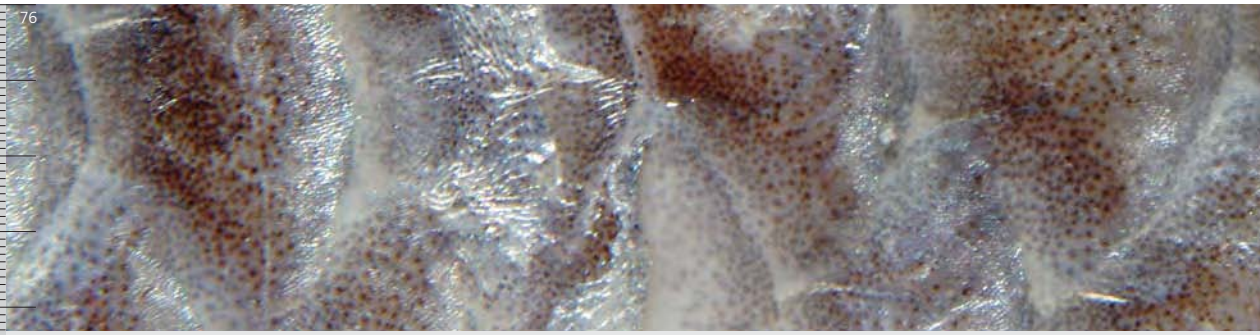
During 2009–10, $3.67 million was invested in activities within this program, in addition $0.80 million was spent on communications activities.

Summary of performance indicators for Program 4

Since the management and accountability outputs of Program 4 contribute to the planned outcome of the FRDC RD&E programs, they are crucial to the FRDC's effectiveness and efficiency. These outputs are outlined on the following under the headings:

- Business strategy and planning
- Information management systems
- Corporate communications
- Risk management
- Quality system
- Human resources management
- Finance and administration
- Corporate governance.

Performance indicators	Target	Achievement
Maintain ISO9001:2008 accreditation.	100%	FRDC maintained ISO 9001 accreditation following an external audit.
Submit planning and reporting documents in accordance with legislative and Australian Government requirements and timeframes.	100%	Achieved — All corporate documents submitted according to required timeframes.
Implement best practice governance arrangements to promote transparency, good business performance, and unqualified audits.	100%	Achieved — FRDC received unqualified Audit report for 2009–10 Financial Statements. In addition see overview of Walter Turnbull report on FRDC efficiency on page 76.
Minimise administrative costs as a percentage of total expenditure.	Under 15%	Achieved — FRDC administrative costs was 12.3% in 2009–10.
Demonstrate the benefits of R&D investments by positive benefit cost analysis results.	100%	Achieved — See evaluation report on page 21.



FRDC efficiency review

In February 2010, Walter Turnbull (specialists in accounting and corporate advisory services) reported to the FRDC Board following the completion of an efficiency review of the organisation.

The objectives of the review were to:

- identify and recommend changes in initial selected areas of operation to deliver achievable and realisable reductions in cost of operation
- develop a prioritised program of areas for further detailed review.

The first stage has been completed by conducting an initial scan across the FRDC business comprising:

- interviews with key staff and a review of policies, procedures and related documentation
- development of a high level cost model.

Walter Turnbull's report addresses the first stage of a two-stage process following an initial high level review across the FRDC.

Assessment of current service delivery

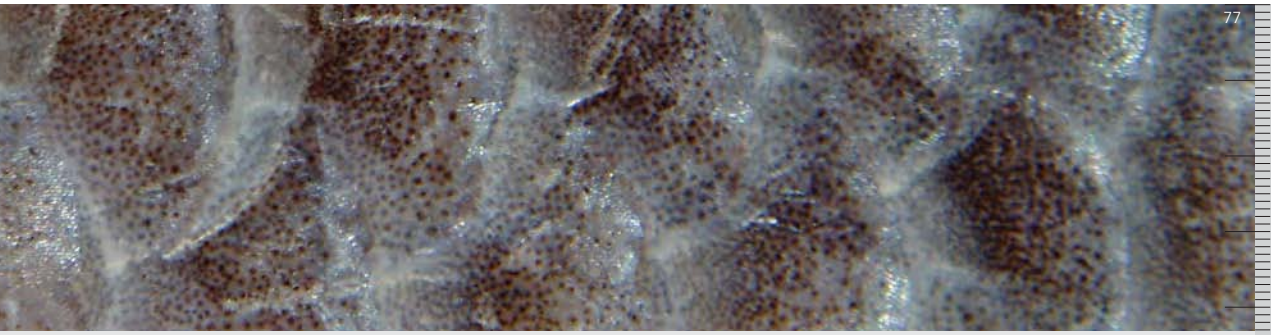
The FRDC comprises a small group of people managing a complex business environment for a diverse range of stakeholders.

Walter Turnbull's initial review found that the FRDC was staffed by a small, tight knit group of enthusiastic people who are passionate about the role and success of the organisation.

Walter Turnbull's experience indicates that the overall management of the business at a cost ratio of less than 15 per cent sits comfortably with better practice for an organisation of this size.

Aside from the five people in Program Management, they noted that the organisation is very lean with all aspects of the business being conducted by a very small group of six to seven individuals. They reported that is unlikely it could be done with less staff without compromising core business functions.

Staff unpaid overtime (defined as hours being worked beyond 40 hours per week) was estimated in earlier preliminary work at 135 hours per week, at a notional cost of approximately $700,000 per year.



Conclusion and recommendations

The FRDC provides specialist research and project management services to a geographically diverse set of clients and stakeholders. Walter Turnbull noted that as a small team providing a wide range of services, it would be difficult to reduce the headcount and make significant changes to cost structure without impacting on the delivery of core services. They went on to say that to do this at a time of uncertainty about future funding and speculation about 'harmonisation' would probably be imprudent and perhaps premature.

Walter Turbull however, did comment that there is an ongoing need to balance the use of limited resources between the effective and efficient delivery of core business functions and services while assessing and testing other opportunities which will grow additional revenue streams and business opportunities. The challenge for the FRDC is to achieve both; that is, to continue to prepare the organisation for the changing future but without extending the reach of the organisation too fast or at the risk of compromising delivery of core business services.

They reported that while the FRDC is providing effective and efficient services in most aspects of the operation there are a number of areas discussed in the report that warrant further investigation as these may lead to a reduction in the overall cost of operation.

Specifically, Walter Turnbull recommended further investigation into:

- program management and stakeholder consultation
- Board support
- communications
- travel
- information systems and technology.

Finally, while not part of the review, looking a little into the future, Walter Turnbull noted that the FRDC may benefit from the introduction of some form of shared services program with like-minded RDCs. They consider that this approach is likely to provide the most significant return on investment through reduced cost and economy of scale and, but like all outsourcing and shared services initiatives — there is a need to ensure internal processes and efficiencies are achieved first.

Any proposal for sharing services should be subject to rigorous benefit cost analysis and should only proceed where the analysis indicates material savings to the organisations involved, rather than assuming that shares services will automatically deliver savings and/or efficiencies.

Management and accountability

Business strategy and planning

FRDC strategic planning and reporting documents (comprising RD&E Plan, annual operating plan and annual report) were completed and presented within their duly legislated timeframes to the Minister for Agriculture, Fisheries and Forestry. In addition, the annual report was considered by FRDC's three representative bodies. It was presented at the annual general meetings of Recfish Australia (19 September 2009) and the Commonwealth Fisheries Association (15 September 2009); and at the Board meeting of the National Aquaculture Council on 31 August 2009.

Over the course of the year FRDC directors and staff worked together to develop a corporate plan for the Corporation. The plan aims to identify the key issues that face the FRDC, and outline a work program to minimise or mitigate against negative risks and take advantage of opportunities.

To increase the effectiveness and ensure the views of stakeholders are heard, the FRDC Board and staff use a range of mechanisms. These include Fisheries Research Advisory Bodies (FRABs), sector industry bodies, government and other R&D corporations through the Council of Rural Research and Development Corporations' Chairs.

Fisheries Research Advisory Bodies

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 2009–10 funding round approximately 95 per cent of all open call applications were submitted through, or reviewed by, the FRABs.

The FRABs represent all sectors of the fishing industry, fisheries managers and researchers, and most also include environmental and other community interests. Their Chairs in 2009–10 are listed on the opposite page.

Chairs of FRABs 2009–10

Commonwealth	Mr Ian Cartwright
New South Wales	Professor Steven Kennelly
Northern Territory	Mr Ian Curnow
Queensland	Mr James Fogarty
South Australia	Professor Anthony Cheshire
Tasmania	Mr Ian Cartwright
Victoria	—
Western Australia	Ms Anna Cronin

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

Sector industry bodies

The FRDC has continued to build partnerships with individual industry sectors. These partnerships offer both parties a number of advantages. For industry they provide more involvement in determining and undertaking R&D. For the FRDC they provide a more certain flow of funds and a greater understanding of the fishing industry.

Other consultation structures

On 7 April 2010, the FRDC ran a FRAB and stakeholder workshop in Canberra to discuss a number of issues including the new structure for its RD&E Strategic Plan, proposed changes to the application funding process and the development of a new Extension and Adoption program.

In addition to the Corporation's fundamental operating philosophy of openness and accountability to stakeholders, a number of other structures reinforce effective and ethical performance by the FRDC. They include steering committees at project and subprogram level, conferences, workshops and meetings.

Information management systems

OmniFish and FRDC's online application program FishNet are at the heart of FRDC processes and constitute a fully integrated on-line funding application system, and project and financial management system.

In 2009–10 the FRDC has upgraded its IT infrastructure — hardware and software. These upgrades will ensure the FRDC remains at the leading edge of technology. Key changes that have been made include implementing the latest Microsoft Windows 7 and Office Suite 2010. To underpin the functionality of the key systems, OmniFish, the databases have been upgraded to the latest version of SLQ server 2008. In addition a new Storage Area Network has been implemented along with testing of phase one of the disaster recovery plan.

In the next 12 months FRDC looks to implement:

- new Active Server Directory (basically upgrade to the latest virtual software)
- new security firewalls
- Voice Over Internet Protocol
- SharePoint 2010 upgrade
- phase 2 of disaster recover testing.

Quality system

The FRDC is a certified AS/NZS ISO 9001:2008 organisation and undertakes both internal and external audits annually with a recertification audit of its quality system triennially. The last external quality audit was completed on 13 October 2009 and provided valuable information to feed into the FRDC's monitoring and continual improvement processes. The next major re-certification audit is scheduled for September 2010.

The FRDC aims to meet or exceed the expectations of its stakeholders and organisations with whom it does business and operates on a continual improvement philosophy. The FRDC's quality management system encompasses the features of a service charter.

Corporate communications

Communication is integral to how the FRDC does business. As part of the consultation in developing the FRDC's RD&E Plan 2010–2015 industry identified extension and adoption (E&A) as a high priority. As a result, the Corporation has focused on developing a new approach towards funding E&A activities and during 2010–11 will start building the framework that will enable the best possible delivery of E&A activities for the fishing industry.

During the year, the FRDC sponsored season 11 of the television series *Escape with ET*. This partnership provides a strong vehicle through which the FRDC can communicate to the broader Australian community about the breadth and value of fisheries research being undertaken. During season 11, the FRDC developed 12 new stories on fisheries R&D projects. These included: lifecycle of Barramundi, omega-3 fatty acids, climate change, fish tagging and Atlantic Salmon aquaculture.

In 2009–10, the FRDC's *FISH* magazine was again a major tool for communicating with industry and stakeholders. It provides a vehicle for the FRDC to deliver and extend information on R&D projects that are both underway or have been finalised. The publication is now the leading fisheries research magazine in Australia and has gained widespread recognition for its quality. However, FRDC continues to look for opportunities to improve and the stakeholder research identified some areas where this could be achieved. In the coming year the FRDC aims to grow the distribution from 14,000 copies by 10 per cent increasing the coverage with industry members.

The FRDC website was promoted widely over 2009–10, which saw over 60,000 visits; an increase over the previous year in the number of people visiting the website. The main feature added to the site this year was the inclusion of streaming video from the *Escape with ET* series. In 2010–11, the FRDC will complete a review of R&D final reports to ensure that wherever possible these are available for free download from the website — **www.frdc.com.au**.

Another key activity in 2009–10 was the maintenance of industry relationships that underpin the FRDC's partnership approach to R&D. Staff maximised their time and opportunities by networking with researchers, industry and government colleagues at many meetings over the course of the year.

Risk management

There was no incidence of fraud during 2009–10.

The Board reviewed and approved a revised 2009–10 risk management framework at its February 2009 meeting. All staff participated in an internal risk workshop on 4 December 2009 which was used to update the Corporation's risk register. Additionally, the Board reviews the highest ranked risks at every meeting.

The FRDC participated in Comcover's Risk Management and Benchmarking Survey 2010 which is conducted annually and provides an independent review of the FRDC's existing risk framework, involving staff surveys, a review of the documentation and on site interviews.

FRDC achieved a rating of 7.3 against the 10 criteria outlined in Comcover's *Better Practice Guide — Risk Management*. The average for peer group agencies (as defined by Comcover) was 6.1; compared to the average for the total 130 agencies evaluated which was 6.3 out of 10.

Risk management is incorporated into FRDC activities in accordance with its risk management policy, which is integrated into the Corporation's 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 in May 2002, which seeks to minimise the likelihood and impact of fraud. The FRDC also participated in an Australian Institute of Criminology survey during the year.

Indemnities and insurance premiums for officers

The FRDC is required by the Australian Government's self-insurance provisions to use Comcover for its insurance needs. Comcover's confidentiality requirements prohibit the release of information on the nature and limits of liabilities covered and the amount of contribution paid.

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

Finance and administration

The 20 August 2010 audit report by the Australian National Audit Office confirmed that the FRDC's 2009–10 financial statements gave a true and fair view of the financial position of the Corporation and there were no findings associated with the audit.

The FRDC and DAFF are jointly seeking legal advice on the interpretation of s.30A of the PIERD Act. Currently, there is a lack of clarity around the amounts that can be matched by the Australian Government under the Act. Resolution of this matter may result in the need to recognise prior years' debts or liabilities (either to DAFF or to the FRDC). At this stage of the process, these amounts are not yet quantifiable; but in the interests of transparency the FRDC is taking the conservative step of disclosing the issue.

The FRDC has continued to build partnerships with individual industry sectors. It currently invests in and partners entities such as Southern Rocklobster Ltd, Australian Southern Bluefin Tuna Industry Association, Tasmanian Salmonid Growers Association, Australian Prawn Farmers Association and the Australian Barramundi Farmers Association. These partnerships offer both parties a number of advantages. For industry they provide more involvement in determining and undertaking R&D. For the FRDC they provide a more certain flow of industry funds and ultimately a greater understanding of the fishing industry.

A sample of the sectors that have contributed significantly to the maximum matchable contribution is shown in Table 4: Industry contributions, maximum matchable contributions by the Australian Government and returns on investment, 2009–10 (page vi).

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. During the year ASCo has been finalising an agreement with Incitec Pivot to produce the organic fertiliser Biophos.

Liabilities to staff

The FRDC provides for liabilities to its staff by ensuring that 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.

See also Note 8 of the financial statements (page 130).

