Australian Government

Fisheries Research and Development Corporation

Annual Report 2007–08

To the Parliament of Australia, the Australian fishing industry and other FRDC stakeholders

The Fisheries Research and Development Corporation (FRDC) is a co-funded partnership between its two stakeholders, the Australian Government and the fishing industry. The role of the FRDC is to invest in fisheries research and development (R&D) activities to benefit the three sectors of the Australian fishing industry — commercial (wild catch and aquaculture), recreational and indigenous.

Significant events in 2007–08

- New Minister for Agriculture, Fisheries and Forestry, the Hon. Tony Burke commences appointment.
- Industry continues to contribute in excess (130 per cent) of matchable government funds.
- Project 2005/083 — *Review and assessment of the impacts of the proposed broad areas of interest for Marine Protected Area (MPA) development in the South-east region* shown to have a benefit cost ratio of 959 to 1 and an estimated benefit to the Australian community of about $70 million.
- FRDC maintains its ISO 9001 quality certification.
- FRDC partner other rural research and development corporations in a new collaborative research initiative Climate Change Research Strategy for Primary Industries, to examine and respond to the impact of climate change on primary industries.
- Over 500,000 people watch FRDC research projects on the 'Escape with ET' television program every week.
- First collaborative research projects funded with the Seafood Cooperative Research Centre.
- Biennial Fisheries Research Advisory Body (FRAB) and Stakeholder workshop held.
- FRDC's People Development Program grows in strength.
- FRDC's *FISH* magazine seen as a leading fisheries research and development publication.
- Partnership with the Aquafin Cooperative Research Centre delivers considerable benefits to aquaculture sector.
- FRDC and Australian Fisheries Management Authority investment in the CSIRO Atlantis model wins the Minister for Science's prize.
- The 'Inshore Fishers Forum' commences with an industry meeting held in Victoria.
- Market development work continues with over 60 companies represented at the European Seafood Exposition in Brussels, and at trade shows in Sydney, Melbourne and Brisbane.
- Chef education program and industry tours continue in partnership with Lexus Awards for Excellence and other rural research and development corporations.
- Evidence shows that novel market development activities, such as the 'ugly endeavour prawn campaign' can increase the value of a sector.
- The first Nuffield Australia Farming Scholarship for a seafood producer awarded to oyster farmer Lester Marshall.

Quick guide to the Annual Report

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

1. For an outline of the **FRDC's investments and income**, read pages iii–vii and the financial statements starting on page 79.
2. For an **overview of operations** during the past year, read 'The directors' review of operations and future prospects' (pages 5–11).

More detailed coverage is in these sections:

- The key **strategic imperatives** that drive the FRDC's activities are shown on pages vii, xi–xiii.
- Details of **outcomes** achieved by recent and current projects are in the R&D programs reporting starting on page 14 (Natural Resources Sustainability Program), page 29 (Industry Development Program) and page 41 (People Development Program).
- The **performance reporting for the Corporate Program** is described on pages 60–69.
- Financial **contributions by industry and governments** are listed on pages iii and iv
- Coverage of **corporate governance** information is in the section starting on page 70.
- The **financial statements** start on page 79.

The fishing industry in which FRDC operates

TABLE 1. INDUSTRY RESULTS 2007–08*

Australian Fisheries Statistics*	2003–04	2004–05	2005–06	2006–07	Change %	
The wild-catch sector caught less and earned the same	$1.51 b for 231,000 t	$1.50 b for 236,000 t	$1.42 b for 192,000 t	$1.43 b for 186,000 t	$: 0.0% t: 3.0%	– ▼
The aquaculture sector earned and produced more	$724 m for 49,146 t	$634 m for 48,014 t	$748 m for 54,569 t	$793 m for 59,663 t	$: 6.0% t: 9.3%	▲ ▲
Overall production stayed relatively stable, with both sectors earning more	$2.21 b for 275,435 t	$2.09 b for 279,099 t	$2.14 b for 241,000 t	$2.18 b for 240,000 t	$: 1.8% t: 0.0%	▲ –

* The figures quoted from the Australian Fisheries Statistics are for 2006–07, and are from the latest edition that can be downloaded from the FRDC website www.frdc.com.au

The fishing industry is Australia's sixth most valuable food-based primary industry with a landed value of more than $2.1 billion a year. In addition more than 3.4 million Australians recreationally fish each year spending an 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.

Fish stocks are a valuable, community-owned, renewable resource. They are, however, limited and vulnerable. Therefore, it is important they are managed using the best possible information available at the time.

The FRDC (the Corporation) 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.

The Corporation also invests in industry development activities that aim to assist all sectors of the fishing industry to be more efficient and profitable. This research and development covers the spectrum of the supply chain from catching, through processing, and ultimately to the end consumer.

In addition, significant work is being undertaken to develop the people within the seafood industry by providing opportunities to build on skills helping to progress the industry.

The business environment in which FRDC operates is characterised by:

- government's priorities
- priorities of the three sectors of the fishing industry
- a high emphasis on natural resources management
- competing allocation needs of aquatic resource users
- geographic diversity — Australia's waters extend from the tropics to the Antarctic, and include both marine and freshwater
- a broad range of products, including 800+ commercial species,1000+ recreational species and 100+ farmed species, with a further 100+ protected species
- the need to include the large numbers of people involved across sectors and community groups — from catch (commercial, recreational and indigenous) through to consumer.

2007–08 achievements through investment

Five years at a glance

TABLE 2. FINANCIAL INDICATORS OF R&D INVESTMENT

Expenditure	2003 –04	2004 –05	2005 –06	2006 –07	2007 –08	Change	Direction of change
	$m	$m	$m	$m	$m	%	
Total expenditure	28.1	29.1	26.9	24.3	21.0	13	▼
Total of R&D projects *	25.1	25.6	23.9	20.8	17.3*	17	▼
– Program 1 (Natural Resources Sustainability)	13.8	13.9	12.1	11.1	8.7	22	▼
– Program 2 (Industry Development)	10.7	11.2	10.8	8.6	7.6	12	▼
– Program 3 (People Development)	0.6	0.5	1.0	1.1	1.1	0	–
Communications and extension	0.7	0.8	0.7	0.8	0.7	13	▼
– R&D Program 4 (Management and Accountability)	2.3	2.7	2.3	2.7	2.9	7	▲
	2003 –04	2004 –05	2005 –06	2006 –07	2007 –08		Direction of change
Number of approved new projects **	81	64	69	53	127		▲
Total number of active projects under management	494	426	433	399	430		▲
Number of final reports completed	122	106	88	67	79		▼

* The FRDC's 2007–08 Annual Operational Plan included $4 million revenue and expenditure for collaborative projects with the Australian Seafood CRC Limited. Following Australian National Audit Office advice, these moneys had to be eliminated from the accounts; despite that collaboration still taking place. Therefore a true reflection of the estimated expenditure for 2007–08 is $23.5 million. For 2007–08 the Board approved projects containing milestones valued at over $30 million; however project slippage was such that actual expenditure in the year only reached $17.4 million.

** The large increase from 2006–07 to 2007–08 is due mainly to new projects under the People Development Program (for example, bursaries and scholarships).

TABLE 3: INDUSTRY CONTRIBUTIONS TO FRDC AS A PERCENTAGE OF MATCHABLE GOVERNMENT CONTRIBUTIONS

	2003–04	2004–05	2005–06	2006–07	2007–08
Commonwealth	153	168	117	120	195
New South Wales	100	117	106	122	134
Northern Territory	105	89	105	197	476
Queensland	106	94	99	100	94
South Australia	110	111	165	183	145
Tasmania	82	100	135	109	105
Victoria	101	94	96	131	108
Western Australia	81	102	136	116	89
Total all fisheries	109	114	128	129	130

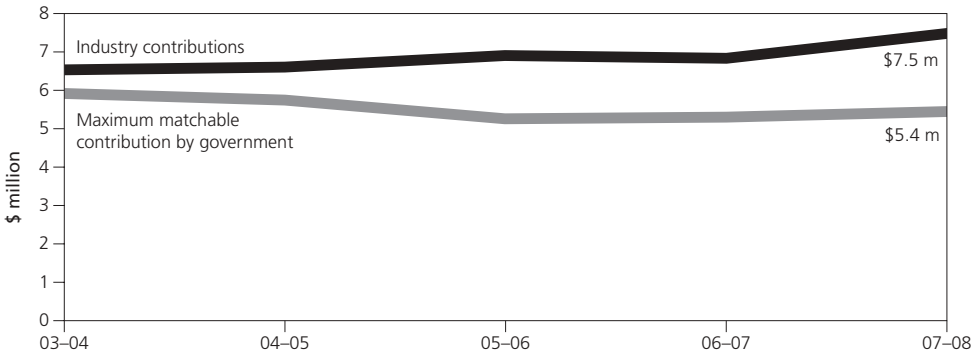
TABLE 4: INCOME TO THE FRDC

	2003–04	2004–05	2005–06	2006–07	2007–08
	$m	$m	$m	$m	$m
Industry contributions	6.5	6.6	6.9	6.9	7.5
Maximum matchable (government) contribution	5.8	5.4	5.2	5.3	5.4
Actual government matched *	5.8	5.4	5.2	5.3	5.4
Public good **	12.0	11.5	10.8	10.7	10.9
Total government contributions	17.7	16.9	16.0	16.0	16.3
Project funds from other parties	5.0	4.6	3.7	2.3	1.9

* 'Maximum matchable contribution' is the maximum amount to which the Australian Government will match industry contributions in accordance with the criteria detailed on page 122 (including when industry contributions exceed 0.25% of average GVP).

** 'Public good' is an Australian Government contribution set at 0.5% of average GVP, in accordance with the criteria detailed on page 122.

This year, the target for matchable contributions from industry was 85 per cent and the FRDC achieved 130 per cent ($7.5 million). The industry contribution this year increased marginally over the contribution for 2006–07. As a proportion of total FRDC revenue, industry contributions went up 2 per cent from 2006–07.