Agreements and contracts

Each year the FRDC engages companies, research institutions, and government agencies to undertake research. The process for applying for funding is clearly outlined on the Corporation's website. Each organisation selected is directly engaged under contract for that project. A list of projects approved by the FRDC Board is published in *FISH* magazine and is available on the website — **www.frdc.com.au**

Consultancy services and selection of suppliers

During the year, the FRDC engaged six 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.

Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	DLA Phillips Fox Legal advice $22,370.00
Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	Strategic Fitness Noosa Pty Ltd Information technology advice $82,885.00
Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	Blake Dawson Legal advice $156,375.45
Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	Funzione Pty Ltd Information technology advice $78,815.00
Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	Pacific Project Management Strategic development and writing services $38,100.00
Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	Origin consulting Review services $22,272.73
Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	Oakton AA Services Pty Ltd Accounting services $34,443.00
Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	Forestier & Co Interiors Quality management system advice $27,562.50

When selecting suppliers of goods and services, the FRDC follows its procurement procedure — which seeks to achieve value for money and to deal fairly and impartially. 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.

Human resources management

The FRDC sets strategic directions with key stakeholders, then directly engages partner organisations from all over Australia to undertake the (R&D) activities. As a result, the Corporation has linkages to many research organisations across Australia. This approach to project management provides the FRDC with a great deal of flexibility, but at the same time gives it the capacity of an organisation many times its size.

To put this into perspective, the FRDC currently has over 100 partner organisations that employ over 200 principal investigators, and many more researchers, communicators and technicians — not to mention the hundreds of industry people who work on numerous projects.

Staff

In 2009–10, the FRDC operated with 12 full-time-equivalent staff members (on average) and there were no staff changes. The FRDC staff are the Corporation's most important resource and a key factor in the ongoing success of the organisation.

All staff are employed under terms and conditions determined by the FRDC. As part of ensuring staff activities align with the organisation, each staff member has in place a Performance Appraisal and Development plan (PAD). The agreement outlines the key areas each staff member will focus on, and the key activities to be undertaken, to assist the FRDC deliver its outcomes.

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 Corporation has a code of conduct that is appropriate to the Corporation's structure and activities and complies with division 4 of the *Commonwealth Authorities and Companies Act 1997* (CAC Act), to which all directors and staff are required to adhere. New directors and staff are briefed on the code during induction training.

Occupational health and safety

No injuries occurred on FRDC premises during 2009–10.

The FRDC is committed to providing a safe and healthy environment for all staff, contractors and visitors to its workplace. The FRDC 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 *Occupational Health and Safety Act 1991* (OH&S 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 Health and Safety Management Arrangements (HSMAs) Policy, has been developed in accordance with the requirements under 16(2)(d) of the OH&S Act in consultation with FRDC's employees. The FRDC also recognises that the continued reviewing and improvement of its health and safety management system makes good sense legally, morally and from a business perspective.

Comcare Australia is responsible for worker's compensation insurance coverage within the Corporation. The insurance premiums are levied each year based on the level of salaries and wages costs and experience in claims made by the employees. Comcare also assesses compliance with the OH&S Act, associated regulations and approved codes of practices. No injuries occurred on FRDC premises during 2009–10.

Section 74 of the *Occupational Health and Safety Act 1991*

Section 74 of the OH&S Act sets out requirements to be included in the Corporation's annual report.

Statistics of any accidents or dangerous occurrences during the year that arose out of the conduct of undertakings by FRDC that are required the giving of notice under Section 68.	¬ No injuries occurred on FRDC premises during 2009–10.
Details of occupational, health and safety (OH&S) management arrangements.	¬ Consultation of OH&S issues includes all staff. ¬ Agreed Health and Safety Management Arrangements policy and procedures.
Initiatives undertaken during the year to ensure the health, safety and welfare at work of employees and contactors.	¬ 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. ¬ Annual 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.
Health and safety outcomes including the impact on injury rates of employees and contractors.	¬ Increased awareness of roles and responsibilities in OH&S including responsibilities of managers.
Any investigations conducted during the year that relate to undertakings carried on by the employer, including details of all notices given to the employer under sections 29, 46 or 47 during the year.	¬ No requests were received from staff and no undertakings were given by the Corporation. ¬ No directions or notices were given to the Corporation.

Notifiable incidents	2008–09	2009–10
Deaths	0	0
Dangerous occurrences	0	0
Serious personal injury	0	0
Incapacity	0	0
Total	**0**	**0**

Disabilities

The FRDC implements the Commonwealth Disability Strategy on two levels: as a provider of services resulting from R&D, and as an employer.

The FRDC's recruitment and staff development practices seek to eliminate disadvantage that may be contributed 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 that 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.

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 Resource 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 have, in line with Government policy commenced the process to develop a certified agreement for all staff that will cover a range of employment conditions.

Equal employment opportunity

The FRDC has a policy of equal employment opportunity. Merit-based principles are applied in recruitment and promotion to ensure that discrimination does not occur. Of the FRDC's staff of twelve, seven 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 staff meetings to raise issues and discuss options as to resolve how they are handled.

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 Corporation's general governance arrangements are largely established by legislation and government policies, procedures and reporting requirements. In addition to the requirements of the PIERD 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 CAC 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 structures, processes, controls, behaviour 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

Representative organisations

In addition to its reporting to the Minister and Parliament, the FRDC formally reports to the annual meetings of its ministerially appointed representative organisations: the Commonwealth Fisheries Association, the National Aquaculture Council, and Recfish Australia. Appointment of the representative organisations, and the Corporation's consultation with and reporting to them, are in accordance with its enabling legislation.

Under section 15(2) of the PIERD Act and the *Guidelines on funding of consultation costs by primary industry and energy portfolio statutory authorities*, the FRDC may meet travel and other expenses incurred in connection with consultation between the Corporation and its representative organisations. During 2009–10 the FRDC incurred $19,144 (rounded to the nearest dollar) in such expenses. FRDC has budgeted for approximately $30,000 expenditure during 2010–11.

This support is governed by *Guidelines on funding of consultation costs by primary industry and energy portfolio statutory authorities* which were issued by the Hon. John Anderson MP, Minister for Primary Industries and Energy in July 1998. These guidelines require the FRDC to provide details of all project related activities and costs in which the representative organisations have an interest. The list of project payments made to FRDC representative organisations is located at Appendix E (page 156).

Enabling legislation

The FRDC was formed as a statutory corporation on 2 July 1991 under the provisions of the PIERD Act. It also operates under the provisions of the CAC 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 PIERD Act and shown in Appendix C, are incorporated in the FRDC's vision and planned outcomes. As reflected in figure 2 on page 14, the Corporation's three R&D programs mirror the industry development, natural resources sustainability and people development themes of, respectively, sub-sections 3(a), (b) and (c) of the Act. This alignment has brought simplicity and robustness to the FRDC's R&D planning, implementation and reporting, and to many of the organisations with which it does business. Importantly, the alignment ensures that the R&D outputs resulting from the Corporation's investments fully address the legislative objects.

More information about the FRDC's legislative foundations can be found in Appendix C.

Responsible minister and exercise of ministerial powers

The Hon. Tony Burke MP was the Minister for Agriculture, Fisheries and Forestry during the financial year 2009–10.

Ministerial directions

The PIERD 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 CAC Act, may notify the Board of any general Australian Government policies that apply to the Corporation. At the date of this report, the following Ministerial Directions and Notifications have been received:

- In May 1995, the Minister issued a directive in accordance with the PIERD Act that spending of industry contributions is to be of direct relevance, within a five year period, to the fishery, industry sector, or state/territory in which funds were collected. The FRDC is to have regard to advice from management agencies and industry sectors, including FRABs.
- In July 1998, the Minister issued a directive in accordance with section 16(1)(b) of the CAC Act requiring the Corporation to comply with the reporting requirements of the *Guidelines on funding of consultation costs by primary industry and energy portfolio statutory authorities*.
- The Minister has notified the Corporation under section 28 of the CAC Act that the following policies apply to the Corporation.
  - On 21 August 2002, Commonwealth Fraud Control Guidelines 2002.
  - On 28 August 2002, Finance Circular No. 2002/01 — Foreign Exchange (Forex) Risk Management.
  - On 14 April 2003, Finance Circular No. 2002/02 — Cost Recovery by Government Agencies.
  - On 13 October 2003, National Code of Practice for the Construction Industry and the Commonwealth's Implementation Guidelines.
- On 23 September 2008 the Minister notified the Corporation under section 143 of the PIERD Act requiring the Corporation to comply with the Australian Government Bargaining Framework when exercising their power to engage employees.

Government policy

The FRDC during 2009–10 complied with all relevant Australian Government policy requirements, including:

- Commonwealth Fraud Control Guidelines 2002.
- Cost recovery policy.
- Australian Government Property Ownership Policy 2005.
- Protective Security Manual 2005 as a general policy of government.

Minimisation of administration

To increase its production of outputs in the face of greatly increasing demand for fisheries R&D, the FRDC continually strives to improve the way in which it goes about its business. To this end the FRDC undertook a number of reviews that looked to evaluate its efficiency and outline areas for improvement. Two of the reports are summarised on page 18 — Benchmarking review of the FRDC's research management, and on page 76 — FRDC efficiency review.

Productivity has been increased through improved management procedures, aided by the FRDC quality management system, and through the innovation, application and professional development of staff members. As part of this process, the FRDC aims to maximise the proportion of funds expended on R&D programs by minimising the cost of administration.

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. The Corporation 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 office.

Freedom of information

During 2009–10, the FRDC did not receive any inquiry 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.

More information on freedom of information see Appendix F on page 157.

The Board

STANDING, FROM LEFT: PATRICK HONE (EXECUTIVE DIRECTOR), BRETT McCALLUM, DARYL McPHEE, RENATA BROOKS, KEITH SAINSBURY, RICHARD A. STEVENS. **SEATED, FROM LEFT**: HEATHER BRAYFORD, PETER NEVILE (CHAIR), STUART RICHEY (DEPUTY CHAIR).

The Board comprises up to nine directors who are appointed in accordance with sections 17 and 77 of the PIERD Act. Directors are selected on the basis of their expertise in a variety of fields derived from the PIERD Act. These include commodity production and processing, conservation, science, economics, and business and finance management.

Directors are appointed for a term not exceeding three years. All directors except the Executive Director are appointed on a part-time basis.

The Board ensures that FRDC staff is provided with strong leadership, and that their qualifications, skills and experience are enhanced with formal, and on-the-job, training. This includes a formal induction process on the FRDC and a two-day workshop run by the Australian Institute of Company Directors. In addition the FRDC Board meets outside Canberra three times a year in regions key to the fishing industry. This provides directors with the opportunity to liaise and discuss issues with relevant industry stakeholders, as well as see first-hand, fishing industry in action.

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

New Board directors

On 1 September 2009, the Minister for Agriculture, Fisheries and Forestry appointed a new Board. All new directors underwent induction training on 7–9 October 2009, which includes a briefing on the requirements of the CAC Act. This Act, which significantly influences the conduct of the FRDC's affairs, is the basis for much of the corporate governance detailed in this annual report. All directors also receive appropriate updates on the duties and responsibilities of directors from the Australian Institute of Company Directors.

Directors' biographies

Mr Peter Neville: Chair

Appointed as Chair 1 September 2007. Chair of the Remuneration Committee.

Peter Neville is a former Deputy Director-General of the Queensland Department of Primary Industries and Fisheries, and was actively involved in introducing reforms into fisheries management in Queensland. Peter now consults on fisheries management, business analysis, environmental and strategic planning. He is the Chairman of the Southern Bluefin Tuna Management Advisory Committee of the Australian Fisheries Management Authority.

Stuart Richey AM: Deputy Chair

Appointed as a director 28 September 2006 and re-appointed 1 September 2009. Chair of the Finance, Audit and Risk Management Committee.

Stuart Richey is Managing Director, Richey Fishing Company Pty Ltd and Richey Services. Stuart has held a number of senior positions in the fishing industry on behalf of industry and government. He holds Master Class IV (trading) and Skipper Class II (fishing) qualifications. He chairs the Northern Prawn Management Advisory Committee and was a founding director of the Tasmanian Fishing Industry Council, a director for a number of years of the South East Trawl Fishing Industry Association, and a previous deputy chair of the Australian Fisheries Management Authority.

Dr Patrick Hone: Executive Director

Appointed Executive Director from 21 April 2005.

Patrick Hone has extensive knowledge of all sectors of the fishing industry. Over the last 12 years he has played a key role in the planning, management and funding of fisheries related research and development in Australia. He has a PhD in the development of aquaculture feed, and has been involved in the development of several significant aquaculture industry developments including Southern Bluefin Tuna, Pacific Oyster, abalone and mussel aquaculture.

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 Aquatic Management with 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 Executive Director, Science, Innovation & Performance, Primary Industries in Industry & Investment NSW. She also currently leads the Science and Innovation Division within the NSW Department of Primary Industries to develop innovative solutions and technologies to enhance the growth, sustainability and biosecurity of primary industries. 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 graduate of the Australian Institute of Company Directors. She chairs the Boards of the NSW Agricultural Genomics Centre and the Animal Genetics and Breeding Unit and is a member of the Primary Industries Innovation Centre Board.

Dr Ray Johnson: Director (non-executive)

Director 28 September 2006 to 31 August 2009.

Ray Johnson has combined a research career with high-level business achievement in the agribusiness and retail sectors. He has travelled extensively and has intimate knowledge of the Australian and international agriculture and agribusiness sectors, and the commercial application of R&D.

Brett McCallum: Director

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

Brett McCallum is Chief Executive Officer of the Pearl Producers Association. He has held a number of 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 Daryl McPhee

Appointed 1 September 2009.

Dr Daryl McPhee is Associate Professor of Environmental Science at Bond University and Director of McPhee Research Consultants. Daryl has worked on behalf of industry and government on projects involving all sectors of the fishing industry. This has included industry development and technology transfer and the development and implementation of environmental management systems. He has published numerous papers and reports on topics related to fisheries and marine ecology and fisheries economics and is the author of the textbook *Fisheries Management in Australia*. He also has extensive experience in the environmental assessment of port-related activities.

Dr Paul McShane: Director

Director 28 September 2006 to 31 August 2009.

Paul McShane is a research scientist and former Vice President of International and Development at the Australian Maritime College, Tasmania. He is presently Chief Research Officer of the Monash Sustainability Institute, Monash University. He has held senior management positions in marine research agencies in Victoria, South Australia and New Zealand. Paul has brought to the Board skills and experience in technology transfer, conservation and management of natural resources, environmental and ecological matters and administration of research and development.

Mr Frank Prokop: Director

Director 28 September 2006 to 31 August 2009.

Frank Prokop is the Executive Director of Recfishwest and former president of Recfish Australia. He has served on numerous state and Commonwealth fisheries advisory bodies. Frank has strong recreational fishing knowledge as well as expertise in fisheries and aquaculture production, conservation and management of natural resources, science, technology transfer, environmental and ecological matters, administration of R&D, business and financial management, and economics and sociology.

Professor Keith Sainsbury: Director

Appointed 15 September 2009.