Summary of industry contributions

TABLE 5: INDUSTRY CONTRIBUTIONS, MAXIMUM MATCHABLE CONTRIBUTIONS BY THE AUSTRALIAN GOVERNMENT AND RETURNS ON INVESTMENT, 2007–08

Fisheries [see note 1]	A	B	C	D	E	F
	Maximum matchable contribution (0.25% of AGVP) ($) [see note 2]	Actual industry contribution 2007–08 ($) [see note 3]	B÷A as per cent	Distribution of FRDC R&D investments 2007–08 ($) [see note 4]	Return on contribution (D : B) [see note 5]	
					2007–08	5 years
Commonwealth total [6]	726,598	1,415,711	194.84	3,246,141	2.29	2.98
New South Wales total	317,094	425,765	134.27	983,294	2.31	5.58
NSW oyster aquaculture	88,687	84,031	94.75			
NSW other	228,406	341,733	149.62			
Northern Territory total	131,760	627,687	476.39	674,631	1.07	5.65
NT pearls and other aquaculture	62,833	497,687	792.08			
NT other	68,926	130,000	188.61			
Queensland total	672,101	629,568	93.67	1,973,232	3.13	4.29
QLD prawn aquaculture [7]	112,454	115,318	102.55			
QLD other	559,646	514,250	91.89			
South Australia total	946,803	1,528,091	161.39	3,280,821	2.15	4.07
SA Southern Bluefin Tuna [6,8]	361,166	—	—			
SA southern rocklobster [6]	203,296	266,906	131.29			
SA other	382,339	1,261,185	329.86			
Tasmania total	1,150,414	1,212,836	105.43	2,284,142	1.88	4.44
TAS salmon aquaculture [6]	522,418	400,000	76.57			
TAS southern rocklobster [6]	133,065	152,076	114.29			
TAS other	494,929	660,760	133.51			
Victoria total	243,792	262,111	107.51	745,861	2.85	5.47
VIC southern rocklobster [6]	36,900	35,852	97.16			
VIC other	206,892	226,259	109.36			
Western Australia total [8]	1,261,898	1,124,998	89.15	4,113,979	3.66	3.55
Total	5,554,036	7,226,771	130.12			

Notes for table 5 (Industry contributions)

(1) Individual fisheries are included where there is an Australian Government levy or a Memorandum of Understanding.

(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 122 (including when industry contributions exceed 0.25% AGVP.

(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 so FRDC investments (Column D) for 2007–08 and the previous four years. The figures for these five years are relevant to the 1995 Ministerial direction, summarised on page 71, concerning spending of industry contributions.

(6) Contributes to the FRDC under a Memorandum of Understanding.

(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 the Department of Agriculture, Fisheries and Forestry.

(8) There are timing issues in some jurisdictions:

- Some 2006–07 Western Australian contributions received in July 2007 were matched in 2007–08.
- Australian Government matching of industry contributions depends on cash actually received as opposed to the invoice being raised. Consequently, the FRDC was able to achieve the full 0.25% AGVP matching for Western Australia in 2007–08.
- South Australian Southern Bluefin Tuna contributions relating to 2007–08 were not invoiced until after the end of the financial year and therefore do not appear in 2007–08.

Forecast budget 2008–09

	$	$
REVENUE		
Australian Government 0.5% AGVP	11,061,193	
Australian Government matching of industry contributions	5,530,597	
Total revenues from the Australian Government		**16,591,790**
Contributions revenue		
Fisheries managed by:		
Australian Government	1050,000	
Australian Capital Territory	20,000	
New South Wales	380,000	
Northern Territory	540,000	
Queensland	625,000	
South Australia	2,075,000	
Tasmania	1,000,000	
Victoria	350,000	
Western Australia	1,300,000	
Sub-total	**7,340,000**	
Other project income	2,300,000	
Total contributions revenue		**9,640,000**
Interest		270,000
Sales of goods and services		550,000
Other income		5,000
TOTAL REVENUE		**27,056,790**
EXPENDITURE		
Projects expenditure		
Natural resources sustainability	10,500,000	45%
Industry development	10,500,000	45%
People development	2,400,000	10%
Total programs		**23,400,000**
Communications		**685,000**
Programs support		
Employees		1,615,000
Suppliers		**803,000**
Depreciation and amortisation		**547,000**
Net write down of assets		**0**
Other expenses		**0**
Total programs support		**2,965,000**
TOTAL EXPENDITURE		**27,050,000**
Net result for the year		**6,790**

About the FRDC

The Fisheries Research and Development Corporation (the Corporation) is a co-funded partnership between its two stakeholders, the Australian Government and the fishing industry.

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

The Corporation invests strategically across Australia in R&D activities to benefit the three sectors of the fishing industry — commercial (wild catch and aquaculture), recreational and indigenous.

The 'fishing industry' is defined in the *Primary Industries and Energy Research and Development (PIERD) Act 1989* such that it includes any industry or activity carried on in or from Australia concerned with:

- taking
- culturing
- processing
- preserving
- storing
- transporting
- marketing
- selling, of

fish or fish products.

The FRDC, therefore, invests in R&D along the whole value chain of the seafood industry sectors.

The Corporation provides research administration and services using a value-adding model. Unlike a simple 'granting' model, this involves significant management of R&D through a variety of flexible approaches. These include open call applications; formal Memoranda of Understanding (MOUs) with industry sectors; specific subprograms tailored to industry sectors or activities; short-term Tactical Research Funding, and specifically targeted commissioned R&D; and a dedicated People Development Program. While 'granting' research and development funding can be carried out at minimal cost, the costs of running a value added service are significantly higher, with this approach providing a greater return on investment and increased impact through adoption. The Corporation is able to achieve this result through its continual investment in systems and procedures that deliver best practice in integrated project, financial and human resource management.

The five strategic research and development challenges for the FRDC

The Corporation has aligned its planning, management and reporting of R&D program activities to the objects of the PIERD Act 1989 — see Appendix B. This alignment is reflected in the Corporation's three R&D programs with the focus of each program further described under five strategic challenges specified in the R&D plan. The R&D programs and associated strategic challenges are as follows:

Program	Strategic challenges
1. Natural Resources Sustainability	*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.
2. Industry Development	*Challenge 3: Response to demand; profitability* Respond to, and take advantage of, increased demand for seafood and for recreational and customary fishing experiences.
3. People Development	*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.

These challenges describe those factors that, during the next 20 years, will be of most importance for the economic, environmental and social wellbeing of the three sectors of the fishing industry, and for the Australian community. By focusing directly on these strategic challenges, the FRDC ensures that it addresses the most important factors in the business and external environment, and focuses R&D on outcomes and not inputs.

Strategic partnerships

In addressing the five strategic challenges, strategic directions are established in association with industry stakeholders and research partner 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.

A key partner for the FRDC are the other 15 research and development corporations (RDCs). FRDC works with the RDCs on a broad range of issues facing primary producers in Australia. The FRDC Chair and Executive Director and senior staff are members of the various joint RDC committees, including the Council of Chairs. For more information on RDC collaboration see page 62.

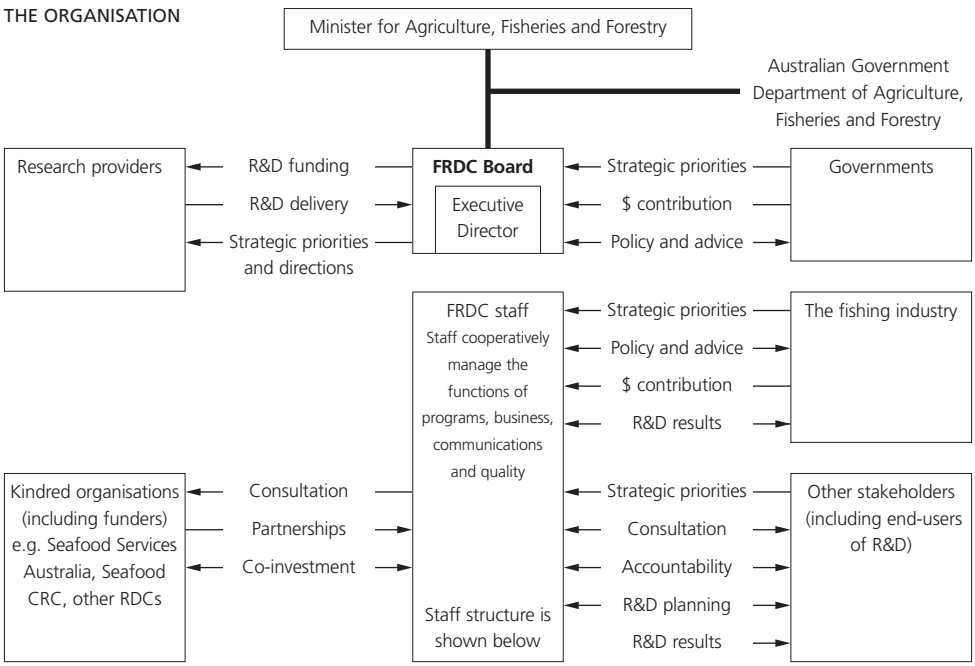
The Corporation has many partners in both the research funding and service provision areas, with one of our newest partners being the Seafood Cooperative Research Centre (Seafood CRC). The Corporation, as a core participant of the Seafood CRC, will invest over $24 million in cash and $1.4 million in-kind, over the Centre's 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 Corporation's R&D program, and in particular Program 2: Industry Development. This partnership is one innovative way the Corporation extends its activities further along the value chain and enhance improvements in industry productivity.

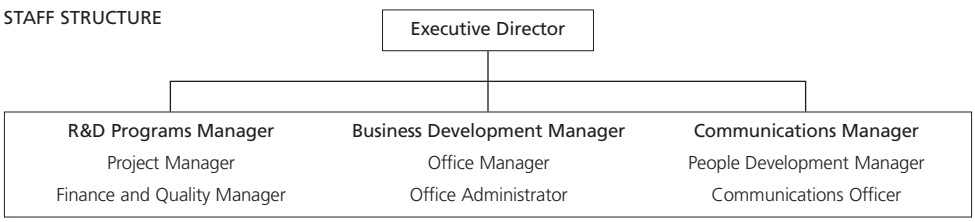
This innovative approach to investment provides the FRDC a great deal of flexibility, while at the same time enabling it to work as a virtual organisation many times its size.

Stakeholders and staffing

The FRDC's stakeholders are the fishing industry; the federal, state and territory governments; and the people of Australia.

FIGURE 1: THE FRDC'S STAKEHOLDER FRAMEWORK AND STAFF STRUCTURE





The three visions of the FRDC

For the industry

The commercial sector of the fishing industry is internationally competitive and profitable over the long term. The commercial, recreational and indigenous sectors use aquatic resources in a sustainable way; are characterised by a learning culture; and are forward-looking, innovative, professional and socially resilient.