Keith Sainsbury is Professor of Marine System Science, University of Tasmania and a director of SainSolutions Pty Ltd. Keith is Vice-Chair, Marine Stewardship Council, Science Advisor for the CSIRO Wealth from Oceans Flagship, and a commissioner of the Australian Fisheries Management Authority. He was the 2004 laureate of the prestigious Japan Prize for Science for his work in understanding shelf ecosystems and their sustainable utilisation.

Richard A. Stevens OAM: Director

Appointed as a director 28 September 2006 and re-appointed 1 September 2009. Member of the Finance, Audit and Risk Management Committee; and member of the Remuneration Committee.

Richard A. Stevens is a fisheries management and government relations adviser. Richard is also a commissioner of the Australian Fisheries Management Authority and a director of the Queensland Rural Adjustment Authority. He chairs the Southern Bluefin Tuna Research Council and a number of fishery management advisory committees. Previous roles include NSW Fisheries Resource Conservation Advisory Council chair and member of the Council of the Australian Maritime College, Tasmania.

Mr Richard N. Stevens: Director

Director 28 September 2006 to 31 August 2009.

Richard N. Stevens is RD&E Manager with the Western Australian Fishing Industry Council. He was a founding director of Seafood Services Australia and former Chair of the Food Centre of Western Australia and retains a strong interest in the Australian Seafood CRC, established in July 2007. Richard has experience in marine biology, fisheries management and managing private and public enterprises including owner/operator of seafood businesses. He contributes broad skills including experience in fish production, processing and marketing, science, technology transfer, administration of research and development, and business and financial management.

Independent committee member

Mr Robert Seldon — Independent member

Appointed as an independent member of the Finance, Audit and Risk Committee August 2008.

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 is currently on the Board of Horticulture Australia Ltd and Chair of that company's Finance and Risk Committee. He was formerly a Director of the Australian Fisheries Management Authority and also a Chair of their Finance and Audit Committee.

Board committees

Currently the Board has two committees:

- The Finance, Audit and Risk Management Committee. The Board at the 12 August 2008 meeting agreed to appoint Mr Robert Seldon to the Committee as an independent member. Mr Seldon has continued in this role during this financial year.
  - The Finance, Audit and Risk Management Committee comprises at least two non-executive directors and the Business Development Manager. The Committee 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.
  - The Remuneration Committee comprises the FRDC Chair (Chair of the Committee) and two non-executive directors elected by the Board.
  - The Committee 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

Attendance at Board meetings held during 2009–10

On this and the opposite page are tables showing attendance at Board meetings held during 2009–10. The Chairman approved all absences from Board meetings in accordance with section 71(2) of the PIERD Act.

TABLE 6A: ATTENDANCE BY DIRECTORS AND OFFICER AT BOARD MEETINGS

Date	27/8/ 2009	9/10/ 2009	24/11/ 2009	15–16/2/ 2010	22/3/ 2010	16/4/ 2010	16/6/ 2010
Board meeting number	106	107	108	109	110 (T/C)	111	112
Mr Peter Neville (Chair)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mr Stuart Richey (Deputy Chair)	Yes	Yes	Yes	Yes	No	Yes	Yes
Dr Patrick Hone (Executive Director)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mr Richard A. Stevens	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ms Heather Brayford		Yes	Yes	Yes	Yes	Yes	Yes
Mrs Renata Brooks		Yes	Yes	Yes	Yes	Yes	Yes
Mr Brett McCallum		Yes	Yes	Yes	Yes	Yes	Yes
Dr Daryl McPhee		Yes	Yes	Yes	Yes	Yes	Yes
Dr Keith Sainsbury		Yes	Yes	Yes	No	Yes	Yes
Dr Ray Johnson	Yes						
Dr Paul McShane	Yes						
Mr Frank Prokop	Yes						
Mr Richard N. Stevens	No						
Mr John Wilson (Company Secretary)	Yes	Yes	Yes	Yes	Yes	No	Yes

T/C is a teleconference. The grey cells signify the director was not eligible to attend the meeting (either they had not yet been appointed or their tenure had ended).

TABLE 6B: ATTENDANCE BY DIRECTORS, INDEPENDENT MEMBER AT FINANCE, AUDIT AND RISK MANAGEMENT COMMITTEE MEETINGS

Date	10/7/2009 (T/C)	13/11/2009	7/1/2010	15/2/2010	10/6/2010
Mr Stuart Richey	Yes	Yes	Yes	Yes	Yes
Mr Brett McCallum		Yes	Yes	Yes	Yes
Mr Richard A. Stevens	Yes	Yes	Yes	Yes	Yes
Mr Robert Seldon (independent Member)	Yes	Yes	Yes	No	Yes
Mr John Wilson (Company Secretary)	Yes	Yes	Yes	Yes	Yes

T/C is a teleconference. The grey cell signifies the director was not eligible to attend the meeting, as he had not yet been appointed.

TABLE 6C: ATTENDANCE BY DIRECTORS AT REMUNERATION COMMITTEE MEETINGS

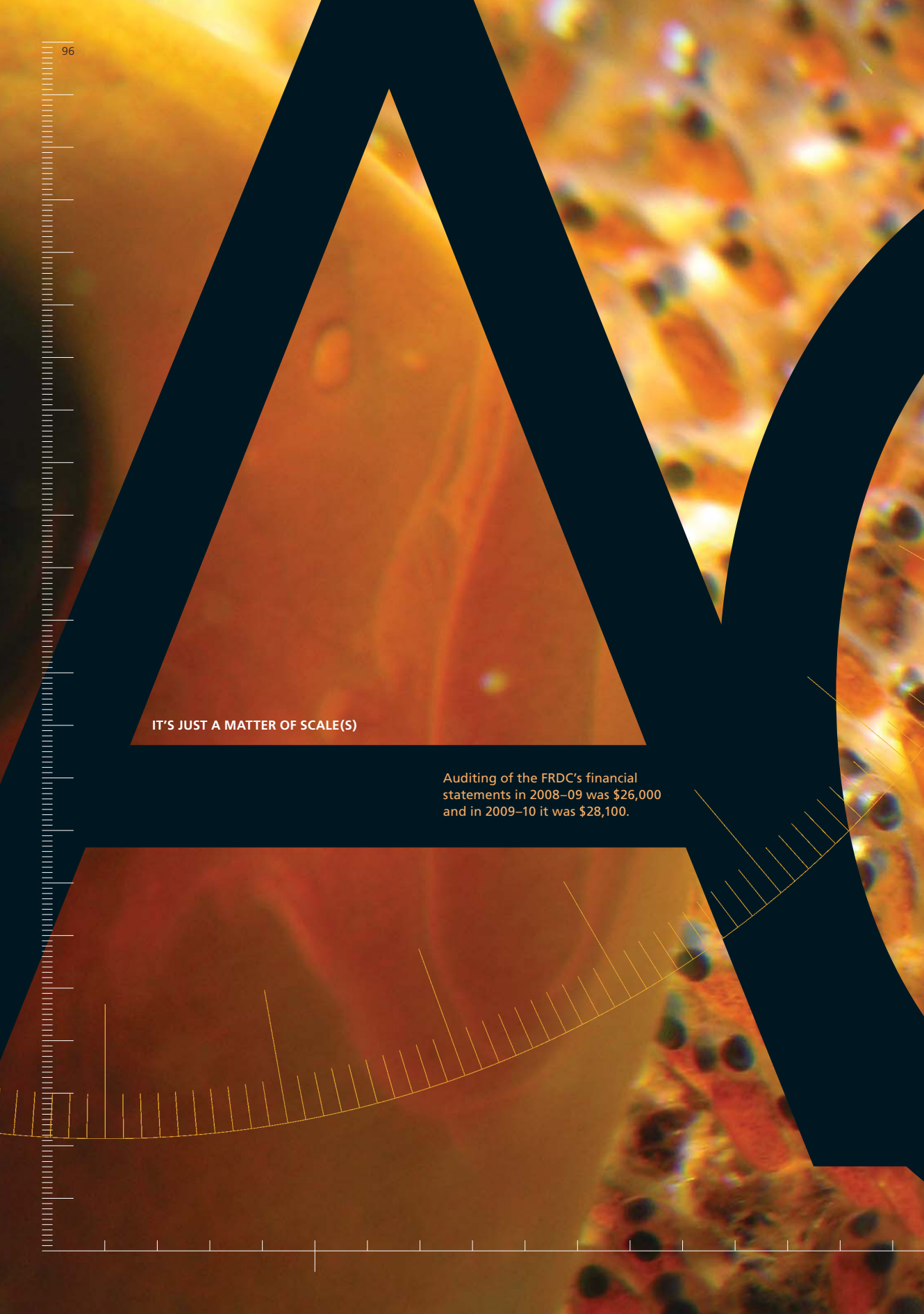
Date	13/11/2009	14/6/2010
Mr Peter Neville	Yes	Yes
Ms Heather Brayford	Yes	Yes
Mr Richard A. Stevens	Yes	Yes

Directors' interests

The FRDC's policy on directors' interests, of which the following is a summary, complies with section 21 of the CAC 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.

Participation by director with conflict of interests

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



IT'S JUST A MATTER OF SCALE(S)

Auditing of the FRDC's financial statements in 2008–09 was $26,000 and in 2009–10 it was $28,100.

Auditor-General's report 2009–10

Australian National
Audit Office

INDEPENDENT AUDITOR'S REPORT

To the Minister for Agriculture, Fisheries and Forestry

Scope

I have audited the accompanying financial statements of the Fisheries Research and Development Corporation for the year ended 30 June 2010, which comprise: a Statement by Directors, Executive Director and Chief Financial Officer, Statement of Comprehensive Income; Balance Sheet; Statement of Changes in Equity; Cash Flow Statement; Schedule of Commitments; Schedule of Contingencies, Schedule of Asset Additions and Notes to and forming part of the financial statements, including a Summary of significant accounting policies.

The Director's Responsibility for the Financial Statements

The Directors are responsible for the preparation and fair presentation of the financial statements in accordance with the Finance Minister's Orders made under the *Commonwealth Authorities and Companies Act 1997*, including the Australian Accounting Standards (which include the Australian Accounting Interpretations). This responsibility includes establishing and maintaining internal controls relevant to the preparation and fair presentation of the financial statements that are free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

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 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 Fisheries Research and Development Corporation'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 Fisheries Research and Development Corporation's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the Directors, as well as evaluating the overall presentation of the financial statements.

GPO Box 707 CANBERRA ACT 2601
19 National Circuit BARTON ACT
Phone (02) 6203 7300 Fax (02) 6203 7777

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

Independence

In conducting the audit, I have followed the independence requirements of the Australian National Audit Office, which incorporate the requirements of the Australian accounting profession.

Auditor's Opinion

In my opinion, the financial statements of the Fisheries Research and Development Corporation:

(a) have been prepared in accordance with the Finance Minister's Orders made under the *Commonwealth Authorities and Companies Act 1997*, including the Australian Accounting Standards; and

(b) give a true and fair view of the matters required by the Finance Minister's Orders including the Fisheries Research and Development Corporation's financial position as at 30 June 2010 and its financial performance and cash flows for the year then ended.

Australian National Audit Office

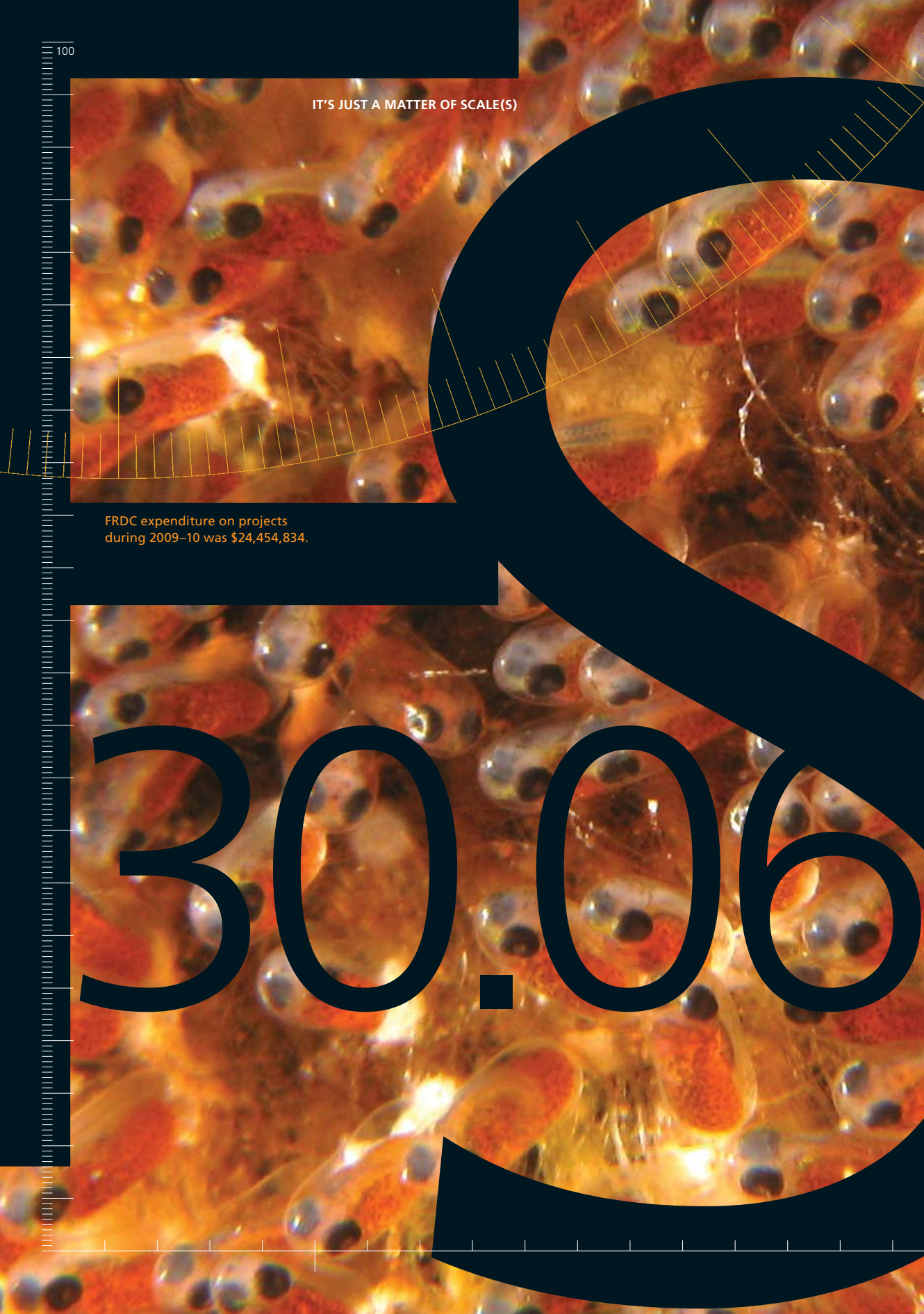
Peter Kerr

A/ Executive Director

Delegate of the Auditor-General

Canberra

20 August 2010

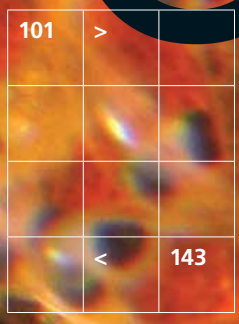


FRDC expenditure on projects during 2009–10 was $24,454,834.

30.06

Financial statements for the year ended 30 June 2010

2010



STATEMENT BY DIRECTORS, EXECUTIVE DIRECTOR AND CHIEF FINANCIAL OFFICER

In our opinion, the attached financial statements for the period ended 30 June 2010 are based on properly maintained financial records, and give a true and fair view of the matters required by the Finance Minister's Orders made under the *Commonwealth Authorities and Companies Act 1997* (CAC Act), as amended.

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

These statements are made in accordance with a resolution of the directors.

Signed..... 20/8/2010

Peter Neville
Chair

Signed..... 20/8 2010

Stuart Richey AM
Chair Finance, Audit and Risk Management Committee

Signed..... 20/8 2010

Patrick Hone
Executive Director

Signed..... 20 Aug 2010

John Wilson
Chief Financial Officer

STATEMENT OF COMPREHENSIVE INCOME

for the period ended 30 June 2010

	Notes	2010 $	2009 $
EXPENSES			
Employee benefits	3A	1,789,821	1,578,638
Supplier expenses	3B	2,030,459	2,000,161
Depreciation and amortisation	3C	512,132	554,483
Projects expenditure	3D	24,454,834	23,618,702
Finance costs	3E	139,883	0
Total expenses		28,927,129	27,751,984
LESS:			
OWN-SOURCE INCOME			
Own-source revenue			
Contributions	4A	8,581,974	11,932,794
Sale of goods and rendering of services	4B	112,967	212,025
Interest	4C	341,671	431,563
Other	4D	227	1,434
Total own-source revenue		9,036,840	12,577,816
Total own-source income		9,036,840	12,577,816
Net cost of services		(19,890,289)	(15,174,167)
Revenue from Australian Government	4E	21,235,463	16,298,959
Surplus attributable to the Australian Government		1,345,174	1,124,791
OTHER COMPREHENSIVE INCOME			
Changes in asset revaluation reserves		82,553	0
Total other comprehensive income		82,553	0
Total comprehensive income attributable to the Australian Government		1,427,728	1,124,791

THE ABOVE STATEMENT SHOULD BE READ IN CONJUNCTION WITH THE ACCOMPANYING NOTES.

BALANCE SHEET

as at 30 June 2010

	Notes	2010 $	2009 $
ASSETS			
Financial assets			
Cash and cash equivalents	5A	**7,935,738**	3,677,468
Trade and other receivables	5B	**2,001,083**	4,149,605
Other investments	5C	**5,001**	5,001
Other	5D	**0**	80,000
Total financial assets		**9,941,822**	7,912,074
Non-financial assets			
Infrastructure, plant and equipment	6A,C	**242,640**	226,296
Intangibles	6B,C	**2,455,433**	2,561,115
Total non-financial assets		**2,698,073**	2,787,412
Total assets		**12,639,895**	10,699,486
LIABILITIES			
Payables			
Suppliers	7A	**160,135**	179,531
Projects	7B	**939,781**	52,657
Other	7C	**1,306,002**	1,707,593
Total payables		**2,405,918**	1,939,781
Provisions			
Employee provisions	8A	**468,466**	421,921
Total provisions		**468,466**	421,921
Total liabilities		**2,874,384**	2,361,702
Net assets		**9,765,511**	8,337,783
EQUITY			
Reserves		**177,519**	94,965
Retained surplus		**9,587,993**	8,242,818
Total equity		**9,765,511**	8,337,783

THE ABOVE STATEMENT SHOULD BE READ IN CONJUNCTION WITH THE ACCOMPANYING NOTES.

STATEMENT OF CHANGES IN EQUITY

for the period ended 30 June 2010

	Retained surplus		Asset revaluation reserves		Total equity	
	2010	2009	**2010**	2009	**2010**	2009
	$	$	**$**	$	**$**	$
Opening balance						
Balance carried forward from previous period	**8,242,818**	7,118,027	**94,965**	94,965	**8,337,783**	7,212,992
Adjusted opening balance	**8,242,818**	7,118,027	**94,965**	94,965	**8,337,783**	7,212,992
Comprehensive income						
Other comprehensive income	**0**	0	**82,553**	0	**82,553**	0
Surplus for the period	**1,345,174**	1,124,791	**0**	0	**1,345,174**	1,124,791
Total comprehensive income	**1,345,174**	1,124,791	**82,553**	0	**1,427,728**	1,124,791
Closing balance as at 30 June	**9,587,993**	8,242,818	**177,519**	94,965	**9,765,511**	8,337,783
Closing balance attributable to the Australian Government	**9,587,993**	8,242,818	**177,519**	94,965	**9,765,511**	8,337,783

THE ABOVE STATEMENT SHOULD BE READ IN CONJUNCTION WITH THE ACCOMPANYING NOTES.

CASH FLOW STATEMENT

for the period ended 30 June 2010

	Notes	2010 $	2009 $
OPERATING ACTIVITIES			
Cash received			
Goods and services		112,967	212,025
Receipts from Australian Government		22,036,974	16,298,959
Contributions		10,887,848	11,442,947
Interest		341,671	431,563
Net GST received		1,841,702	1,292,863
Other		227	1,434
Total cash received		35,221,390	29,679,791
Cash used			
Employees		(1,743,276)	(1,594,571)
Suppliers		(1,970,364)	(1,982,948)
Projects expenditure		(26,261,232)	(26,851,610)
Total cash used		(29,974,872)	(30,429,129)
Net cash flows from operating activities	9	5,246,518	(749,338)
INVESTING ACTIVITIES			
Cash used			
Purchase of infrastructure, plant and equipment		(32,450)	(54,235)
Purchase of intangibles		(307,790)	(252,580)
Total cash used		(340,240)	(306,815)
Net cash flows used by investing activities		(340,240)	(306,815)
FINANCING ACTIVITIES			
Cash used			
Repayment of borrowings	7C	(648,008)	0
Total cash used		(648,008)	0
Net cash flows used from financing activities		(648,008)	0
Net increase in cash held		4,258,270	(1,056, 154)
Cash and cash equivalents at the beginning of the reporting period		3,677,468	4,733,622
Cash and cash equivalents at the end of the reporting period	5A	7,935,738	3,677,468

THE ABOVE STATEMENT SHOULD BE READ IN CONJUNCTION WITH THE ACCOMPANYING NOTES.

SCHEDULE OF COMMITMENTS

as at 30 June 2010

	2010 $	2009 $
BY TYPE		
Commitments receivable		
GST recoverable on operating lease commitments	**33,414**	10,934
GST recoverable on project commitments	**4,111,108**	4,607,915
Total commitments receivable	**4,144,521**	4,618,849
Commitments payable		
Other commitments		
Operating leases [1]	**367,549**	120,274
Project commitments [2]	**45,222,183**	50,687,066
Total other commitments	**45,589,733**	50,807,340
Net commitments by type	**41,445,212**	46,188,491
BY MATURITY		
Commitments receivable		
One year or less	**2,532,933**	2,850,036
From one to five years	**1,611,588**	1,762,813
Over five years	**0**	6,000
Total commitments receivable	**4,144,521**	4,618,849
Commitments payable		
Operating lease commitments		
One year or less	**118,869**	111,022
From one to five years	**248,680**	9,252
Over five years	**0**	0
Total operating lease commitments	**367,549**	120,274
Project commitments		
One year or less	**27,743,396**	31,239,373
From one to five years	**17,478,787**	19,381,693
Over five years	**0**	66,000
Total project commitments	**45,222,183**	50,687,066
Net commitments by maturity	**41,445,212**	46,188,491

THE ABOVE SCHEDULE SHOULD BE READ IN CONJUNCTION WITH THE ACCOMPANYING NOTES.

SCHEDULE OF COMMITMENTS (continued)

Notes to Schedule of Commitments

NB: Commitments are GST inclusive where relevant.

Operating leases are effectively non-cancellable and comprise:

1. The lease for office accommodation of premises at 25 Geils Court, Deakin which expires 31 July 2013. Lease payments are subject to an annual increase in accordance with upwards movements in the Consumer Price Index. The initial period of office accommodation lease is still current and may be renewed for up to three years at FRDC's option, following a once-off adjustment to rental to current market level.
2. Project commitments comprise the future funding of approved projects that are contingent on achievement of agreed milestones over the life of the 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 government policy. If the FRDC were to terminate a project agreement, it would only be liable to compensate the research provider for reasonable costs in respect of unavoidable loss incurred by the research provider and directly attributable to the termination.

SCHEDULE OF CONTINGENCIES

as at 30 June 2010

	2010 $	2009 $
Contingent liabilities		
Seafood CRC Company Ltd	**9,221,731**	11,111,495
Total contingent liabilities	**9,221,731**	11,111,495

Details of contingent liabilities are disclosed in Note 10: Contingent liabilities and assets.
At 30 June 2010, the FRDC had no contingent assets.

THE ABOVE STATEMENT SHOULD BE READ IN CONJUNCTION WITH THE ACCOMPANYING NOTES.

SCHEDULE OF ASSET ADDITIONS

for the period ended 30 June 2010

The following non-financial non-current assets were added in 2009–10:			
	Infrastructure, plant and equipment	Intangibles	Total
	$	$	$
By purchase	32,450	0	32,450
Internally developed	0	307,790	307,790
Total additions	32,450	307,790	340,240
The following non-financial non-current assets were added in 2008–09:			
	Infrastructure, plant and equipment	Intangibles	Total
	$	$	$
By purchase	54,235	0	54,235
Internally developed	0	252,580	252,580
Total additions	54,235	252,580	306,815

THE ABOVE STATEMENT SHOULD BE READ IN CONJUNCTION WITH THE ACCOMPANYING NOTES.

Notes to and forming part of the financial statements for the period ended 30 June 2010

Index to the notes to the financial statements

Note 1: Summary of significant accounting policies

1.1 Objective of the Fisheries Research and Development Corporation

The Fisheries Research and Development Corporation (FRDC) is an Australian Government controlled entity. The objective of the FRDC is to invest in research and development that delivers increased knowledge that fosters sustainable economic, environmental and social benefits for the Australian fishing industry; including indigenous, recreational, and commercial and aquaculture sectors, and the community; through investing in research, development and adoption.

The FRDC was established as a statutory corporation on 2 July 1991, under the provisions of the *Primary Industries and Energy Research and Development Act 1989* (PIERD Act). It is responsible to the Minister for Agriculture, Fisheries and Forestry, and is dependent on appropriations from the Parliament of Australia for its continued existence and ability to carry out its normal activities.

1.2 Basis of preparation of the financial statements

The financial statements are required by clause 1(b) of Schedule 1 to the *Commonwealth Authorities and Companies Act 1997* and are general purpose financial statements.

The financial statements and notes have been prepared in accordance with:

- ¬ Finance Minister's Orders (FMOs) for reporting periods ending on, or after, 1 July 2009; and
- ¬ 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 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 FMOs, assets and liabilities are recognised in the balance sheet 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 Agreements Equally Proportionately Unperformed are not recognised unless required by an accounting standard. Liabilities and assets that are unrecognised are reported in the schedule of commitments or the schedule of contingencies.

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 judgments 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.

1.4 New Australian Accounting Standards

Adoption of new Australian Accounting Standards requirements

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

The new standards, revised standards, and interpretations and amendments to standards that were issued prior to the signing of the statement by the Board Chair, Chair Finance, Risk and Audit 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 Corporation.

Future Australian Accounting Standards requirements

The new standards, revised standards, interpretations and amendments to standards that were issued prior to the signing of the statement by the Board Chair, Chair of the Finance, Risk and Audit Committee, 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 Corporation.

1.5 Revenue

Industry contributions are paid to the FRDC under Section 30A of the *Primary Industries and Energy Research and Development Act 1989*. Industry contributions are recognised when they are entitled to be received by the Corporation.

Revenue from the sale of goods is recognised when:

- ¬ the risks and rewards of ownership have been transferred to the buyer;
- ¬ the FRDC retains neither managerial involvement nor effective control over the goods;
- ¬ the revenue and transaction costs incurred can be reliably measured; and
- ¬ 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:

- ¬ the amount of revenue, stage of completion, and transaction costs incurred can be reliably measured; and
- ¬ the probable economic benefits associated with the transaction will flow to the entity.

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 as at the end of reporting period. Allowances are made when the 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:

- ¬ the FRDC obtains control of the contribution or the right to receive the contribution;
- ¬ it is probable that the economic benefits comprising the contribution will flow to the FRDC; and
- ¬ the amount of the contribution can be measured reliably.

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

NOTE 1: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Revenue from Australian Government

Funding received or receivable from Australian Government agencies is recognised as revenue from Australian Government, unless it is in the nature of an equity injection or a loan. This revenue comprises:

- a CAC Act body payment from the Department of Agriculture, Fisheries and Forestry, which is determined under section 30A of the PIERD Act for the operating activities of the FRDC, and
- grants from Australian Government agencies for specific purposes.

Revenue under the CAC Act body payment is recognised to the extent that it has been received into the Corporation's bank account or when it is entitled to be received by the Corporation.

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 due within twelve months of the end of reporting period are measured at their nominal amounts.

The nominal amounts are calculated with regard to the rates expected to be paid on settlement of the liability.

All other employee benefit liabilities are measured as the present value of the estimated future cash outflows to be made in respect of services provided by employees up to the reporting date.

The FRDC will act so as to ensure that its 'financial assets' (cash, receivables and investments) are greater than its 'employee provisions' (leave entitlements).

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 of the FRDC is estimated to be less than the annual entitlement for sick leave.

Leave liabilities are calculated on the basis of employees' remuneration at the estimated salary rates that will apply at the time the leave is taken, including the FRDC's employer superannuation contribution rates, to the extent that the leave is likely to be taken during service rather than paid out on termination.

The liability for long service leave has been determined in accordance with *AASB 119 Employee Benefits*, as at 30 June 2010. 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 2010, see Note 8: Provisions.

Separation and redundancy

Provision is made for separation and redundancy benefit payments. The FRDC recognises a provision for termination when it has developed a formal plan for the termination, and has informed those employees affected that it will carry out the terminations.

Superannuation

Employees of the FRDC are members of the Commonwealth Superannuation Scheme (CSS), the Public Sector Superannuation Scheme (PSS), or the PSS accumulation plan (PSSap).

The CSS and PSS are defined benefit schemes for 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 by the Department of Finance and Deregulation as an administered item.

The FRDC makes employer contributions to the employee superannuation schemes at rates determined by an actuary to be sufficient to meet the current cost to the government of the superannuation entitlements of the FRDC's employees. The FRDC accounts for the contributions as if they were contributions to defined contribution plans.

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 which 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 provider 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, or the eligibility criteria have been satisfied by the research provider to the FRDC's satisfaction.

1.10 Cash

Cash and cash equivalents includes cash on hand and demand deposits in bank accounts that are readily convertible to known amounts of cash and subject to insignificant risk of changes in value.

Cash is recognised at its nominal amount.

In accordance with section 42 of the *Primary Industries and Energy Research and Development Act 1989* (PIERD 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.

1.11 Financial risk management

The FRDC's activities expose it to normal commercial financial risk. As a result of the nature of the FRDC's business, and internal 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.