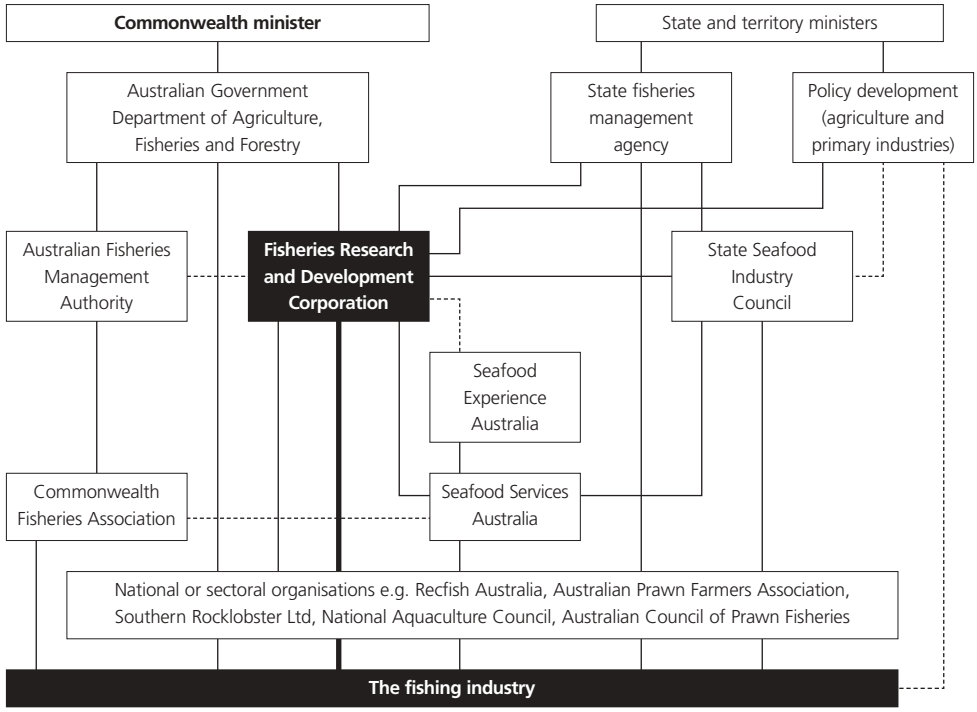
For the community and consumer

The community and consumers are supportive of the fishing industry and the natural resources on which the industry depends.

For fisheries and aquaculture research

Fisheries and aquaculture research is innovative and responsive to the needs of the Australian community, the fishing industry, and the aquatic ecosystems on which they depend.

FIGURE 2: THE FRDC'S OPERATING CONTEXT



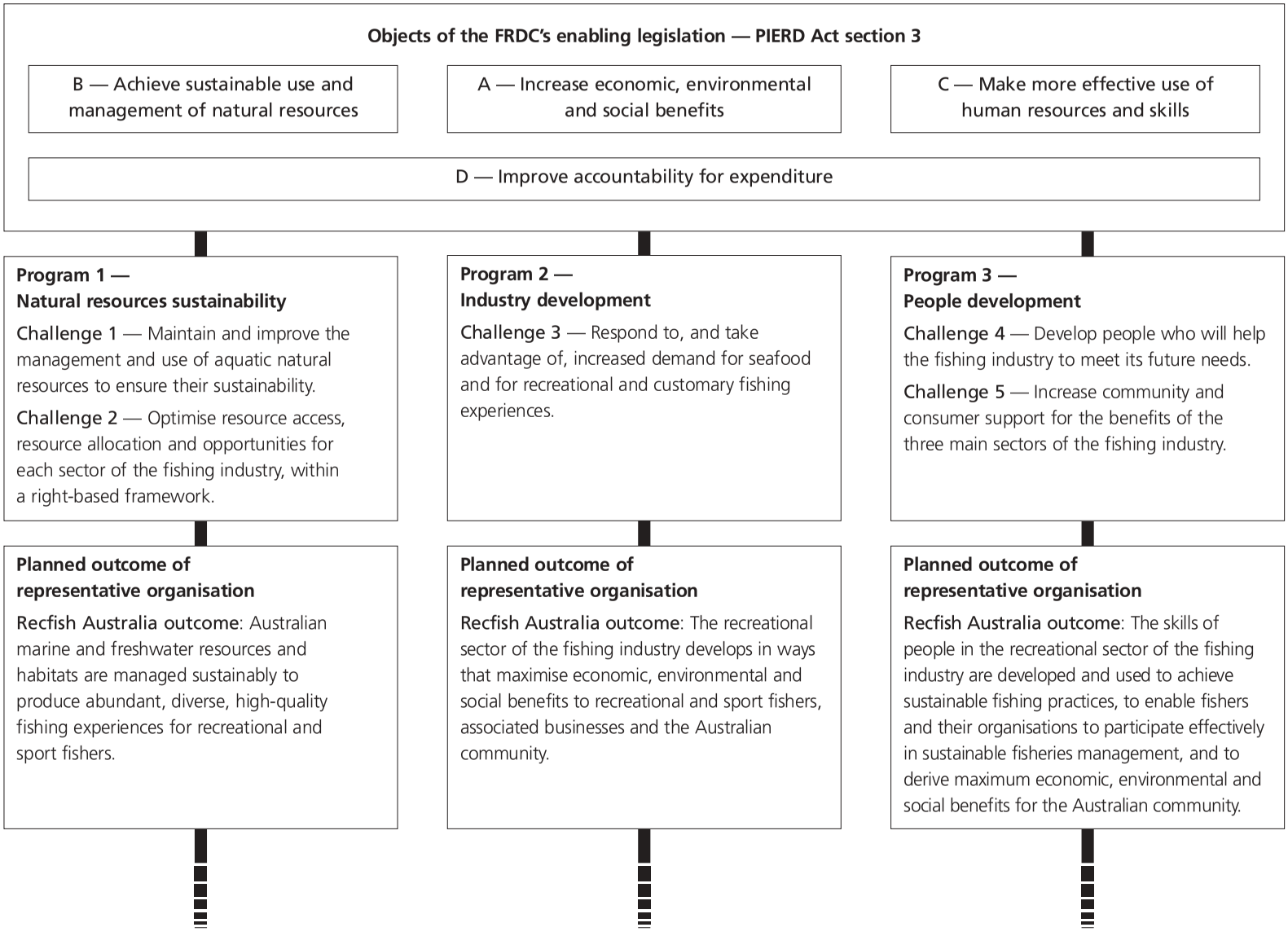
The Corporation's mission

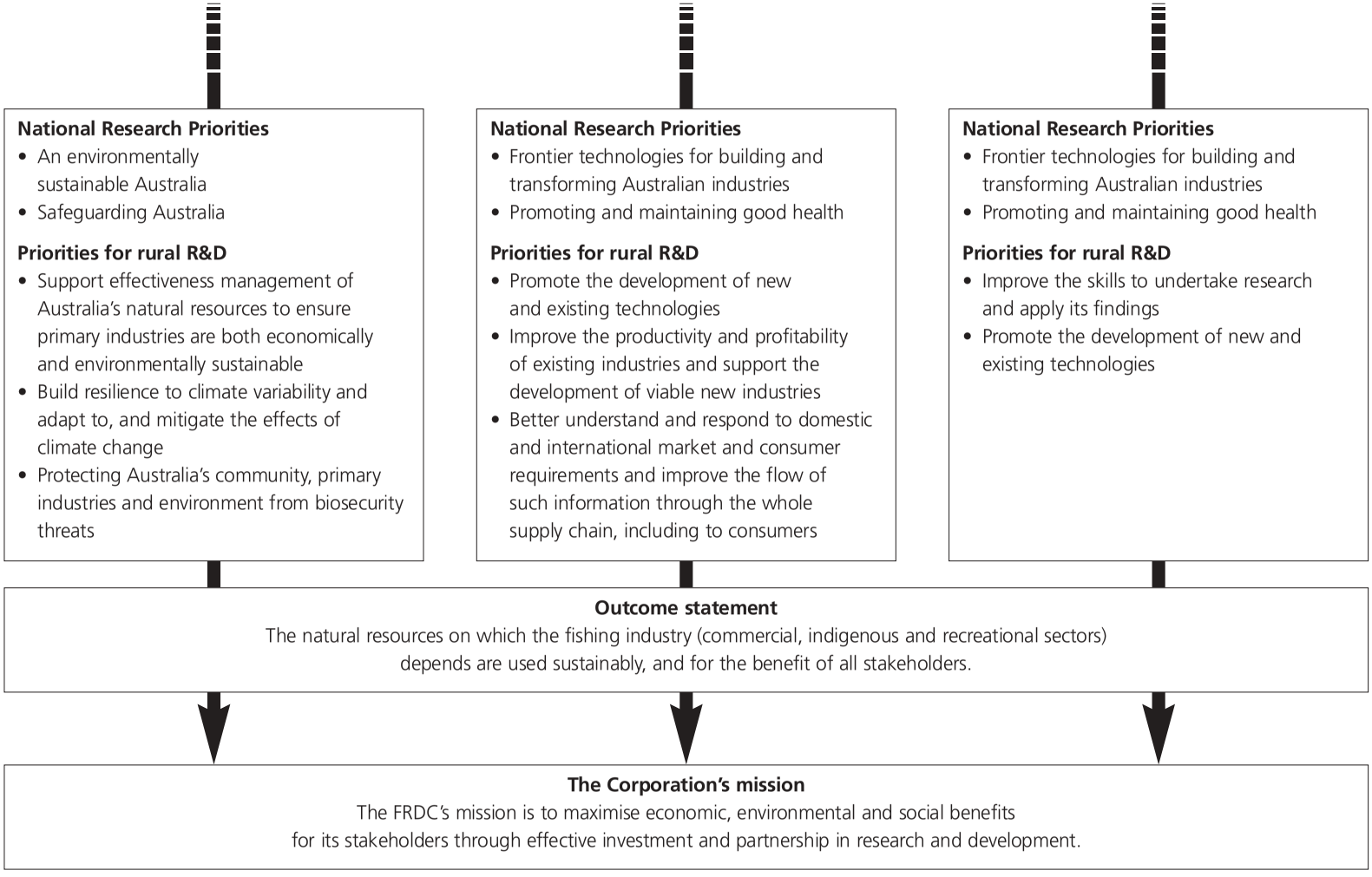
The FRDC's mission is to maximise economic, environmental and social benefits for its stakeholders through effective investment and partnership in research and development.

The planned outcome for the Corporation

The natural resources on which the fishing industry (commercial, indigenous and recreational sectors) depends are used sustainably and for the benefit of all stakeholders.

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




National Research Priorities
• An environmentally sustainable Australia
• Safeguarding Australia
Priorities for rural R&D
• Support effectiveness management of Australia's natural resources to ensure primary industries are both economically and environmentally sustainable
• Build resilience to climate variability and adapt to, and mitigate the effects of climate change
• Protecting Australia's community, primary industries and environment from biosecurity threats
National Research Priorities
• Frontier technologies for building and transforming Australian industries
• Promoting and maintaining good health
Priorities for rural R&D
• Promote the development of new and existing technologies
• Improve the productivity and profitability of existing industries and support the development of viable new industries
• Better understand and respond to domestic and international market and consumer requirements and improve the flow of such information through the whole supply chain, including to consumers
National Research Priorities
• Frontier technologies for building and transforming Australian industries
• Promoting and maintaining good health
Priorities for rural R&D
• Improve the skills to undertake research and apply its findings
• Promote the development of new and existing technologies
Outcome statement
The natural resources on which the fishing industry (commercial, indigenous and recreational sectors) depends are used sustainably, and for the benefit of all stakeholders.
The Corporation's mission
The FRDC's mission is to maximise economic, environmental and social benefits for its stakeholders through effective investment and partnership in research and development.