1.12 Financial assets

The FRDC classifies its financial assets in the following categories:

- financial assets at fair value through profit or loss;
- held-to-maturity investments;
- 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.

Financial assets at fair value through profit or loss

Financial assets are classified as financial assets at fair value through profit or loss where the financial assets:

- have been acquired principally for the purpose of selling in the near future;
- are a part of an identified portfolio of financial instruments that the FRDC manages together and has a recent actual pattern of short-term profit-taking; or
- are derivatives that are not designated and effective as a hedging instrument.

Assets in this category are classified as current assets.

Financial assets at fair value through profit or loss are stated at fair value, with any resultant gain or loss recognised in profit or loss. The net gain or loss recognised in profit or loss incorporates any interest earned on the financial asset.

Held-to-maturity investments

Non-derivative financial assets with fixed or determinable payments and fixed maturity dates that the group has the positive intent and ability to hold to maturity are classified as held-to-maturity investments. Held-to-maturity investments are recorded at amortised cost using the effective interest method less impairment, with revenue recognised on an effective yield basis.

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.

Other financial 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 balance sheet but are reported in the relevant schedules and 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 on exchange and liabilities are 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 authority's accounts immediately prior to the restructuring.

1.16 Infrastructure, plant and equipment

Asset recognition threshold

Purchases of infrastructure, plant and equipment are recognised initially at cost in the balance sheet, 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 which are significant in total).

Revaluations

Fair values for each class of asset are determined as shown below.

Asset class	Fair value measured at
Leasehold improvements	Depreciated replacement cost
Infrastructure, plant and equipment	Market selling price

Following initial recognition at cost, infrastructure, 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. The regularity of independent valuations depends upon the volatility of movements in market values for the relevant assets.

All infrastructure, plant and equipment assets were reviewed for fair value as at 30 June 2010 by the Australian Valuation Office, and are recorded in the financial statements at valuation.

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

	2010	2009
Infrastructure, plant and equipment	3 to 5 years	3 to 5 years
Leasehold improvements	Lease term	Lease term

Impairment

All assets were assessed for impairment at 30 June 2010. 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 to sell, 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 at 30 June 2010.

Derecognition

An item of infrastructure, 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 for internal use. This asset is carried at cost, less accumulated amortisation and accumulated impairment losses.

Internally developed software is amortised on a straight-line basis over its anticipated useful life. The useful life of software is 10 years.

All software assets were assessed for impairment as at 30 June 2010.

1.18 Taxation

The FRDC is exempt from all forms of taxation except fringe benefits tax (FBT), payroll tax and the goods and services tax (GST).

Revenues, expenses and assets are recognised net of GST except:

- where the amount of GST incurred is not recoverable from the Australian Taxation Office; and
- for receivables and payables.

1.19 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

Effective 1 July 2010, the Minister for Agriculture, Fisheries and Forestry approved the FRDC's 2010–15 RD&E Plan. There is no financial impact for the reporting period ending 30 June 2010.

Note 3: Expenses

Note 3A: Employee benefits

	2010 $	2009 $
Wages and salaries	**1,407,272**	1,207,717
Superannuation:		
Defined contribution plans	**97,173**	151,663
Defined benefit plans	**242,988**	203,916
Leave and other entitlements	**42,388**	15,342
Total employee benefits	**1,789,821**	1,578,638

NOTE 3: EXPENSES (CONTINUED)

Note 3B: Suppliers

		2010 $	2009 $
	Goods and services		
	Audit fees	**28,100**	26,000
	External service providers	**598,859**	621,466
	Asset purchases less than $5,000	**38,528**	17,398
(i)	Communications	**804,858**	771,116
	Insurance — general	**16,807**	15,425
	Office supplies	**25,162**	32,930
	Software off the shelf purchases / licences	**67,333**	56,447
	Property	**27,394**	28,138
	Recruitment / director selection costs	**40,259**	53,157
	Representation	**13,016**	17,616
	Telecommunications	**55,752**	55,651
	Training	**31,039**	23,315
	Travel	**140,627**	146,716
	Other	**28,570**	27,220
	Total goods and services	**1,916,303**	1,892,594
	Goods and services are made up of:		
	Provision of goods and services — related entities	**89,825**	87,198
	Provision of goods and services — external parties	**1,826,478**	1,805,396
	Total goods and services	**1,916,303**	1,892,594
	Other supplier expenses		
	Operating lease rental — external parties:		
	Minimum lease payments	**101,817**	99,576
	Workers compensation expenses	**12,339**	7,991
	Total other supplier expenses	**114,156**	107,567
	Total supplier expenses	**2,030,459**	2,000,161

NOTE 3: EXPENSES (CONTINUED)

Note 3B: Suppliers (continued)

		2010 $	2009 $
(i)	**Communications are represented by:**		
	Annual Report	**26,063**	30,730
	Australian Agricultural Natural Resources on-line (AANRO)	**9,620**	9,620
	Fisheries Research Advisory Bodies	**233,011**	125,042
	Joint Research & Development Corporation activities	**59,887**	33,532
	Media activities	**24,778**	22,138
	Other stakeholder consultation	**11,250**	87,837
	FISH magazine	**283,541**	312,916
	RD&E Plan	**18,966**	22,598
	Representative organisations consultation	**19,144**	14,330
	Website	**33,913**	39,592
	Sponsorship	**27,742**	20,015
	Other	**56,943**	52,766
	Total communications	**804,858**	771,116

Note 3C: Depreciation and amortisation

Depreciation:		
Infrastructure, plant and equipment	**98,660**	171,174
Total depreciation	**98,660**	171,174
Amortisation:		
Intangibles	**413,473**	383,309
Total amortisation	**413,473**	383,309
Total depreciation and amortisation	**512,132**	554,483

Note 3D: Projects expenditure

Projects		
Natural Resources Sustainability	**13,752,528**	11,974,420
Industry Development	**8,683,755**	9,765,428
People Development	**2,018,551**	1,878,854
Total project expenditure	**24,454,834**	23,618,702

Note 3E: Finance costs

	2010 $	2009 $
DAFF debt — unwinding of discount	139,375	0
ASCo loan — unwinding of discount	508	0
Total finance costs	139,883	0

DAFF debt — unwinding of discount expense represents the discount to the present value of the future cash flows for the DAFF debt payable (refer Note 7C) in accordance with *AASB 139 Financial Instruments: Recognition and Measurement*.

ASCo loan — unwinding of discount expense represents the discount to the present value of the future cash flows for the ASCo loan receivable (refer Note 5B) in accordance with *AASB 139 Financial Instruments: Recognition and Measurement*.

Note 4: Income

Revenue

Note 4A: Contributions

Fisheries managed by:		
Australian Fisheries Management Authority	1,432,065	2,310,540
Australian Capital Territory	124,772	229,058
New South Wales	383,124	240,282
Northern Territory	595,114	701,870
Queensland	715,070	650,295
South Australia	1,437,690	2,050,187
Tasmania	1,247,301	1,299,896
Victoria	421,336	226,502
Western Australia	1,212,658	1,810,437
Sub-total	7,569,129	9,519,068
Projects		
Project funds received from other parties	882,440	2,332,202
Project refunds of prior years expenditure	130,404	81,524
Sub-total	1,012,845	2,413,726
Total contributions revenue	8,581,974	11,932,794

NOTE 4: INCOME (CONTINUED)

Note 4B: Sale of goods and rendering of services

	2010 $	2009 $
Provision of goods — external parties	**112,967**	212,025
Total sale of goods and rendering of services	**112,967**	212,025

Note 4C: Interest

Deposits	**341,671**	431,563
Total interest	**341,671**	431,563

Note 4D: Other

Miscellaneous	**227**	1,434
Total other revenue	**227**	1,434

Note 4E: Revenue from Australian Government

Department of Agriculture, Fisheries and Forestry			
CAC Act body payment item:			
Australian Government contribution of 0.50% of GVP	(1)	**10,974,370**	10,996,373
Matching of industry contributions	(2)	**5,361,093**	5,302,585
Grants:			
Funding for game and shark fishing research	(3)	**600,000**	0
Funding for recreational fishing industry development strategy	(3)	**800,000**	0
Department of Climate Change and Energy Efficiency			
Grants:			
Funding for National Climate Change Adaptation Research Plan	(4)	**3,500,000**	0
Total revenue from Australian Government		**21,235,463**	16,298,959

(1) GVP 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 GVP 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 GVP) by the Australian Government.

(3) Research program funding for Department of Agriculture, Fisheries and Forestry research refer Note 13.

(4) Research projects funding for Department of Climate Change and Energy Efficiency projects refer Note 13.

Note 5: Financial assets

Note 5A: Cash and cash equivalents

	2010 $	2009 $
Cash at bank	**1,992,961**	2,243,038
Deposits on call	**2,742,778**	1,434,430
Funds on term deposit	**3,200,000**	0
Total cash and cash equivalents	**7,935,738**	3,677,468

Note 5B: Trade and other receivables

Other receivables:			
Revenue from Australian Government		**1,161,063**	1,855,531
Contributions		**455,214**	2,094,567
GST receivable from the Australian Taxation Office		**228,391**	177,631
Accrued income		**151,673**	21,875
ASCo loan	(ii)	**4,742**	0
Total trade and other receivables		**2,001,083**	4,149,605

FRDC has assessed receivables for impairment and determined that no impairment allowance is required.

Receivables are aged as follows:		
Not overdue	**1,962,583**	4,060,497
Overdue by:		
0 to 30 days	**38,500**	68,544
30 to 60 days	**0**	20,564
61 to 90 days	**0**	0
More than 90 days	**0**	0
Total receivables	**2,001,083**	4,149,605

(ii) **ASCo shareholders loan**

Included in receivables above the FRDC has provided a loan to ASCo of $5,000 under clause 14.3 of the shareholder agreement (refer also Note 5C). The FRDC expects the loan will be repaid in due course. The FRDC does not consider the ASCo loan to be impaired or overdue — it is expected to be repaid from future profits. The value of the loan has been discounted to represent a present value of the future cash flows. As the loan receivable has been discounted, there will be an expense recognised in the income statement in future periods to record the amortisation of the loan. The expense will be the difference between the nominal and discounted value.

All receivables are with entities external to the FRDC.

Note 5C: Other investments

		2010 $	2009 $
Shares in other company — unlisted	(i)	**5,001**	5,001
Total other investments		**5,001**	5,001
Total other investments are expected to be recovered in:			
More than 12 months		**5,001**	5,001
Total other investments		**5,001**	5,001

(i) Australian Seafood Co-Products Pty Ltd (ASCo)

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 5D: Other financial assets

Pre-paid sponsorships	**0**	(†)	80,000
Total other financial assets	**0**		80,000
Total other financial assets are expected to be recovered in:			
No more than 12 months	**0**		80,000
Total other financial assets	**0**		80,000

(†) Pre-paid sponsorships are amounts paid to Seafood Industry Victoria as sponsor of Seafood Directions 2010. The amount recoverable of $80,000 is included in Note 5B — Trade and other receivables.

Note 6: Non-financial assets

Note 6A: Infrastructure, plant and equipment

	2010 $	2009 $
Infrastructure, plant and equipment:		
Fair value	**242,640**	226,296
Total infrastructure, plant and equipment	**242,640**	226,296

All revaluations are conducted in accordance with the revaluation policy stated at Note 1.16. On 30 June 2010, an independent valuer, the Australian Valuation Office, conducted a review of the fair value of the FRDC's infrastructure, plant and equipment. Deprecation has been written back for 2009–10 and 2008–09.

No indicators of impairment were found for infrastructure, plant and equipment.

Note 6B: Intangibles

Computer software:		
Internally developed — in use	**4,258,589**	3,950,799
Total computer software (gross)	**4,258,589**	3,950,799
Accumulated amortisation	**(1,803,156)**	(1,389,683)
Total computer software (net)	**2,455,433**	2,561,115
Total intangibles (net)	**2,455,433**	2,561,115

No indicators of impairment were found for intangibles.

Note 6C: Reconciliation of the opening and closing balances of infrastructure, plant and equipment and intangibles (2009–10)

	Infrastructure, plant and equipment	Intangibles	Total
	$	$	$
As at 1 July 2009			
Gross book value	226,296	3,950,799	4,177,095
Accumulated depreciation/amortisation	0	(1,389,683)	(1,389,683)
Net book value 1 July 2009	226,296	2,561,115	2,787,411
Additions:			
By purchase	32,450	0	32,450
Internally developed	0	307,790	307,790
Revaluations recognised in other comprehensive income	82,553	0	82,553
Depreciation/amortisation expense	(98,660)	(413,473)	(512,132)
Net book value 30 June 2010	242,640	2,455,433	2,698,073
Net book value as of 30 June 2010 represented by:			
Gross book value	242,640	4,258,589	4,501,229
Accumulated depreciation/amortisation	0	(1,803,156)	(1,803,156)
	242,640	2,455,433	2,698,073

Reconciliation of the opening and closing balances of infrastructure, plant and equipment and intangibles (2008–09)

	Infrastructure, plant and equipment	Intangibles	Total
	$	$	$
As at 1 July 2008			
Gross book value	576,846	3,698,219	4,275,065
Accumulated depreciation/amortisation	(233,610)	(1,006,375)	(1,239,985)
Net book value 1 July 2008	343,235	2,691,844	3,035,079
Additions:			
By purchase	54,235	0	54,235
Internally developed	0	252,580	252,580
Revaluations recognised in other comprehensive income	0	0	0
Depreciation/amortisation expense	(171,174)	(383,309)	(554,483)
Net book value 30 June 2009	226,296	2,561,115	2,787,412
Net book value as of 30 June 2009 represented by:			
Gross book value	226,296	3,950,799	4,177,095
Accumulated depreciation/amortisation	0	(1,389,683)	(1,389,683)
	226,296	2,561,115	2,787,412

Note 7: Payables

Note 7A: Suppliers

	2010 $	2009 $
Trade creditors and accruals	**125,301**	147,361
FBT payable	**1,440**	435
PAYG payable	**33,394**	31,735
Total supplier payables	**160,135**	179,531

All supplier payables are with external parties and are current liabilities.

All supplier payables are expected to be settled within 12 months.

Settlement is usually made within 30 days.

Note 7B: Project payables

Project creditors	**939,781**	52,657
Total project creditors	**939,781**	52,657

All project payables are current liabilities.

Project creditors 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 milestones, but which were unpaid at the end of the reporting period. Settlement is usually made within 60 days.

NOTE 7: PAYABLES (CONTINUED)

Note 7C: Other payables

		2010 $	2009 $
Debt payable to DAFF	(1)	**1,198,960**	1,707,593
Australian Government 'matching' overpayment refundable to DAFF	(2)	**107,042**	0
Total other payables		**1,306,002**	1,707,593
Other payables is represented by:			
No more than 12 months		**431,046**	631,117
More than 12 months		**874,956**	1,076,476
Total other payables		**1,306,002**	1,707,593

(1) The debt payable to DAFF represents recovery of Gross Value of Production (GVP) overpayments to the FRDC. DAFF inadvertently used an incorrect formula to determine the GVP for fisheries for the financial years between 2001–02 and 2006–07. DAFF and the FRDC have agreed the total value of the debt is $1,944,024 ($1,371,565 in relation to 0.50% GVP; and $572,459 in relation to the matching contributions). DAFF and the FRDC have also agreed that the debt will be repaid over six years and FRDC has recognised it as other payables.