Australian Government
Fisheries Research and Development Corporation

12 August 2008

The Hon. Tony Burke MP
Minister for Agriculture, Fisheries and Forestry
Parliament House
CANBERRA ACT 2600

Dear Mr Burke,

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 2008. It is forwarded in accordance with section 9 of the *Commonwealth Authorities and Companies Act 1997* (CAC 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 judgement of the Corporation's performance during the year ended 30 June 2008 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

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FISHERIES RESEARCH AND DEVELOPMENT CORPORATION

Annual Report 2007–08

Contents

The report of operations explicitly addresses section 9 of the *Commonwealth Authorities and Companies Act 1997* and includes material required by other legislation, particularly the *Primary Industries and Energy Research and Development Act 1989* and the *Environment Protection and Biodiversity Conservation Act 1999*.

Certificate concerning the Report of Operations

The directors of the FRDC are responsible, under section 9 of the CAC Act, for preparation of the following report of operations in accordance with the CAC Orders.

This report of operations is made in accordance with a resolution of the directors at their meeting of 12 August 2008.

The date of the report is 26 September 2008.

Peter Neville
Chairman

Certificate concerning the Global Reporting Initiative

This annual report was prepared in accordance with the 2006 Global Reporting Initiative guidelines and represents a balanced and reasonable presentation of the Corporation's sustainability performance.

[A compliance index for reporting against the Global Reporting Initiative is on page 136.]

Peter Neville
Chairman

Report of Operations — Part 1

The Directors' review of operations and future prospects

The Directors' review of operations and future prospects

A climate of change has been the underlying theme for the FRDC in 2007–08. A new Federal Government and Minister for Agriculture, Fisheries and Forestry, the Hon. Tony Burke MP, has changed the focus of government agencies, and all sectors of the fishing industry continue to face tough conditions with an ever-evolving environment, both domestically and internationally. The FRDC has been working through a number of internal changes; to processes, policies and funding focus, in order to keep in step with the business environment.

A year of change and increasing costs

The seafood industry has experienced another hard year. Two key issues, both of which are outside the industry's control — fuel prices and the appreciating Australian dollar continue to heavily impact the sustainability and profitability of the industry. The recreational sector has seen reduced access to recreational fish stocks, and indigenous communities were increasingly in the public spotlight.

In 2007–08 the key drivers and issues for the commercial seafood industry were:

- an increase in the value of the Australian dollar
- escalating fuel prices
- responding to community concerns
- competition in key export markets and from imports
- increasing demand for seafood
- restructuring of catching and processing sectors
- skilled labour shortages
- tariffs and trade barriers
- resource access (new aquaculture developments, Marine Protected Areas etc.).

In May 2007, the FRDC conducted its biennial Fisheries Research Advisory Board (FRAB) and Stakeholder workshop in Canberra. The workshop, attended by over 50 leading industry and research stakeholders, provided the FRDC with an opportunity to listen to the key issues facing industry. Stakeholders identified that better performance measurement was essential, and that the FRDC needs to focus on the benefits of its R&D investment, not on inputs. In addition, stakeholders asked that the FRDC explore options to assist them create a levy base to support marketing activities.

Responding to government

The election of a new Federal Government has seen a change in policy focus for primary industries. Climate change, a shrinking world and biosecurity have been elevated in priority. This has resulted in the FRDC developing a climate change program and the development of the Seafood Trade and Market Access Forum in partnership with Seafood Services Australia (SSA) and the Seafood CRC.

Climate change poses both challenges and opportunities for Australia's wild fisheries and aquaculture sectors. FRDC has been participating in the development of an effective strategic framework to enhance each sector's adaptive capacity and to mitigate against further climate change. This builds on the vast bank of research undertaken over the past decade looking at climate variability and its impact on the fishing industry.

The need for the Fisheries Climate Change Action Plan was identified as part of the National Climate Change Adaptation Framework that was endorsed by Council of Australian Governments in April 2007 as the basis for government action on adaptation over the next five to seven years. The framework recognises that Australian commercial, indigenous and recreational fisheries will be affected by climate change through: increasing ocean temperatures, changes to ocean currents, wind and nutrients, changed rainfall patterns, and ocean acidification.

FRDC clearly has a role at the national level; to coordinate the fisheries climate change R&D with Australian, state and territory government agencies, industry, and stakeholders.

FRDC's funding framework

Changes to the FRDC funding framework were introduced early in 2006–07. The changes did not come without problems and considerable time and resources were employed to explain the new system to stakeholders. The framework resulted in a more explicit policy focus on how and what the FRDC funds. In particular, public good funds will be directed towards issues that will help ensure Australia's fisheries resources are sustainable and provide a benefit to the Australian community. Industry development activities will be the main focus of Tactical Research Fund (TRF) investment and the FRDC will aim to align the needs of industry with the People Development Program.

The aim of the TRF is to allow the FRDC to provide investment funds to its stakeholders in a timely manner to take advantage of opportunities, avert threats, or manage unforeseen events, as they arise. Investments have included developing technologies to reduce dolphin interactions, reducing bycatch through implementing T90 mesh in trawl nets, evaluating the economic value of the aquarium industry and responding to the abalone virus in Victorian waters.

The new People Development Program has exceeded expectations and industry and government support for the program is very high. Already there is evidence that the more focused capacity building and culture change is delivering benefits.

In addition, the FRDC has built on the partnership with the new Seafood CRC, aligning both organisation's processes and funding priorities. FRDC is a major contributor as well as a service provider to the Seafood CRC. This has facilitated the speed in which the Centre has been able to establish its processes and initiate R&D projects.

Recfishing Research — a national approach

July 2007 saw the beginning of Recfishing Research. This is an initiative of Recfish Australia and the FRDC. The purpose of Recfishing Research is to target investment and the return on investment in recreational fishing research, development and extension (R, D & E) at a national scale.

National priorities for Recfishing Research have been established and refined in consultation with key stakeholders. By nature, the priorities for the recreational sector are public good focused, with a strong emphasis on sustainability of the resource and improving the quality of the recreational fishing experience. Key priorities include:

- establishing and promoting the social and economic importance of recreational fishing
- assuming a greater responsibility for, and developing the R, D & E capacity of the recreational industry
- developing young people and industry leaders
- continuing the research and promotion of best practices in recreational fishing (to ensure fishing is sustainable, ethical and humane)
- understanding ecologically sustainable development (ESD) effects of marine and freshwater stock enhancement and recovery
- improving fish welfare
- understanding the effects of climate change on recreational fishing
- improving the communication of research results and outcomes to recreational fishers and others.

Business improvements

The FRDC underwent its triennial ISO 9001 audit on 12–13 November 2007 and maintained its status of a quality certified organisation.

During the year FRDC participated in, and met the requirements of, a number of Commonwealth Government activities. This included responding to, and implementing the whole of government security policy (where required, making changes to policies and procedures), developing a statement of expectations, and meeting increased compliance reporting. In addition, the FRDC worked collaboratively with other RDCs to develop a framework for assessing the benefit cost ratio for R&D activities, and to respond to the Cutler review of innovation call for submissions.

The redevelopment of FRDC's information technology (IT) system FishBase to the new OmniFish platform was completed late in 2007–08. OmniFish and FRDC's online application program FishNet are at the heart of FRDC processes and constitute a fully integrated project and financial management system. The new platform is designed to be scalable and capable of implementing greater online functionality. This will ensure that research providers will increasingly have greater access in the future to project information, allowing greater transparency of FRDC's operations. As part of the redevelopment FRDC worked with partner organisations (Australian Fisheries Management Agency, Australian Pork and the Seafood CRC) who use both FRDC project management systems.

Board performance review

The Board undertook a review of its operations during 2007. The purpose of the review was to look at the performance and processes of the Board in order to identify its key strengths, its opportunities for enhancement of efficiency and effectiveness, areas for further development; and to develop clear key performance indicators (KPIs) that could be used to enhance the Board's performance.

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As a result of the review the Board will develop KPIs that will enable it to:

- address the objects of the *Primary Industries and Energy Research and Development Act 1989* (the PIERD Act), through the review of the Board's role and processes, and the role of the FRDC
- continue to address the National and Rural Research and Development Priorities in its investment decisions and reporting through, for example, an enhanced strategic framework and communication and consultation process
- achieve enhanced performance reporting to the FRDC's stakeholders
- continue to benefit from open two-way communication with key stakeholders in relation to both opportunities and outcomes, and their impact on the industry.

Thanks

The Board would like to thank all staff and stakeholders who have contributed to FRDC's successes over the last 12 months. FRDC welcomes feed back, so please let FRDC directors know what your thoughts are after reading this annual report.

The year ahead

In 2008–09 the Corporation will continue to focus on investment in priority areas. Greater emphasis will be given to dissemination of R&D outcomes to ensure adoption is achieved. The Corporation will work with partner organisations and stakeholders to ensure adoption from its investment is maximised.

To ensure the Corporation meets stakeholder needs, and increases the speed of output delivery, the Corporation is improving the way it invests in R&D. This involves a mixture of funding mechanisms that are more flexible and better tailored to beneficiary needs and planned outcomes.

In the future, innovation will become a key focus for the Corporation, and includes identifying the drivers for innovation and their measurement. The Corporation will move from projects that deliver evolution to investing in projects that allow for stepped change in knowledge and its adoption. This will be a key factor for future FRDC investment and to this end, the Corporation will be collaborating with other RDCs in projects to measure productivity increases and innovation improvements.

The Corporation will engage, and partner other RDCs and funding bodies at both a national and regional level to facilitate collaboration on climate change. In particular, FRDC will work collaboratively with other RDCs on the Climate Change Research Strategy for Primary Industries, to help primary industries respond to climate change by investing in R&D. This program will be undertaken in association with members of the Primary Industries Standing Committee. In addition, the FRDC will work with, and respond to, the Department of Agriculture, Fisheries and Forestry's (DAFF) Fisheries Climate Change Action Plan that is due for release in late 2008.

The Corporation is committed to re-structuring its research service provision to develop 'centres of excellence' to increase efficiency, minimise duplication of effort and enhance skills development. One example is the development of a chair of fisheries economics in partnership with the University of Tasmania.

The new Seafood CRC is looking to increase the seafood industry's capacity to undertake R&D activities across the entire seafood supply chain. For the Corporation this will mean looking at how it maximises opportunities with the Seafood CRC — namely investing in R&D in a coordinated manner.

The FRDC's investment in the Seafood CRC falls within established R&D criteria for the Corporation and enables it to leverage additional funds, particularly for industry development, value-adding and export growth projects — areas on which the Australian Government has placed a priority.

Strategic investment in issues facing the recreational and indigenous fishing sectors will be coordinated with input from key stakeholder groups. Recfishing Research will provide the central point from which R&D projects will be identified for the recreational sector. The FRDC will establish strategic partnerships with indigenous groups in regions such as the Torres Strait, to identify and invest in projects relevant to the indigenous sector.

FRDC will work with Seafood Services Australia (SSA) and Seafood Experience Australia (SEA) to address market trade and access development to increase the industry's export capacity; as well as funding specific R&D projects targeted at export growth and product diversification. Further, the Corporation will work with SEA to further develop and implement a platform for promoting and marketing seafood.

A key area of focus for the Corporation in 2008–09 will be the ongoing implementation of the People Development Program, which will guide investment in the people, communities and networks that constitute the fishing industry. Significantly, the program will aim to maximise its return to industry through working collaboratively with other RDCs to fund activities in this area. Investment in social capital, skills and personal development has been identified by the Australian Government and industry as a limiting factor to development.

In 2008–09 the Corporation will release a new document that will provide a concise overview of its strategic plan — *Investing for tomorrow's fish: the FRDC's research and development plan 2005–2010*, and its shorter companion document, and its Annual Operational Plan.

Report of Operations — Part 2

The FRDC's operational results

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 are responsible for managing the fisheries and aquaculture activities within their jurisdictions. Large components of the R&D undertaken by the FRDC focuses on providing information that will assist these agencies improve the sustainable use of Australia's aquatic resource. The projects outlined on the following pages highlight the diversity and excellence of the FRDC's current research portfolio. For a full listing visit the FRDC website — www.frdc.com.au

Principal inputs

During 2007–08, $8.7 million (50 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
Self-managed or co-managed fisheries governance structures and processes developed and a minimum of five fisheries brought under self management.	Commenced
A 30% reduction in fisheries that are overfished or of an unknown status.	Commenced
Increased utilisation of fisheries R&D outputs by fisheries management agencies.	Commenced
Development of formal socio-economic assessments for incorporation into fisheries resource allocation processes.	Commenced
Evidence of improved use of spatial management as a tool for fisheries management.	Commenced

Program 1 has historically received higher levels of investment than the other two FRDC programs. Natural resources sustainability is an important component of the utilisation of resources and, as such, receives a considerable quantum of R, D & E funds.

In the last few years, there has been a shift away from pure biological research to alternative management and harvest strategies, more appropriate spatial scales of management and the greater understanding of the environmental drivers to stock status.

Previous models and management regimes have operated on a species, fishery or jurisdictional basis. Increasingly through better understanding of individual species and their habitats, managers are finding that management at smaller spatial scales may be appropriate in certain circumstances. To this end, fine scale spatial mapping, modelling and stock assessments are being undertaken to refine the management of several species, including Grey Mackerel, Spanish Mackerel, Dhufish, Samsonfish, abalone and rocklobster.

Given the move to alternative harvest strategies, current cost structures, the increasing move to cost recovery for management of fisheries, and the need for management efficiency, the momentum for co-management is building. A recent review commissioned by the FRDC Board has been distributed to the Australian Fisheries Management Forum and research activity in this area is increasing. A large study by the Australian Fisheries Management Authority (AFMA) has recently begun to assess further co-management in Commonwealth fisheries and this is being completed by two projects with the Spencer and Exmouth Gulf Fisheries.

The growing demand for fair and equitable allocations of resources to all interested user groups is of increasing importance. This includes allocation and access to commercial and recreational user groups. However, it is not restricted to extractive user groups but includes allocation for conservation management as well as determination of access to spatially managed areas. To this end, a working group, chaired by Professor George Kailis, has been established to assist in the further prioritisation and sourcing of R, D & E within this area.

The need to meet, and in some cases, exceed regulatory requirements of natural resource and environmental legislation such as the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) and improve fisheries environmental management performance has been an integral part in many projects undertaken during the year. Threatened, endangered and protected species are a concern of the community and the potential for interaction by fishing activities can often result in negative perceptions. Industry and managers have been proactive in their approach to mitigate any potential, or real, impact. For example, research is ongoing to understand the foraging ranges of sea-lions in order to inform fisheries spatial management, develop mitigating technologies to reduce interactions with fishing gear, develop and implement codes of practice, and distribute educational material, to ensure best practice is followed.

An outcome of this work has been the reduction in some jurisdictions of the number of fisheries that are deemed as over fished. In the 2008 Bureau of Rural Sciences *Fishery Status Report* (for Commonwealth Fisheries) showed two fisheries moving into the 'Not over fished' category. This trend is also starting to be seen in the status reports of state managed fisheries.

During the year considerable work was undertaken with all researchers to ensure that adequate communication and extension strategies were in place to disseminate research findings to stakeholders.

Program 1 — achievements and activities

Understanding climate change on fisheries

Project title — Climate change and *Fisheries Status Report* (project 2007/054)

Climate variability has long been a significant factor affecting Australian fisheries and aquaculture operations. Strong evidence now exists that climate change is occurring and it is likely that the impact on Australian ecosystems will vary spatially and temporally. This will result in varied impacts on Australia's fisheries resources.

To position itself, and better inform its decision-making ability the FRDC undertook a review of Australia's current capacity to undertake research and development into the potential impacts of climate change on Australian fisheries and aquaculture. The resulting report provided FRDC with some clear recommendations on a course of action for fisheries climate change research and development.

The impact of climate change has been analysed comprehensively in two reviews commissioned by the Australian Greenhouse Office. The types of environmental variables likely to be driven by a warming climate include changes in temperature, ocean currents and chemistry (predominantly acidification), winds, nutrient supply, river run off, sea levels, rainfall and extreme weather. These are expanded in table 6 (opposite). These in turn are likely to affect key biological attributes of commercially important species and ecosystems including phenology and physiology, range and distribution, composition and interactions within communities, and structure and dynamics of communities.

TABLE 6: LIKELY BIOPHYSICAL CHANGE FROM CLIMATE CHANGE

Sea level rise and storms	• a rise in sea level from thermal expansion of the ocean and glacial melt, and increased frequency or intensity of extreme storms — leading to higher risk of inundation and flooding • shoreline erosion and realignment leading to loss of amenity or damage to assets (natural and man-made)
Warmer ocean temperatures	• increased frequency of coral bleaching events (present models project the Great Barrier Reef will warm by 2–5°C by 2100) • potential impacts on biodiversity by affecting the distribution and reproductive patterns of marine organisms, and consequently food web dynamics (productivity)
Ocean acidification	• increased CO_2 concentration in sea water is altering ocean chemistry, making it more difficult for calcitic organisms such as coccolithophores, corals and molluscs to grow and function
Tropical cyclones and storm surges	• combined with higher sea levels, the projected increase in frequency and intensity of tropical cyclones would cause more frequent and intense coastal flooding • tropical cyclones may occur further south than they do at present • there are likely to be shifts in prevailing wind and wave climates
Decreased rainfall and drought	• warmer temperatures will cause greater evaporation, increasing the severity of drought for a given decrease in rainfall
Run-off changes	• changes in climate over land will cause changes in run-off reaching coastal and marine systems and alter the availability and quality of freshwater — this has implications for productivity and ecosystem function of coastal and estuarine environments • related changes in riverine flooding frequency and intensity
Ocean stability and currents	• changes to wind and water temperature affect water column stratification and stability — leading to changes in upwelling of nutrient rich deeper waters and productivity of surface waters • Changes to ocean currents, notably the East Australian and Leeuwin currents, may affect dispersal and distribution patterns of marine organisms
El Niño–Southern Oscillation	• some models suggest global warming may lead to an increase in the frequency or intensity of El Niño events — if so, Australia may have more intense droughts and La Niña floods, particularly in the eastern part of the country
Increased fire and wind	• increased frequency and/or intensity of aeolian dust and fire-borne particulates can affect coastal productivity and promote blooms

The impact of climate change on Australian fisheries is likely to be very large. Not all of those impacts will be negative. It is critical to identify and develop opportunities arising from climate change. An initial investment identifying the threats and opportunities would build on the substantial achievements of recent years in structural reform to improve the sustainability of Australian fisheries. It would be a critical insurance premium for a $5 billion sector of the economy, comprising its wild catch, aquaculture, recreational and indigenous fisheries.

The key recommendations of this report were:

- All jurisdictions support the development of an agreed R&D plan aimed at assisting Australian fisheries and aquaculture anticipate the impacts of climate change.
- That the FRDC be charged with coordinating the implementation of the R&D plan.

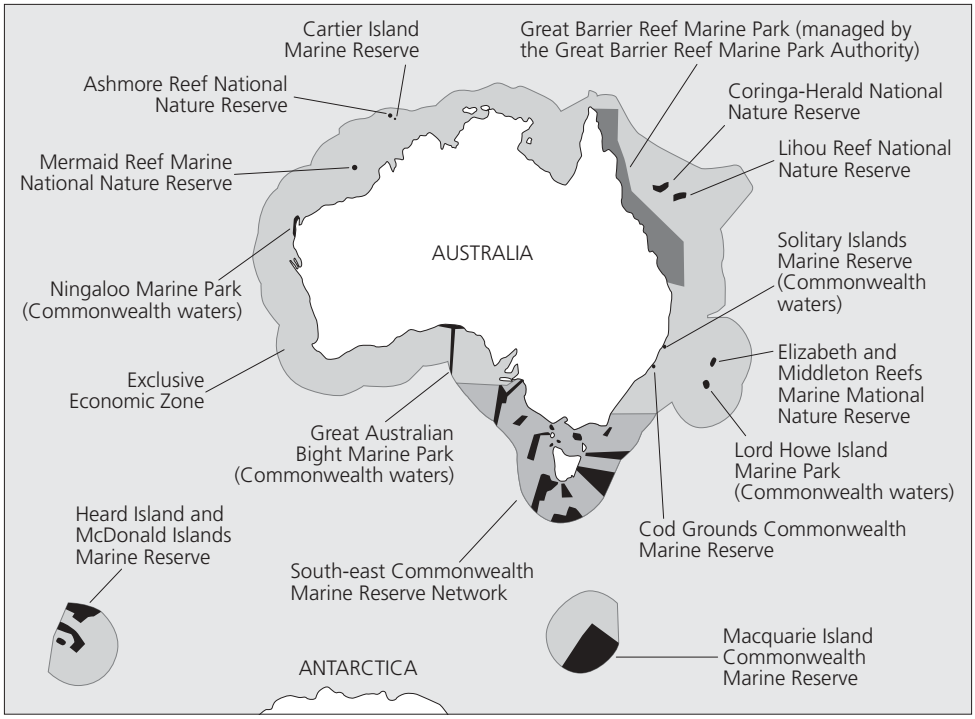
Further, to ensure the coordination of fisheries climate change R&D:

- All jurisdictions support the development of an agreed National Fisheries and Aquaculture Climate Change Policy Framework, similar to the National Climate Change Action Plan for Australian Agriculture.
- That the Australian Fisheries Management Forum, led by DAFF, develop an agreed National Policy Framework and National R&D Plan.

As the leading Australian agency concerned with planning, funding and managing fisheries research and development FRDC will work with the government to build on its current portfolio and take the lead to coordinate and collaborate on fisheries and climate change R&D.