Two cash payments of $324,004 (including the discounted amount at Note 3E) were paid to DAFF in 2009–10, and are disclosed in the Cash Flow Statement.

In accordance with *AASB 139 Financial Instruments: Recognition and Measurement*, the debt has been recognised initially at its fair value, and has been discounted to represent a present value of the future cash flows. Because the DAFF debt has been discounted, there will be an expense recognised in the statement of comprehensive income in future periods as each debt repayment is made (refer Note 3E). The quantum of that expense will be the difference between the nominal and discounted value.

(2) This is an overpayment caused by DAFF making the GVP determination late in the financial year.

Note 8: Provisions

Note 8A: Employee provisions

	2010 $	2009 $
Leave	**468,466**	421,921
Total employee provisions	**468,466**	421,921
Employee provisions are expected to be settled in:		
No more than 12 months	**394,176**	375,507
More than 12 months	**74,290**	46,413
Total employee provisions	**468,466**	421,921

Note 9: Cash flow reconciliation

		2010 $	2009 $
Reconciliation of cash and cash equivalents as per balance sheet to cash flow statement			
Cash and cash equivalents as per:			
Cash flow statement		**7,935,738**	3,677,468
Balance sheet		**7,935,738**	3,677,468
Difference		**0**	0
Reconciliation of net cost of services to net cash from operating activities:			
Net cost of services		**(19,890,289)**	(15,174,167)
Add revenue from government		**21,235,463**	16,298,959
Adjustments for non-cash items			
Depreciation/amortisation		**512,132**	554,483
Finance costs		**139,375**	0
Changes in assets/liabilities		**5,246,518**	
Decrease in net receivables		**2,228,522**	(2,258,129)
Decrease in supplier payables		**(19,396)**	44,055
Increase in other payables		**107,042**	0
Increase in employee provisions		**46,545**	37,224
Increase in project payables		**887,124**	(251,763)
Net cash from operating activities		**5,246,518**	(749,338)

Note 10: Contingent liabilities and assets

Contingent liabilities			
Balance from previous period		**11,111,495**	18,041,542
New		**2,251,000**	0
Expired		**(4,140,764)**	(6,930,047)
Total contingent liabilities	(i)	**9,221,731**	11,111,495

At 30 June 2010, the FRDC had no contingent assets.

(i) Seafood CRC Company Ltd

The FRDC is a participant in the Seafood CRC Company Ltd (Seafood CRC). The Seafood CRC has signed an agreement with the Commonwealth of Australia which commits the FRDC to investing $24,575,123 (including additional funds of $2,251,000 under a new MOU agreement with Clean Seas) over the life of the CRC, which finishes in 2013–14. The FRDC recognises commitments as contracts are signed. The FRDC recognised $15,353,392 in Seafood CRC contracts as at 30 June 2010 ($11,212,628 as at 30 June 2009). This leaves a contingent liability at 30 June 2010 of $9,221,731 (30 June 2009 of $11,111,495). As the FRDC commits to further Seafood CRC contracts this contingent liability will reduce.

NOTE 10: CONTINGENT LIABILITIES AND ASSETS (CONTINUED)

Unquantifiable contingencies

DAFF Commonwealth matching payments

The Department of Agriculture, Fisheries and Forestry and the FRDC are jointly seeking legal advice on the interpretation of s30A of the *Primary Industries and Energy Research and Development Act 1989* (the Pierd Act). There is a lack of clarity around the amounts that can be matched by the Australian Government under the Act. Resolution of this matter may result in the need to recognise prior year debts or liability (either to DAFF or to the FRDC). At this stage of the process, these amounts are not yet quantifiable; but in the interests of transparency the FRDC is taking the conservative step of disclosing a contingency.

Note 11: Directors remuneration

	2010	2009
The number of directors of the FRDC included in these figures are shown below in the relevant remuneration bands:		
less than $145,000	12	7
$260,000 to $274,999	1	1
Total	13	8
	$	$
Total remuneration received, or due and receivable, by directors of FRDC	489,709	481,094

To calculate the remuneration band for the Executive Director, the annual movement in long service leave and annual leave provisions as at 30 June 2010 is added to his remuneration package.

Note 12: Related party disclosures

The directors of the FRDC during the year were:

Dr P. Hone	Executive Director
Ms H. Brayford	Director (Member Remuneration Committee) (Commenced 1 September 2009)
Ms R. Brooks	Director (Commenced 1 September 2009)
Mr B. McCallum	Director (Member Finance, Audit and Risk Management Committee) (Commenced 9 September 2009)
Dr D. McPhee	Director (Commenced 1 September 2009)
Mr P. Neville	Chair (Chair Remuneration Committee)
Mr S. Richey AM	Director (Deputy Chair) (Chair Finance, Audit and Risk Management Committee) (Re-appointed 1 September 2009)
Dr K. Sainsbury	Director (Commenced 1 September 2009)
Mr R.A. Stevens OAM	Director (Member Finance, Audit and Risk Management Committee) (Member Remuneration Committee) (Re-appointed 1 September 2009)
Dr R. Johnson	Director (Ceased 31 August 2009)
Dr P. McShane	Director (Ceased 31 August 2009)
Mr F. Prokop	Director (Ceased 31 August 2009)
Mr R.N. Stevens	Director (Ceased 31 August 2009)

NOTE 12: RELATED PARTY DISCLOSURES (CONTINUED)

The FRDC's practice is to disclose all transactions with an entity with whom a director has a close association. This means that directors who sit on an entity's committee have attributed to them all the transactions of that entity.

No loans were made to directors or director-related entities during the year.

Director	Organisation and position held	Nature of interest	Income received from entity $	Expenditure paid to entity $
Ms H. Brayford *(Commenced 1 September 2009)*	Department of Fisheries Western Australia *Director Aquatic Management*	Research projects or work undertaken by the organisation	1,354,641	1,560,865
Ms R. Brooks *(Commenced 1 September 2009)*	Department of Industry & Investment – Primary Industries and Energy (NSW) *Executive Director, Science, Innovation & Performance* – NSW Agricultural Genomics Centre *Chair* – NSW Animal Genetics and Breeding Unit *Chair* – NSW Primary Industries Innovation Centre board *Director*	Research projects or work undertaken by the organisation	253,752	552,723
Dr P. Hone	Seafood CRC Company Ltd *Director*	Research projects or work undertaken by the organisation	39,599	4,267,958
Mr B. McCallum *(Commenced 9 September 2009)*	Pearl Producers Association *Chief Executive Officer*	Research projects or work undertaken by the organisation	0	55,268
Dr D. McPhee *(Commenced 1 September 2009)*	McPhee Research Consultants Pty Ltd *Director*	Research projects or work undertaken by the organisation	0	189,841
Dr P. McShane *(Retired 31 August 2009)*	Spencer Gulf and West Coast Prawn Fishermen's Association *Consultant*	Research projects or work undertaken by the organisation	0	40,524

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

NOTE 12: RELATED PARTY DISCLOSURES (CONTINUED)

Director	Organisation and position held	Nature of interest	Income received from entity $	Expenditure paid to entity $
Mr P. Neville	Southern Bluefin Tuna Management Advisory Committee (AFMA) *Chair*	Research projects or work undertaken by the organisation	1,637,140	815,368
	P.J. Neville and Associates *Principal*	Research projects or work undertaken by the organisation	0	0
	Queensland Seafood Industry Association *Consultant*	Research projects or work undertaken by the organisation	0	30,926
Mr F. Prokop *(Retired 31 August 2009)*	Recfishwest *Executive Director*	Research projects or work undertaken by the organisation	0	1,183
	Recfish Australia *Executive Director of Recfishwest, a member organisation of Recfish Australia*	Research projects or work undertaken by the organisation	109	5,500
Mr S. Richey AM *(Re-appointed 1 September 2009)*	Australian Fisheries Management Authority *Chairman of Northern Prawn Management Advisory Committee*	Research projects or work undertaken by the organisation	1,637,140	815,368
	Tasmanian Aquaculture and Fisheries Institute (TAFI) University of Tasmania *Spouse of Director*	Research projects or work undertaken by the organisation	7,236	2,995,802
Dr K. Sainsbury *(Commenced 1 September 2009)*	University of Tasmania *Professor Marine System Science*	Research projects or work undertaken by the organisation	7,236	2,590,776
	Australian Fisheries Management Authority *Commissioner*	Research projects or work undertaken by the organisation	1,636,222	470,293

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

NOTE 12: RELATED PARTY DISCLOSURES (CONTINUED)

Director	Organisation and position held	Nature of interest	Income received from entity $	Expenditure paid to entity $
Mr R.A. Stevens OAM *(Re-appointed 1 September 2009)*	Australian Fisheries Management Authority *Commissioner*	Research projects or work undertaken by the organisation	1,637,140	815,368
	Recreational Survey for the Greater Sydney Region (Department of Industry and Investment – Primary Industries and Energy (NSW)) *Chair*	Research projects or work undertaken by the organisation	253,752	602,308
	Department of Regional Development, Primary Industry, Fisheries and Resources (NT) *Chair, Mud Crab and Spanish Mackerel Fishery MACs*	Research projects or work undertaken by the organisation	654,707	54,041
	Primary Industries and Resources SA *Member of the South Australian Fisheries Council (wild fisheries only – not aquaculture)*	Research projects or work undertaken by the organisation	162,556	278,938
	Australian Southern Bluefin Tuna Industry Association *Chair of Southern Bluefin Tuna Research Council for FRDC project 2008/227*	Research projects or work undertaken by the organisation	0	22,582
Mr R.N. Stevens *(Retired 31 August 2009)*	Western Australian Fishing Industry Council *R&D Manager*	Research projects or work undertaken by the organisation	0	66,286

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

Note 13: Other related parties

Department of Climate Change and Energy Efficiency (DCCEE)

On 29 March 2010, the FRDC entered into a Heads of Agreement (HOA) with the Department of Climate Change and Energy Efficiency (DCCEE) and Griffith University through the National Climate Change Adaptation Research Facility. The HOA relates to the funding of research addressing priorities in the National Climate Change Adaptation Research Plan: Marine Biodiversity and Resources. The parties identified research through a funding round in 2009–10 for projects that addressed the priorities in the Adaptation Research Plan, being aquaculture, commercial and recreational fishing, conservation management, tourism and recreational uses, and cross-cutting issues. The FRDC has recognised $3,500,000 (exclusive of GST) from DCCEE on commencement of this HOA for use on projects approved in accordance with the HOA. (Refer Note 4E: Revenue from Australian Government.)

Department of Agriculture, Fisheries and Forestry (DAFF)

In 2009–10, the FRDC entered into funding agreements for the following initiatives:

- Recreational Fishing Industry Development Strategy (RFIDS)
- Electronic monitoring of sea lion interactions with shark fishing nets
- Socio-economic fisheries research in fishing game sector

The FRDC is to provide services in accordance with the funder agreements. The Minister for Agriculture, Fisheries and Forestry will detail projects to be undertaken with the funds provided under the agreements. The projects will be developed by DAFF in consultation with the FRDC. The FRDC recognised $1,400,000 (exclusive of GST), (refer Note 4E: Revenue from Australian Government), from DAFF on signing of the agreements.

Note 14: Executive remuneration

Note 14A: Actual remuneration paid to senior executives

Executive remuneration:		
	2010	2009
The number of senior executives who received:		
less than $145,000*	**1**	1
$145,000 to $159,999	**1**	1
$220,000 to $234,999	**1**	1
Total	**3**	3

* Excluding acting arrangements and part-year service.

NOTE 14: EXECUTIVE REMUNERATION (CONTINUED)

Note 14A: Actual remuneration paid to senior executives (continued)

Total expense recognised in relation to senior executive employment		
	2010	2009
	$	$
Short-term employee benefits:		
Salary (including annual leave taken)	**443,414**	425,156
Changes in annual leave provisions	**(2,030)**	11,472
Total short-term employee benefits	**441,384**	436,628
Superannuation (post-employment benefits)	**77,449**	83,002
Other long-term benefits:	**11,236**	5,080
Total	**530,069**	524,710

During the year FRDC paid no termination benefits to senior executives (2009: Nil).

Note 14B: Salary packages of senior executives

Average annualised remuneration packages for substantive senior executives employed at 30 June

Total remuneration:	As at 30 June 2010		
	Number of senior executives	Base salary (including annual leave)	Total remuneration package [1]
	$	$	$
less than $145,000	**1**	**121,807**	**134,300**
$145,000 to $159,999	**1**	**131,907**	**151,982**
$220,000 to $234,999	**1**	**189,700**	**234,581**
Total	**3**		

Total remuneration:	As at 30 June 2009		
	Number of senior executives	Base salary (including annual leave)	Total remuneration package
	$	$	$
less than $145,000	1	114,763	131,024
$145,000 to $159,999	1	129,594	148,275
$220,000 to $234,999	1	180,799	228,859
Total	3		

(1) Non-salary elements available to senior executives include Superannuation

Note 15: Remuneration of auditors

Financial statement audit services are provided to the FRDC by the Auditor-General.

	2010 $	2009 $
Auditing the financial statements	**28,100**	26,000
Amounts received or due and receivable by the external auditors	**28,100**	26,000

RSM Bird Cameron is contracted by the Australian National Audit Office (ANAO) to provide audit services on the ANAO's behalf. Fees for these services are included above. No other services were provided by the ANAO or their contractors, RSM Bird Cameron.

Note 16: Financial instruments

Note 16A: Categories of financial instruments

	2010 $	2009 $
Financial assets		
Held-to-maturity:		
Cash at bank	**1,992,961**	2,243,038
Deposits on call	**2,742,778**	1,434,430
Funds on term deposit	**3,200,000**	0
Loans and receivables:		
Shares	**5,001**	5,001
Loan	**4,742**	0
Prepaid sponsorship	**0**	80,000
Other receivables	**606,888**	2,116,442
Carrying amount financial assets	**8,552,369**	5,878,912
Financial liabilities		
Other financial liabilities		
Trade creditors	**125,301**	147,361
Project creditors	**939,781**	52,657
Other payables	**1,306,002**	1,707,593
Carrying amount financial liabilities	**2,371,084**	1,907,611

Note 16B: Net income and expenses from financial assets

Held-to-maturity		
Interest revenue	**341,671**	431,563
Net gain from held-to-maturity	**341,671**	431,563
Net gain from financial assets	**341,671**	431,563

Note 16C: Fair value of financial instruments

	Carrying amount 2010 $	Fair value 2010 $	Carrying amount 2009 $	Fair value 2009 $	
Financial assets					
Held-to-maturity:					
Cash at bank	**1,992,961**	**1,992,961**	2,243,038	2,243,038	
Deposits on call	**2,742,778**	**2,742,778**	1,434,430	1,434,430	
Funds on term deposit	**3,200,000**	**3,200,000**	0	0	
Loans and receivables					
Shares	**5,001**	**0**	5,001	0	
Loan	**4,742**	**0**	0	0	†
Prepaid sponsorship	**0**	**0**	80,000	80,000	
Other receivables	**606,888**	**606,88**	2,116,442	2,116,442	
Total	**8,552,369**	**8,542,626**	5,878,912	5,873,911	

Financial liabilities

Other financial liabilities					
Trade creditors	**125,301**	**125,301**	147,361	147,361	
Project creditors	**939,781**	**939,781**	52,657	52,657	
Other payables	**1,306,002**	**1,306,002**	1,707,593	1,707,593	
Total	**2,371,084**	**2,371,084**	1,907,611	1,907,611	

† There are no significant differences between the carrying amounts and fair values of financial assets and liabilities, with the exception of the value of shares which are carried at cost because they do not have a quoted market price in an active market, and a fair value cannot be reliably measured.