Collaborating on climate change a key focus

In addition to specific fisheries related activities the FRDC is also partnering with the other 14 RDCs and PISC (Primary Industries Standing Committee) agencies in the Climate Change Research Strategy for Primary Industries. All the agencies involved have committed to the initiative. While the research strategy highlights key areas for collaboration, it does not go as far as to identify which agencies should collaborate, and on which issues. Some RDCs and agencies have clear synergies for collaboration, for example dairy, pork, and intensive livestock with regards to methane emissions or horticulture, grains, sugar and cotton with regards to soil carbon. Where appropriate the FRDC will seek to collaborate in areas that will benefit the fishing industry, such as lifecycle analysis, emissions trading and climate change communication and extension.



Looking at the science of Marine Protected Areas

Project title — Evaluating the effectiveness of Marine Protected Areas as a fisheries management tool (project 1999/162)

Research completed in 2007–08 has shown that Marine Protected Areas (MPAs) that were established to provide a safe haven for marine plant and animal life do not always achieve the expected outcomes, such as more fish and better fisheries.

Australia has some of the largest MPAs in the world and conventional wisdom says these areas should be beneficial for fisheries because they protect fish stocks, which then leads to spillover benefits. In theory, they may act as a source of eggs and larvae and of surplus adults, which enhance adjacent fisheries.

However, new research funded by the FRDC (project 2005/083, for more detail see page 26), has shown the opposite. The research started in 1999 by FRDC project 1999/162 when the Federal Government was considering a plan to establish a national network of MPAs. At the time, there was a lack of knowledge about the impact of these areas on fisheries, and what role they might play as a fisheries management tool.

The results from this study appear counter-intuitive, but there is an explanation. Using the rocklobster fishery in Tasmania as an example, the team modelled the effects of introducing MPAs.

It found that when MPAs were added, fishing effort was displaced to surrounding areas. If this extensive, displaced effort was not bought back through structural adjustment, the management practice of stock rebuilding could be slowed or reversed. This could significantly damage the adjacent areas and eventually lead to stock collapse.

Another part of the research effort monitored several MPAs around Tasmania, and showed that not all species benefited from the closure. In some cases, species became more abundant and grew to a larger size than those at similar fished sites. However, in the case of some other species, the opposite was true — population size appeared to fluctuate, increasing and decreasing for reasons other than the MPA.

In Australia, the national system of MPAs is being established for conservation reasons, to protect and maintain biological diversity. However the research showed that this approach is not backed by the science. If fisheries are the key threat to marine biodiversity, then that problem needs to be addressed directly through good fisheries management, rather than simply creating MPAs in the hope of offsetting the threat.

MPAs might not be the best option and could even lead to a network of pristine areas in a sea of degraded habitat and shows a more holistic approach to conservation and fisheries management should be used.

The research does not oppose MPAs — they have their place just as nature reserves do on land. However the justification for them needs to be looked at carefully and needs to be aware about what the benefits are.

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The great sea snake escape

Project title — Effects of Trawling subprogram: risk assessment and mitigation for sea snakes caught in the Northern Prawn Fishery (project 2005/051)

Project title — Effects of Trawling subprogram: reducing the impact of Queensland's trawl fisheries on protected sea snakes (project 2005/053)

Highly venomous sea snakes may seem fundamentally unlovable but the desire to protect them is catching on in prawn trawl fisheries

For a venomous sea snake caught up in a net brimming with prawns, the trip on board a commercial trawler can prove as traumatic for it as for the deck hands charged with manually returning it to the sea alive. Adding to the challenge of these unwanted encounters, sea snakes are protected species, susceptible to overfishing, and while snake bites are rare, most incidents occur on fishing vessels.

With Australian waters home to a uniquely rich array of species, sea snakes present a particularly Australian twist on the bycatch problem that otherwise affects prawn trawl fisheries around the world. Given the nature of the problem, it is not surprising it took local ingenuity, FRDC funds, seasoned snake handlers and much collaboration to set about finding ways to reduce interactions between sea snakes and trawlers.

The prime targets of the FRDC-funded research efforts were the Northern Prawn Fishery (NPF) and the Queensland East Coast Trawl Fishery. Although sea snake bycatch is common to both, the fisheries are sufficiently different that two research projects were mounted.

There are 32 species present in Australian waters — roughly, two-thirds of all sea snake species on the planet. About a dozen species have been identified in Queensland's bycatch, based on digital photographs from vessel crews.

About 470 licensed otter trawl vessels operate in Queensland — the largest trawl fishery in Australia — and 70 of those participated in the observer program. When their figures were extrapolated to the entire fleet, preliminary estimates indicated approximately 50,000 sea snakes were caught annually.

Observations made on the snakes caught in trawl nets in Queensland suggest that about 20 per cent die as a result of being caught. This figure has two components — five to 10 per cent of snakes come up dead in the nets. A further 10 to 15 per cent die in the following two to four days after being trawled, based on holding the snakes in tanks after being caught.

That figure is lower than in the NPF where CSIRO estimated mortality in 2001 at above 40 per cent. The difference are likely due to trawl times that are twice as long in the NPF, on average, compared to the east coast.

CSIRO has also extensively surveyed catches to help ensure industry sustainability given that the NPF is one of Australia's most valuable Commonwealth fishery. Researchers identified a total of 390 non-target species in northern bycatches — 73 per cent involved fish species. Around a dozen sea snakes species turned up and there is concern for two in particular — the large headed and the spectacled sea snakes.

Sea snakes are relatively slow-growing and produce a few live young each year. Their populations will decline if a high proportion of females are caught before they breed, or their young do not survive.

At both sites, researchers opted to explore the effectiveness of using bycatch reduction devices (BRDs) — including turtle exclusion devices (TEDs) — in prawn trawl nets to reduce the sea snake catch rates.

TEDs are hard grids placed in trawl nets that guide turtles towards an opening in the net, through which they can escape. Prawns are small enough to pass through the grid and so are still caught in the net. BRDs are changes to the trawl net itself. They are openings designed to enable animals smaller than turtles to actively swim out of the net. Both devices were made compulsory in 2000.

By 2003 it was noted that the devices in use in the NPF (TEDs and Bigeye BRDs) were not reducing sea snake catches. Continuous improvement in design saw the 'Fisheye' BRD developed that proved capable of reducing sea snake bycatch by 65 per cent. More recently, research has shown that most existing BRDs in use in the NPF are capable of reducing sea snake and other bycatch if some basic modifications were made.

Overall, the research has shown that trawlers can play a proactive role in allowing a majority of sea snakes to escape the nets.

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Catch time could be cod's puberty blues

Project title — Sustainability of recreational fisheries for Murray Cod in the Murray–Darling Basin (project 2006/053)

As part of an FRDC-funded project, Victorian researchers have taken a long, hard look at the sex life of the Murray Cod in a bid to ensure sustainable harvest of the prized freshwater fish.

The Murray Cod is listed as vulnerable under provisions of the *Environment Protection and Biodiversity Conservation Act 1999*, and questions about the species' sexual maturity are among the information gaps highlighted in a draft recovery plan developed in response to this listing. The project aims to fill some of those gaps that also include a lack of detailed information on angler catch levels or the survival rate for those cod released after being hooked.

The legal minimum length of Murray Cod in Australia is:

- Victoria, 50 centimetres
- New South Wales, 55 centimetres (rising to 60 centimetres at the end of 2008)
- Queensland, 60 centimetres
- South Australia, 60 centimetres (recently increased from 50 centimetres).

Although previous research has been carried out on the question of Murray Cod sexual maturity this is the first time a comprehensive study has been coordinated throughout the Murray–Darling system.

One factor inhibiting such widespread study of sexual maturity has been the fact that researchers do not want to kill a large number of Murray Cod to complete the research. As such, Fisheries Victoria turned to keyhole surgery technology for a non-destructive method to confirm if a fish is carrying mature sperm or eggs, in those cases when pressure on the abdomen or inserting a pipette fails to furnish the necessary evidence.

While the researchers have found fish below 50 centimetres that are breeding, another factor in determining population replacement is the question of how many spawning seasons the fish may have before it is caught and legally taken.

Another aspect of the research is examining when people release undersize fish, do they survive? Researchers have organised exercises with recreational anglers in order to monitor fish caught in typical conditions and assess post-release mortality rates. Fisheries Victoria researchers will be relying on colleagues in other states to also collect information for this and other aspects of the study.

Recreational anglers are also playing their part, not only through the catch-and-release survival studies, but as participants in the extensive creel surveys being undertaken throughout the Murray Cod's habitat to determine catch levels for individual rivers and basins.

Once all the data on the catch and size is collected, it will be used to develop a population model that will allow researchers to test various scenarios — such as what would happen to the Murray Cod population if we changed the legal minimum limit or harvest rates for example. This would help evaluate management strategies to ensure the sustainability of the Murray Cod harvest — an important outcome for anglers.

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Sustainability studies win two students FRDC-sponsored awards at the Australian Marine Sciences Association Annual Conference

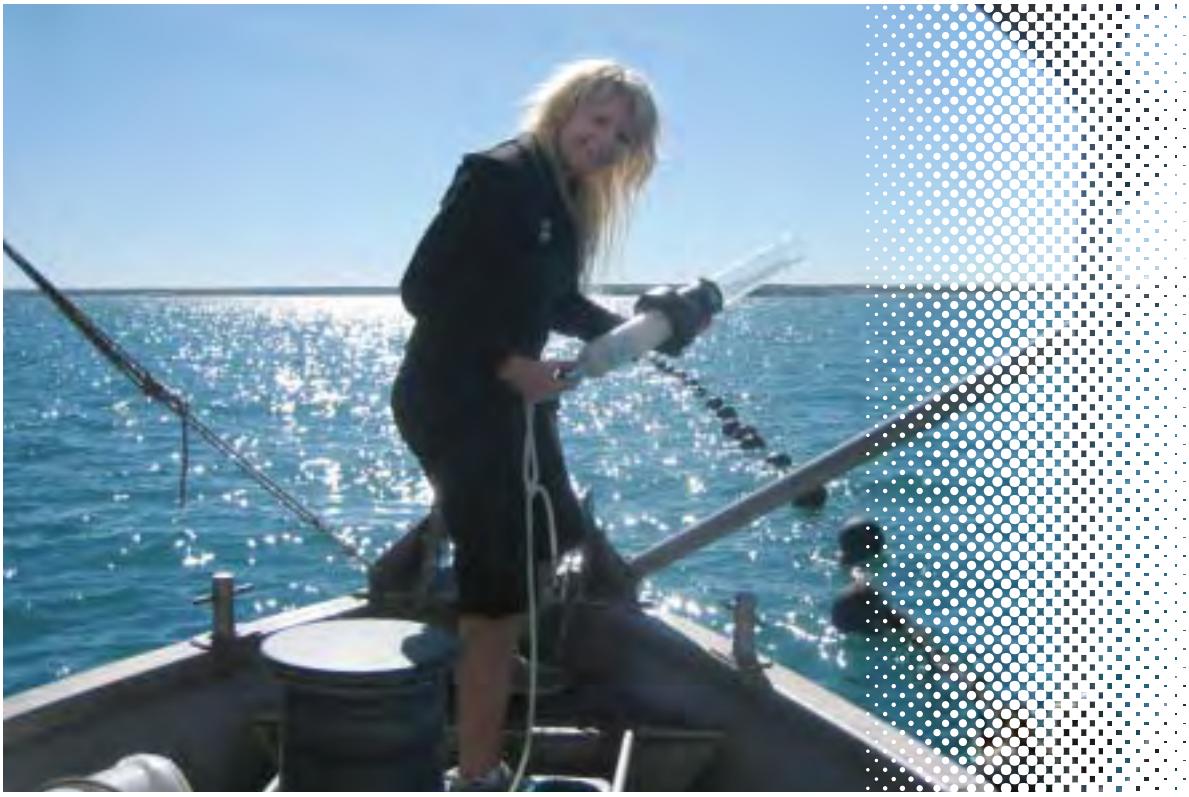
In an era when environmental pessimism dominates headlines, two student research projects have delivered a ray of good news on the fisheries front, and scored an award in the process.

Kylie Dixon from the University of Newcastle, and University of Melbourne student Peter Macreadie were prize winners at the Australian Marine Sciences Association Annual Conference held in July 2007.

The awards are given to the best student talk or poster on the issues of natural resources sustainability and industry development. In Kylie Dixon's case, the issue was the impact of pearl aquaculture on the pristine Kimberley coast in Western Australia.

Polychaetes are a class of marine worms that are a useful indicator of the health of a marine habitat, and therefore provide researchers with a way of assessing the impact of human activity on these environments. While the pearling industry has long claimed its activities have little effect on the natural environment, only limited research had been done to support this.

Kylie Dixon and colleagues were able to show that the polychaete populations below three pearl farms in the Kimberley region were not affected by the aquaculture activities, and they even discovered a new polychaete genus in the process.



Peter Macreadie's research on the fragmentation of seagrass habitats came to a similarly unexpected and positive conclusion. Investigating the impact of fragmentation on fish abundance in a seagrass habitat, he and his colleagues found that some species of fish actually responded positively to fragmentation of their habitat.

To study the effect of seagrass fragmentation, the research group had to create their own artificial seagrass habitat using steel mesh that was hand tied with strips of green ribbon. The project used artificial seagrass on a scale like no other study so far conducted. In all, about 250 kilometres of green ribbon was hand tied to the mesh, which was then submerged in Victoria's Port Phillip Bay.

Unfortunately habitat fragmentation, which can be caused by something like a boat propeller carving through seagrass, is one of the major causes of seagrass loss. However, fragmentation provides more edges, a space preferred for fish species, and therefore may counterbalance the overall habitat loss.

The findings have significant implications for a habitat type that is under threat around the world and could lead to a positive outcome for managing seagrass beds around Australia.

BENEFIT COST ANALYSIS CONDUCTED BY AGTRANS RESEARCH
(ECONOMICS CONSULTANTS AND STRATEGIC POLICY ADVISORS)

Assessing the benefit of research

An economic analysis of investment in assessing proposed Marine Protected Areas

The FRDC project assessed in this benefit cost analysis was:

- *Review and assessment of the impacts of the proposed broad areas of interest for MPA development in the South-east region* (FRDC project 2005/083)

Background

Under international agreements the Australian Government is committed to establishing a network of Marine Protected Areas (MPAs) in Australia by 2012 to ensure long term ecological viability of existing biodiversity and the marine and estuarine systems. The South-east region boasts many species that are not found anywhere else in the world, and hence was a prime target for the establishment of MPAs. Also, there is an agreement between the Australian Government and the states to establish a National Representative System of Marine Protected Areas in Australian waters.

In 2002 the Australian Government had commenced planning of the MPA network for the South-east region with a scientific inventory of relevant mapping and research. There were also a Scientific Reference Panel and a Scientific Peer Review Panel. However, in late 2005 there was some political urgency in developing the MPAs. The selection of the areas was undertaken according to a set of criteria established by the Australian Government. The MPAs were selected with boundaries identified to make compliance and management easier. While planning was largely conservation driven, there was a commitment by Government to maintain commercial access and sustainable use of the resource by industry.

The Australian Government used the "Securing Our Fishing Future" package to speed up the development of the South-east region MPA in order to align the processes. Hence, in December 2005 a detailed proposal by the Government was released specifying a network of 14 MPAs for the oceans of south-east Australia.

In 2005, the then existing regulations to ensure fishing was sustainable were already complex with some fisheries in the region being managed by the Commonwealth while others were managed by the southern states (New South Wales, Victoria, South Australia and Tasmania) and some fisheries were managed jointly. Overall there were over 30 Commonwealth, state or jointly managed open ocean fisheries in the region.

Objectives

The proposed MPAs and their boundaries were open to negotiation and the Government sought comment. The commercial fishing industry requested a study to:

- determine the socio-economic impact of the proposed MPAs on the industry, and
- assess alternative approaches to minimise the industry impacts while retaining the biodiversity protection required by the Government.

High level collaboration

The study was led by Professor Colin Buxton of the Tasmanian Aquaculture and Fisheries Institute (TAFI) at the University of Tasmania. It was funded by the FRDC and the Tasmanian Department of Primary Industries and Water (DPIW). In addition the project brought together many partners including the Commonwealth, South Australian, Tasmanian and Victorian fishing industries as well the representative governments of those fishing industries.

Benefits

The likely benefits are identified in a triple bottom line framework as follows.

Economic

The final MPAs provided a significantly lower economic impact on the fishing industry. The displaced gross value of product (GVP) for the original proposal was estimated to be $11.6 million per annum for both Commonwealth and state fisheries. In comparison, the final outcome the estimate of GVP displaced was estimated at $0.9 million per annum. The difference was mainly due to:

- the removal of the Cascade reserve which allows ongoing fishing for Orange Roughy
- the replacement of the Banks Strait reserve with the Flinders and Freycinet reserves, which reduce the impact on scallop fisheries
- the altered zoning of the Tasman Fracture reserve to minimise the impact of Blue-eyed Trevalla catches, and
- the altered design and altered zoning of the Murray reserve to allow harvesting of rocklobsters.

Environmental

The final (agreed) MPA provided a marginally improved set of conservation and biodiversity outcomes to those originally proposed because the original proposal, by nature, included a high level of coverage. The resulting MPA did increase in the area from 171,000 to 226,458 square kilometres or around 30 per cent.

Social

Communities currently engaged in servicing fishing boats and crews (e.g. processors) will lose less infrastructure and employment. The reduced number of personnel losing jobs in the catching and processing industries, particularly in Tasmania, will mean that total disruption and dislocation costs to them and their families is greatly reduced. The initial proposal would have seen over 200 jobs lost across the affected areas.

Adoption

The report was submitted to the Australian Government and to the then Minister for the Environment and Heritage; and Minister for Agriculture, Fisheries and Forestry. A majority of the recommendations were adopted by the Government.

Beneficiaries

The beneficiaries are the Commonwealth, South Australian, Tasmanian and Victorian fishing industries as well the broader regional communities in each of the states.

Conclusion

The result for the final boundaries and zoning of the MPAs in the South-east can be described as a win-win outcome for both industry and the environment. The final MPAs provided a marginally improved set of conservation and biodiversity outcomes to those originally proposed as the MPAs now include more of the shelf areas than in the original proposal. The impact on the fishing industry and its infrastructure and associated communities is far less than what may have been the case under the original proposals.

There is substantial agreement that the TAFI study contributed significantly to this outcome. However, it is difficult to quantify and value this contribution without making a series of assumptions that can be the subject to debate, for example what would have happened if the study had not gone ahead?

Given the assumptions made, the economic analysis suggests that the study and the small investment by FRDC of $37,500 provided significant benefits to Australia. The net present value for the total investment was estimated at about $70 million at a 5 per cent discount rate, with a benefit cost ratio of 959 to 1. The estimate of the value of benefits is likely to be an underestimate, given that several identified benefits have not been valued.

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 project descriptions provide examples of the R&D currently underway.

Investment in activities under this program depends on evidence of market, institutional, technical, policy or political failure, and/or likely 'public good' benefits.

Principal inputs

During 2007–08, $7.6 million (about 44 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
At least two companies accessing new markets for domestically caught seafood.	Achieved
Establishment of a third-party audited food quality standard for vessels and processors.	Commenced
A 5% increase in finfish production through improved feeds and feeding practices.	Achieved
Establishment of a commercial operation (ASCo) specialising in the utilisation of fish processing waste.	Achieved
At least two companies utilising improved stock from selective breeding programs.	Achieved

Activity within this program has grown again this year with a focus firmly on improving industries profitability through efficiency gains, product development opportunities and potential for increases in production for the aquaculture sector. With many wild fisheries at production capacity, the focus is now on how to make more from the available resources. This is not limited to production outputs; improving profitability can also occur at the input side by reducing the cost of production.

The need to improve efficiency in the face of the shrinking global market and the need to respond to increasing production costs, energy efficiency and increasing competition has necessitated an innovative approach by industry.

The Western Rocklobster industry has recently referred to the above as the perfect storm — a combination of a high Australian dollar, low production and low beach price contributing to difficult times. In order to adapt — new and innovative approaches will need to be adopted.

In 2007–08 there was a significant increase in finfish aquaculture production with the total volume increasing from 32,810 to 36,101 tonnes or about 10 per cent. In particular, significant work was done on feeds and feeding practices for salmonids (20 per cent increase), Barramundi (15 per cent increase) and Kingfish (5 per cent increase). While not all of this increase can be directly attributed to improved feeds and feeding practices, given the magnitude of increase it would be safe to assume that the target of 5 per cent would be achieved.

In July 2007 the Seafood CRC started operations. Its goal is to increase the value of the Australian seafood industry and achieve significant growth in the sector through innovation. The FRDC is collaborating with the Centre to find solutions to some of the many issues confronting the industry at present. In figure 4 below, two research themes from the Seafood CRC work program, 'Consumers and markets' and 'Products and supply chain' align very closely with FRDC's Industry Development program. FRDC aims to continue its close association with the Seafood CRC to deliver innovative opportunities and outcomes for the the Australian seafood industry.

FIGURE 4: SEAFOOD CRC RESEARCH THEMES

Market chain	R&D themes
Consumers and markets	*Sell fish* — Domestic and international market development
	Seafood health benefits — Research on communication of risks and benefits
Products and supply chain	*Oz sea value* — Product development, processing and supply chain
Production	*Finfish* — Aquaculture production innovation
	Future harvest — Wild harvest management innovation
	Breeding for profit — Genetics

FRDC through SSA has been working closely with Food Standards Australia New Zealand (FSANZ) to develop food quality standards for safe seafood. Additionally, SSA has been working to ensure that accurate information is developed and disseminated regarding issues such as dioxins and mercury and the development of guides for residues in seafood.