Note 16D: Credit risk

The FRDC is exposed to minimal credit risk as the majority of its receivables are from government agencies, industry, universities and program contributors who have existing relationships with the FRDC.

The FRDC holds no collateral to mitigate against credit risk.

Credit quality of financial instruments not past due or individually determined as impaired

	Not past due nor impaired 2010 $	Not past due nor impaired 2009 $	Past due or impaired 2010 $	Past due or impaired 2009 $
Cash and cash equivalents	**7,935,738**	3,677,468	**0**	0
Shares	**5,001**	5,001	**0**	0
Loan	**4,742**	0		
Other (prepaid sponsorship)	**0**	80,000	**0**	0
Other receivables	**606,888**	2,116,442	**38,500**	89,108
Total	**8,552,369**	5,878,912	**38,500**	89,108

Ageing of financial assets that were past due but not impaired for 2010

	0 to 30 days $	31 to 60 days $	61 to 90 days $	90+ days $	Total $
Other receivables	**38,500**	**0**	**0**	**0**	**38,500**
Total	**38,500**	**0**	**0**	**0**	**38,500**

Ageing of financial assets that are past due but not impaired for 2009

	0 to 30 days $	31 to 60 days $	61 to 90 days $	90+ days $	Total $
Other receivables	68,544	20,564	0	0	89,108
Total	68,544	20,564	0	0	89,108

As of 30 June 2010, other receivables in the amount of $38,500 ($89,108 in 2009) 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 16E: Liquidity risk

The FRDC's financial liabilities are project payables, supplier 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 government funding and internal policies and procedures put in place to ensure there are appropriate resources to meet its financial obligations.

Maturities for non-derivative financial liabilities in 2010

	Within 1 year $	1 to 2 years $	2 to 5 years $	> 5 years $	Total $
Other financial liabilities					
Suppliers	125,301	0	0	0	125,301
Projects	939,781	0	0	0	939,781
Other payables	431,046	307,258	567,698	0	1,306,002
Total	1,496,128	307,258	567,698	0	2,371,084

Maturities for non-derivative financial liabilities in 2009

	Within 1 year $	1 to 2 years $	2 to 5 years $	> 5 years $	Total $
Other financial liabilities					
Suppliers	147,361	0	0	0	147,361
Projects	52,657	0	0	0	52,657
Other payables	631,117	291,102	785,374	0	1,707,593
Total	831,135	291,102	785,374	0	1,907,611

FRDC has no derivative financial liabilities in both the current and prior year.

Note 16F: Market risk

FRDC holds basic financial instruments that do not expose the FRDC to certain market risks. FRDC is not exposed to 'currency risk' or 'other price risk'.

Note 17: Reporting of outcome

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 indigenous, recreational, commercial and aquaculture sectors, and the community; through investing in research, development and adoption.

The FRDC is a co-funded partnership between its stakeholders, the Australian Government and the Australian fishing industry.

The role of the FRDC is to invest in fisheries research, development and extension (RD&E) activities in Australia. This includes providing leadership and coordinating the monitoring, evaluating and reporting on RD&E activities; and facilitating its dissemination, extension and commercialisation. The FRDC achieves this through coordinating government and industry investment, based on a collaborative approach involving stakeholders to establish and address RD&E priorities.

Note 17A: Net cost of outcome delivery

	Outcome 1	
	2010	2009
	$	$
Expenses	**28,927,129**	27,751,984
Income from non-government sector		
Contributions	**8,581,974**	11,932,794
Sale of goods and rendering of services	**112,967**	212,025
Interest	**341,671**	431,563
Other	**227**	1,434
Total	**9,036,840**	12,577,816
Net cost of outcome delivery	**19,890,289**	15,174,167

Note 17B: Major classes of expenses, income, assets and liabilities by outcome

	Outcome 1	
	2010 $	2009 $
Expenses		
Employee benefits	**1,789,821**	1,578,638
Supplier expenses	**2,030,459**	2,000,161
Depreciation and amortisation	**512,132**	554,483
Projects expenditure	**24,454,834**	23,618,702
Finance costs	**139,883**	0
Total	**28,927,129**	27,751,984
Income		
Income from Australian Government	**21,235,463**	16,298,959
Contributions	**8,581,974**	11,932,794
Sale of goods and rendering of services	**112,967**	212,025
Interest	**341,671**	431,563
Other	**227**	1,434
Total	**30,272,303**	28,876,775
Assets		
Cash and cash equivalents	**7,935,738**	3,677,468
Trade and other receivables	**2,001,083**	4,149,605
Other investments	**5,001**	5,001
Other	**0**	80,000
Infrastructure, plant and equipment	**242,640**	226,296
Intangibles	**2,455,433**	2,561,115
Total	**12,639,895**	10,699,486
Liabilities		
Suppliers	**160,135**	179,531
Projects	**939,781**	52,657
Other	**1,306,002**	1,707,593
Employee provisions	**468,466**	421,921
Total	**2,874,384**	2,361,702

Australia's marine exclusive economic zone covers 8.2 million square kilometres off Australia and its remote offshore territories with an extra 2 million in Antartic territorial waters.

IT'S JUST A MATTER OF SCALE(S)

Appendices

Appendix A: The FRDC's principal revenue base

As stipulated in the PIERD Act, and shown in figure 4, the FRDC's primary revenue source is based on:

A. the 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; and

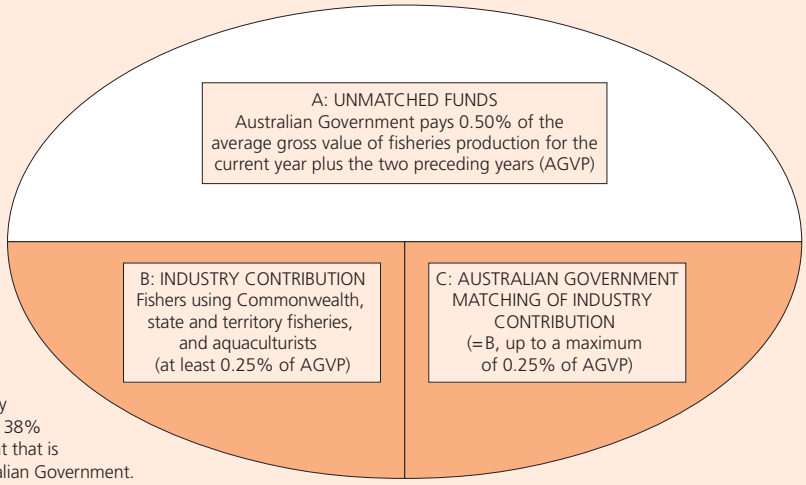
C. the Australian Government matches this amount up to a maximum of 0.25 per cent of AGVP.

There is no legislative impediment to fishers and aquaculturists contributing to the FRDC above the maximum level at which the Australian Government will provide a matching contribution.

Industry contributions for the past financial year and trends for the past five years are shown on page v.

Details of all FRDC revenue (including investments, royalties, and sales of products, information and services) are in the financial statements starting on page 101.

FIGURE 4: PROPORTIONS OF THE FRDC'S PRINCIPAL REVENUE BASE



In 2009–10, the industry contributed more than 138% of the maximum amount that is matchable by the Australian Government.

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.

Industry makes its contributions to the FRDC recognising that fisheries R&D will be oriented to its needs and will deliver economic and social benefits. In turn, the Australian Government's matching of the industry contributions is in line with policy principles that:

¬ beneficiaries from research should pay roughly in proportion to the benefits received; and

¬ the greater the spill-over benefits, the greater the proportion the Australian Government should contribute.

Appendix B: 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:

- the *Commonwealth Authorities and Companies Act 1997* (CAC Act);
- the *Primary Industries and Energy Research and Development Act 1989* (PIERD Act); and
- the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

CAC Act requirements

The CAC Act is the principal legislation that specifies the content and standards of presentation of statutory authorities' annual reports for parliamentary scrutiny.

Section 9 of the CAC Act requires the FRDC's directors to prepare an annual report in accordance with Schedule 1 each financial year, and to give it to the responsible minister by 15 October. Clause 10 of the CAC Orders specifies that the report of operations and future prospects (one of the three main elements of the annual report, the others being financial statements and a report by the Auditor-General) to include, among other things:

- a review of how the FRDC has performed during the financial year in relation to its statutory objects and functions, its R&D plan and its principal outputs and contribution to outcomes;
- factors influencing its performance over the financial year and in the future;
- significant events;
- operational and financial results, including principal outputs, major investing and financing activities, and key financial and non-financial performance indicators;
- significant changes in the FRDC's state of affairs or principal activities;
- developments since the end of the financial year; and
- matters required to be included by the PIERD Act and any other legislation.

PIERD Act requirements

The PIERD 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

(ii) the amount that it spent during the period in relation to each of those activities; and

(iia) which (if any) of those activities related to ecologically sustainable development; and

(iii) revisions of its R&D plan or annual operational 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:

(A) assets, debts, liabilities and obligations under section 144; and

(B) levies attached to Research Funds under the *Rural Industries Research Act 1985* under section 151 of this Act.

Further information on the PIERD Act in relation to the FRDC is in Appendix C.

EPBC Act requirements

Section 516A of the EPBC Act requires the FRDC to report on ecologically sustainable development and environmental matters. The specific reporting required by section 516A, and the FRDC's responses, are as follows.

- **The extent to which the principles of ESD have been internalised in decision-making systems and processes.** The objects of the FRDC, specified in the enabling legislation and detailed in Appendix C, focus its activities on economic, environmental and social matters (that is, the principal elements of ESD), including 'sustainable use and sustainable management of Australia's fisheries natural resources'. The first three of the legislated objects underlie the FRDC's vision, and are the basis for the planned outcomes of the three R&D programs. In pursuing these outcomes, the FRDC has fully internalised the principles of ESD in its decision-making systems and processes.
- **The contribution to ESD of the social, economic and environmental outcomes that the Australian Government is seeking.** Reporting of the three R&D programs (pages 25–67) addresses this requirement. In addition, Appendix D: Government priorities on pages 153–155 outlines expenditure against the broader government priorities including an environmentally sustainable Australia.
- **The environmental impacts of the FRDC's operations and actions, the measures being taken to minimise the impact on the environment, and the mechanisms for reviewing and improving performance**. The FRDC implements section 516A through two functions, as follows:
  - *R&D project management.* The FRDC identifies R&D needs, and the means of addressing them, through a planning process and by entering project agreements with research providers; 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. Before R&D projects start, the FRDC assesses their environmental impacts and ensures that appropriate approvals are obtained. The FRDC also has an entire R&D subprogram dedicated to developing an ESD reporting and assessment framework so that the industry can meet its obligations under the Act.
  - *FRDC internal operations.* Mechanisms for reviewing and improving performance are incorporated in the Corporation's ISO-certified quality management system, which provides a structure for continual improvement that permeates all management processes. The FRDC manages the process through Program 4 — the Management and Accountability Program.

A compliance index shows the page numbers on which the FRDC has reported on matters specified in Australian Government legislation and policies.

Appendix C: The FRDC's legislative foundation and the exercise of ministerial powers

Enabling legislation

The FRDC's enabling legislation is the *Primary Industries and Energy Research and Development Act 1989* (Commonwealth) (PIERD Act).

The FRDC Board is responsible to the Minister for Agriculture, Fisheries and Forestry and, through him, to the Parliament of Australia.

The objects, functions and statutory powers of R&D corporations are specified in the PIERD 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 PIERD 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 PIERD Act, are to make provision for the funding and administration of fisheries R&D with a view to:

- increasing the economic, environmental and social benefits to members of the Australian fishing industry and to the community in general by improving the production, processing, storage, transport or marketing of fish and fish products;
- achieving the sustainable use and sustainable management of Australia's fisheries natural resources;
- making more effective use of the resources and skills of the community in general and the scientific community in particular; and
- improving accountability for expenditure on fisheries R&D.

Functions

The functions of the FRDC, deriving from section 11 of the PIERD Act, are to:

- investigate and evaluate the requirements for fisheries research and development and, on that basis, prepare a five year R&D plan, review it annually and revise it if required;
- prepare an annual operational plan for each financial year;
- coordinate or fund the carrying out of R&D activities that are consistent with the annual operational plan;
- monitor and evaluate fisheries R&D activities that are funded and report on them to the Parliament; the Minister for Agriculture, Fisheries and Forestry; the Australian Seafood Industry Council; and the Australian Recreational and Sport Fishing Industry Confederation (trading as Recfish Australia); and
- facilitate the dissemination, adoption and commercialisation of the results of fisheries R&D.

Statutory powers

Subject to the PIERD 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 devises 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 on the following page has been drawn from several sections of the PIERD Act and has been condensed from the original in the interests of clarity.

Ministerial powers

Ministerial powers under the enabling legislation may be exercised by the Minister for Agriculture, Fisheries and Forestry. They relate to:

- directing the FRDC in writing as to the performance of its functions and the exercise of its powers;
- approving the R&D plan and the annual operational plan;
- requesting and approving variation to the R&D plan and the annual operational plan;
- requesting the establishment of a selection committee and determining certain conditions relating to the selection committee;
- appointing the presiding member and members of a committee for the selection of directors;
- determining the number of directors;
- determining the terms and conditions of appointment of directors (other than the Executive Director) in relation to matters not provided for by the PIERD Act;
- appointing the Chairperson;
- appointing directors, other than the Chairperson and Executive Director, from persons nominated by a selection committee;
- appointing a nominated director to be the Deputy Chairperson;
- 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 CAC Act relating to corporate governance and reporting are available to the Minister for Agriculture, Fisheries and Forestry; and the Finance Minister.

Exercise of ministerial powers during 2009–10 is described on page 88.

Appendix D: Government priorities

The National Research Priorities can be viewed at http://www.innovation.gov.au/Section/AboutDIISR/FactSheets/Pages/NationalResearchPrioritiesFactSheet.aspx

The Rural Research Priorities can be viewed at http://www.daff.gov.au/agriculture-food/innovation/priorities

National research priorities and their associated goals (for use with the tables on the following page).

Priority 1 — An environmentally sustainable Australia

A1 Water — a critical resource
A2 Transforming existing industries
A3 Overcoming soil loss, salinity and acidity
A4 Reducing and capturing emissions in transport and energy generation
A5 Sustainable use of Australia's biodiversity
A6 Developing deep earth resources
A7 Responding to climate change and variability

Priority 2 — Promoting and maintaining good health

B1 A healthy start to life
B2 Ageing well, ageing productively
B3 Preventive healthcare
B4 Strengthening Australia's social and economic fabric

Priority 3 — Frontier technologies for building and transforming Australian industries

C1 Breakthrough science
C2 Frontier technologies
C3 Advanced materials
C4 Smart information use
C5 Promoting an innovation culture and economy

Priority 4 — Safeguarding Australia

D1 Critical infrastructure
D2 Understanding our region and the world
D3 Protecting Australia from invasive diseases and pests
D4 Protecting Australia from terrorism and crime
D5 Transformational defence technologies

TABLE 7: 2009–10 TOTAL INVESTMENT — COMPOSITION OF GOVERNMENT RESEARCH PRIORITIES ATTRIBUTED TO EACH R&D PROGRAM ($ AND %)

2009–10 total investment — National Research Priorities								
Rural Research and Development Priorities (RRDP)	Program 1: Natural Resources Sustainability		Program 2: Industry Development		Program 3: People Development		Total expenditure	
	$000	%	$000	%	$000	%	$000	%
Productivity and adding value	682	2.8	2,912	12.1	446	1.9	4,040	17.0
Supply chain and markets	745	3.1	2,041	8.5	319	1.3	3,105	13.0
Natural resources Management	9,569	39.8	1,290	5.4	645	2.7	11,503	48.0
Climate variability and climate change	885	3.7	89	0.4	200	0.8	1,175	5.0
Biosecurity	320	1.3	517	2.2	151	0.6	988	4.0
Innovation skills	700	2.9	678	2.8	88	0.4	1,466	6.0
Technology	680	2.8	1,073	4.5	1.0	0.0	1,755	7.0
Other research								
Total	**13,582**	**57.0**	**8,600**	**36.0**	**1,850**	**8.0**	**24,032**	**100.0**

Figures in this table have been rounded, hence totals may not agree with component figures.

TABLE 7: (CONTINUED)

2009–10 total investment — National Research Priorities									
National Research Priorities (NRP)		Program 1: Natural Resources Sustainability		Program 2: Industry Development		Program 3: People Development		Total expenditure	
		$000	%	$000	%	$000	%	$000	%
An environmentally sustainable Australia	A1								
	A2	1,047	4.37	1,780	7.44	14	0.06	2,841	11.87
	A3								
	A4			15	0.06			15	0.06
	A5	9,425	39.37	1,275	5.33	667	2.79	11,366	47.48
	A6								
	A7	1,107	4.62					1,107	4.62
Promoting and maintaining good health	B1								
	B2								
	B3	31	0.13	326	1.36			357	1.49
	B4	89	0.37			638	2.66	727	3.04
Frontier technologies for building and transforming Australian industries	C1	618	2.58	358	1.50	23	0.09	999	4.17
	C2	392	1.64	2,493	10.41	4	0.02	2,889	12.07
	C3	128	0.54	463	1.93	7	0.03	598	2.50
	C4	257	1.07	106	0.44	2	0.01	365	1.52
	C5	8	0.03	971	4.05	287	1.20	1,266	5.29
Safeguarding Australia	D1								
	D2								
	D3	436	1.82	814	3.40	159	0.67	1,410	5.89
	D4								
	D5								
Total		**13,538**	**56.55**	**8,600**	**35.93**	**1,800**	**7.52**	**23,938**	**100.00**

Figures in this table have been rounded, hence totals may not agree with component figures.

Appendix E: Representative organisations

Guidelines on funding of consultation costs by primary industry and energy portfolio statutory authorities were issued by the Hon. John Anderson MP, Minister for Primary Industries and Energy in July 1998 under the relevant enabling legislation and in association with paragraph 16(1)(b) of the *Commonwealth Authorities and Companies Act 1997* (CAC Act) which obliges directors of a Commonwealth authority to provide the responsible Minister with such reports, documents and information as he or she requires.

As required by Section 5(b) of the Guidelines FRDC is required to report:

> *Where the statutory authority has authorised an industry organisation, with which it has a formal relationship under its enabling legislation, to undertake a discrete project or consultancy on its behalf as per Section 1(b) of these guidelines, then details of the nature, purpose and expected or final outcome of the project or consultancy should be provided concurrently, with details of any consultation funding, in the main body of the annual report.*

The following tables are a list of all project payments made to FRDC representative bodies in 2009–10.

COMMONWEALTH FISHERIES ASSOCIATION

2008/100	Tactical Research Fund: Investigating suitable units of certification in the Commonwealth fisheries for potential Marine Stewardship Council certification	$55,723
Total		**$55,723**

NATIONAL AQUACULTURE COUNCIL

2007/010	Integration of socio economic sustainability criteria into a reporting framework for the Australian aquaculture industry	$29,832
2009/303	Australasian Aquaculture 2010 to 2014	$1,050
2009/336	Indigenous Aquaculture Workshop 2010: Key participant travel bursaries	$22,000
Total		**$52,882**

RECFISH AUSTRALIA

2007/058	Strategic revenue options for the recreational fishing sector	$5,500
2007/227	Recfishing Research: National Strategy for Recreational Fisheries Research, Development and Extension	$130,700
2009/314	Strengthening partnerships and relationships within the recreational fishing sector	$15,598
Total		**$152,042**

Appendix F: Freedom of information statement

The *Freedom of Information Act 1982* (FOI Act) requires each Australian Government agency to publish a statement setting out its role, structure and functions, the documents available for public inspection, and access to such documents. Section 8 of the FOI Act requires each agency to publish information on the way it is organised, its powers, decisions made and arrangements for public involvement in its work. The following statement, in conjunction with information contained this annual report, is intended to meet the requirements of the FOI Act.

The Commonwealth's FOI legislation is administered by the Privacy and FOI Policy Branch of the Department of the Prime Minister and Cabinet (PM&C). More information is available from the PM&C website — http://www.pmc.gov.au/foi/index.cfm

Role, structure and functions

The FRDC's role is described on page xii 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 *
R&D funding applications	Files
Annual report	File, publications and FRDC website *
FISH magazine	File, publications 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 Business Development Manager: 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.

Unless you are seeking access to personal information about yourself, you will need to pay the standard FOI application fee of $30.00 when making your application. Additional processing charges may also apply.

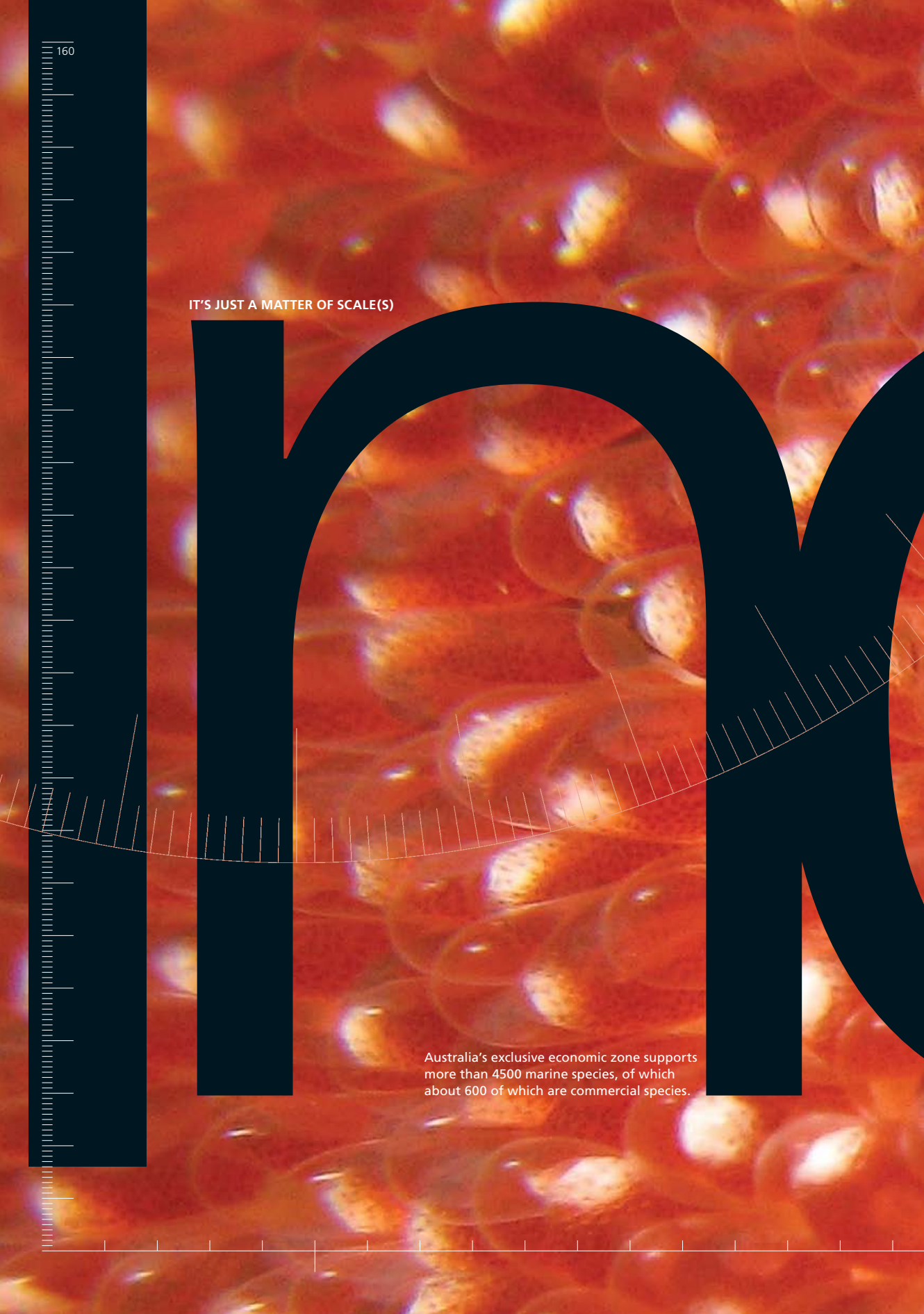
Documents are usually made available for direct access at the FRDC's office in Canberra. They may also be provided, depending on your preference:

- by mail (photocopies) to an address specified in your request, or
- at the Information Access Office (established by the Attorney-General) nearest where you live.

List of abbreviations

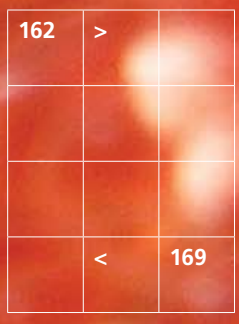
AASB	Australian Accounting Standards Board
AFMA	Australian Fisheries Management Authority
AICD	Australian Institute of Company Directors
AGVP	average gross value of production
ANAO	Australian National Audit Office
ARLP	Australian Rural Leadership Program
ASCo	Australian Seafood Co-products
ASMA	Australian Marine Science Association
BCA	benefit cost analysis
CAC Act	*Commonwealth Authorities and Companies Act 1997*
CEO	Chief Executive Officer
CRC	cooperative research centre
CRRDC	Council of Rural Research and Development Corporations
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAFF	Department of Agriculture, Fisheries and Forestry
DCCEE	Department of Climate Change and Energy Efficiency
DHA	docosahexaenoic acid
E&A	extension and adoption
EPA	eicosapentaenoic acid
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
ESD	ecologically sustainable development
FOI Act	*Freedom of Information Act 1982*
FRAB	Fisheries Research Advisory Body
FRDC	Fisheries Research and Development Corporation
GST	goods and services tax
GVP	gross value of production
ISO	International Organization for Standardisation
IT	information technology
NSW	New South Wales
NSILP	National Seafood Industry Leadership Program
NPF	Northern Prawn Fishery
NPV	net present value
OH&S	occupational health and safety
PIERD Act	*Primary Industries and Energy Research and Development Act 1989*
PIMC	Primary Industries Ministerial Council
PISC	Primary Industries Standing Committee
R&D	research and development
RD&E	research, development and extension
RDC	research and development corporation
SSA	Seafood Services Australia Ltd
TC	tropical cyclone
WAFIC	Western Australian Fishing Industry Council
WINSC	Women's Industry Network Seafood Community

IT'S JUST A MATTER OF SCALE(S)



Australia's exclusive economic zone supports more than 4500 marine species, of which about 600 of which are commercial species.

Indices



Compliance index

This index shows the page numbers on which the FRDC has reported on matters specified in Australian Government legislation and policies, and in the Global Reporting Initiative.

When this annual report has not addressed a compliance subject (usually because no activity occurred under that heading during the year), the subject entry is followed by '—' rather than by a page number.

Australian Government legislation and policies

The Australian Government legislation and policies with which the FRDC complies include the following:

- the FRDC's enabling legislation, the *Primary Industries and Energy Research and Development Act 1989* (PIERD Act);
- the *Commonwealth Authorities and Companies Act 1997* (CAC Act) and its supporting Commonwealth Authorities and Companies (Report of Operations) Orders 2008 made under section 48 of the Act (CAC Orders);
- the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act);
- other legislation, such as the *Freedom of Information Act 1982*, the *Occupational Health and Safety (Commonwealth Employment) Act 1991*, the *Disability Discrimination Act 1992* and the *Commonwealth Electoral Act 1918*;
- ministerial notifications of Australian Government policy, including national priorities for research and priorities for rural R&D;
- *Requirements for annual reports*, Department of the Prime Minister and Cabinet (PM&C), June 2001, approved by the Joint Committee of Public Accounts and Audit under sub-sections 63(2) and 70(2) of the *Public Service Act 1999*;
- other Australian Government guidelines; and
- recommendations by the Australian National Audit Office.

The document *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.

Commonwealth Authorities and Companies Act 1997 and CAC (Report of Operations) Orders 2008

Primary Industries and Energy Research and Development Act 1989

Other reporting requirements

Alphabetical index

D

E

F

G

H

Q

R

S

T

U

V

W

Publications and other information

The following information is available from the FRDC	Printed	Website
The RD&E Plan (Investing for tomorrow's fish: the FRDC's Research, Development and Extension Plan 2010–2015), which provides comprehensive information on the Corporation; 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.

www.frdc.com.au

The FRDC's website (www.frdc.com.au) provides easy access to information and publications, including the items on this page.

Photo credits: These are listed against page number, if images are from sources other than the FRDC.
xiv, 16, 72, 96, 100, 144, 160: Silke Baron/WikimediaCommons
x: Dylan Skinns, Austral Fisheries
xii, 76: Bruce Miller
2, 18, 20: Kallerna/WikimediaCommons
24: Sirrob01/WikimediaCommons
50: Matt Barwick, NPF Industry
55: Barendpt/WikimediaCommons

About this report

This report describes the extent to which the Corporation 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, 2009–10

An electronic version is at the FRDC website — www.frdc.com.au

Published by:	Fisheries Research and Development Corporation
Postal address:	Locked Bag 222, Deakin West ACT 2600
Office:	Fisheries Research House, 25 Geils Court, Deakin, Australian Capital Territory
Telephone:	02 6285 0400; from overseas + 61 2 6285 0400
Facsimile:	02 6285 4421; from overseas + 61 2 6285 4421
E-mail:	frdc@frdc.com.au
Internet:	www.frdc.com.au

ISSN 1039–3773 (soft cover). ISSN 1448–7810 (online).

Designed by Angel Ink
Printed by Blue Star Group

www.frdc.com.au

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 (RD&E) activities that benefit all sectors of the fishing industry. Our goal is for Australia's fisheries to be sustainably managed.