Program 2 — achievements and activities

Southern Bluefin Tuna propagation — Australian world first

On 1 March 2008 Australian-based Cleanseas Tuna established a world first with significant quantities of Southern Bluefin Tuna (SBT) sperm and eggs spawned by captive SBT held in Cleanseas' purpose-built land-based breeding facility at Arno Bay in South Australia.

This was followed up over the subsequent days by the successful fertilisation and hatching of tuna larvae. These breakthroughs are the first major steps in closing the lifecycle of SBT.

The precursor to this breakthrough was the feasibility study funded by DAFF and FRDC undertaken by Dr Peter Young. The study confirmed the viability of the biology and economics of this endeavour. A key driver for the study was to look at reducing pressures on wild stocks of SBT.

Over the past decade FRDC has invested with partners over $100 million into finfish aquaculture and it is because of this investment in research and development that Australia has now developed an international reputation for its ability to find solutions to technically difficult species.

The Cleanseas breeding facility located at Arno Bay was also developed with assistance from the Federal Government through a Commercial Ready Grant. Ongoing research into SBT aquaculture will be supported by FRDC and the Seafood CRC.

Researchers from the University of Dusseldorf, the Hellenic Centre for Marine Research and the US-based Inter-American Tropical Tuna Commission have also supported the breeding program.

Fish names standardised

After six years of work, 4500 varieties of local and imported fish, and other seafood species have been given a standard set of common names.

Chairman of the FRDC/SSA-funded Australian Fish Names Committee, Roy Palmer said the committee knew it had to make changes to stop purchasers' confusion, and in some cases, the deliberate substitution of cheaper fish under false names.

A committee of seafood producers and sellers, scientists and fisheries managers was formed, and consulted with industry and consumers from across the country.

Convincing people to let go of their local names for some species, no matter how quaint, in favour of a single name across the nation was a huge task. Though for some, like the snotnose trevalla, it was much easier.

The outcome is a standard enforceable through Standards Australia — Australian Standard® AS SSA 5300–2007: the Australian Fish Names Standard.

The standard will not only help seafood retail and promotion, it will also help improve fish stock assessments by fisheries managers.

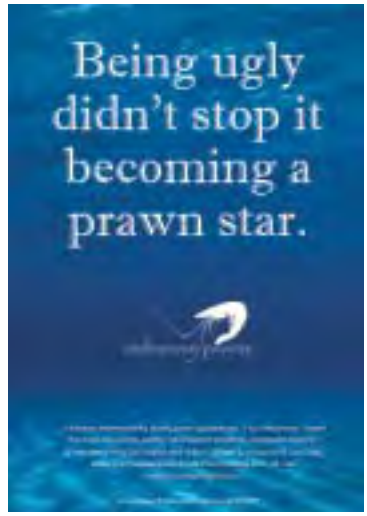
The Fish Names Standard is a win-win. It's a big advance for consumer confidence and it's a great leap forward for the viability, profitability and sustainability of the Australian seafood industry.

The new standard was launched at the Sydney Fish Market on 24 June 2008 receiving high levels of media coverage in the successive week. A website, posters and books have been developed to help industry learn the new standard.

For further information: www.fishnames.com.au

Ugly prawn outperforms pretty competitors

Project title — Tactical Research Fund: Establish the acceptability of the Queensland Endeavour prawn as a product of choice in the Queensland domestic market (project 2007/247)



A small investment by FRDC has helped develop a successful marketing makeover that saw the sales of an 'ugly' but tasty prawn reach unprecedented highs.

The Queensland Seafood Marketers Association (QSMA) initiated the marketing R&D project, following a test campaign in Cairns that showed prawn sales could be increased with a little work.

The campaign, included slogans such as 'Being ugly doesn't stop you from being a prawn star' and 'Queensland's own prawn' helped ensure publicity — from local radio to national television programs — boosting consumer awareness and consequently sales.

Endeavour prawns are caught off the northern Australian coast and have traditionally been exported to Europe, where despite their appearance they were revered for their sweet taste. However, a few years ago new European Union laws and competition from Argentina curtailed this trade, meaning a new market was needed.

The industry turned to the domestic market. However, Endeavours not only had to compete with imports but also with more aesthetically pleasing prawns, such as kings and tigers.

So, industry decided it needed to do something about the situation and started market testing in Cairns, Australia's biggest prawn port.

Although the immediate goal was to sell existing stock and increase prices paid for them, the QSMA was also keen to establish Endeavours as a brand and not a commodity product.

When the project first started, industry couldn't give away the prawns — the beach price in June 2007 was $5 per kilogram. Following the campaign the price was $10 per kilogram.

The results of the campaign are clear. Industry has received a better price for their product and raised the profile of the campaign. Retailers have also reported customers are now asking for Endeavours by name — which highlights the campaign's success.

For further information: James Fogarty; e-mail: jamesfogarty@cairns.net.au; telephone: 07 4031 2346; web: www.endeavourprawns.com.au/index.html

Research leads to better seafood shelf life

Project title — Effective sanitation for the fishing industry: using bacteriological assessment to optimise sanitiser type for processing equipment and finfish product (project 2005/402)

A microbiology project is showing that better use of sanitisers could boost the shelf life of Australian seafood. The four-year project examined the use of such agents at various points along a number of seafood supply chains.

The ultimate aim of the project is to produce a code of practice for the industry, advising how best to apply sanitisers and when.

The FRDC-funded project sprang from previous research and a six-month sanitation study in 2006, which sparked wide interest. The work highlighted variations in bacteria levels and product quality indicators resulted from using different sanitising agents on fish processing equipment and whole fish. It led to an advisory pamphlet outlining effective sanitation practices for the seafood industry.

Although seafood businesses must meet FSANZ requirements for cleaning and sanitising processing areas, and the Australian Quarantine Inspection Service lists sanitising agents approved for various applications, there remains a need for more information in the industry.

Researchers in this project carried out a range of trials using three sanitising agents: quaternary ammonium compounds, chlorine dioxide and bitter orange extract.

Cutting knives and boards were contaminated with a fish mixture, treated with the sanitising agents and tested to gauge the effect on bacterial numbers. In a second stream of trials, researchers counted the microbial flora on fish stored at 4°C over a period of time — comparing those fish dipped in bitter orange extract or chlorine dioxide to untreated fish. They also used a quality index (QI) based on characteristics such as gill colour and eye brightness, to compare the effect on shelf life.

The researchers were surprised at the high performance of the natural alternative, bitter orange extract. For the equipment, the quaternary ammonium compounds proved most effective and for the fish itself (which cannot be treated with that substance) chlorine dioxide was the most effective — but only marginally better than bitter orange extract. The quaternary ammonium compounds reduced the bacteria on processing equipment by more than 80 per cent within five minutes of application.

The research concluded the use of sanitisers on whole finfish, either as a pre-refrigeration soak, or incorporated into storage ice, also had a positive impact on the shelf life of the fish. A brochure outlining the benefits was distributed to industry stakeholders and is available from FRDC and the Western Australian Fishing Industry Council.

The significant impacts observed in work to date points to the great potential for industry to increase shelf life with the right approach to sanitation throughout the supply chain.

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Maximising the unused

Project title — Evaluation of egg production as a method of estimating spawning biomass of Redbait off the east coast of Tasmania (project 2004/039)

Project title — Development and evaluation of egg-based stock assessment methods for Blue Mackerel (*Scomber australasicus*) in southern Australia (project 2002/061)

In the past few years, Redbait has emerged as an important commercial species, but until recently little was known about its biology or population dynamics. A close collaboration between scientists and the fishing industry, along with the opportunity for early stock assessment, are key factors in the success of a project to provide information about one of Australia's newest fisheries.

Although a fishery for small pelagic fish has operated off the east coast of Tasmania since the mid-1980s, the target species has changed in recent years. Originally, the fishery was based on Jack Mackerel, but by the late 1990s surface schools of these fish were quite rare.

It prompted the fishery's main operator, Seafish Tasmania, to investigate other fishing options and in 2000–01, Seafish carried out trials investigating midwater trawling.

The trials produced large catches of Redbait — a discovery that encouraged the company to purchase a mid-water trawler from Iceland to catch them.

Today, most of the fish is sold to Port Lincoln operators as feed for Southern Bluefin Tuna. Yet there is real potential for further expansion of the fishery in export markets for human consumption as the species is very high in omega-3s.

A method for estimating Redbait biomass was needed to support the setting of scientifically defensible catch limits. Researchers at the Tasmanian Aquaculture and Fisheries Institute used a technique known as the daily egg production method, which enabled them to estimate the spawning biomass of Redbait on Tasmania's east coast.

The key to the method is working out what proportion of the adult population is spawning each day and how many eggs an average female produces. Monitoring how quickly eggs develop, and the relationship between temperature and egg development, is a significant outcome of the project.

The researchers have also established the location and extent of spawning areas of Redbait on Tasmania's east coast, revealing that spawning stock extends much further north than previously realised — along Tasmania's east coast and into southern New South Wales.

The results of the study (2004/039) have fed directly into the Small Pelagic Fishery Group, of which I am a member. Specifically, the biological information about Redbait developed in the study has contributed to the development of a harvest strategy for the fishery…

The resulting Total Allowable Catch (TAC) for Redbait was substantially higher than it would have been in the absence of the study, as the default — no DEPM data — TAC is specified in the Harvest Strategy. This effective increase in TAC represents a direct and measurable return to industry on its investment in the study (including non-budgetary vest time component).

Gerry Geen, Director, Seafish Tasmania

Similarly, this method for determining fish stocks has been used in a project on Blue Mackerel in South Australia. The four-year $3.5 million project, led by the South Australian Research and Development Institute uncovered tens of thousands of tonnes of Blue Mackerel — one of the smallest members of the tuna family — in the Great Australian Bight and off eastern Australia.

Little was known about Blue Mackerel in Australia before the project, funded by the FRDC and AFMA, began.

Resources were fished at low levels, mainly for bait — however, this could now change. A new harvest strategy, based on the project's findings, is being established for the fishery and market opportunities are opening up in Russia and Europe, where a similar species of mackerel is a popular table fish and an important source of omega-3 fatty acids.

The methods developed in the project will underpin future resource assessment and ensure that the fishery is sustainably managed from the beginning.

The Blue Mackerel project involved researchers from across Australia and also used the daily egg production method to determine the abundance of adult fish.

The approaches established for assessment and management of Australia's small pelagic fishes have attracted interest from fisheries scientists and managers around the world again for the potential opportunities the species' holds due again to its high omega-3 content.

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Pearl of wisdom — safety first

Project title — A case study into the development of OH&S processes in the *Pinctada maxima* pearling industry to benchmark worlds best industry diving practice (project 2002/232)

The pearling industry's recompression chamber at Broome Hospital costs $80,000 a year to maintain and has been used just twice in the past three years. This is an outcome the pearl industry are very pleased about because it shows the industry has been meeting its safety standards.

The safety standards are underpinned by pearl diving protocols specially designed for the Broome region. Unique in the world, they help protect divers in what can be a very hazardous environment — contending with sharks, painful irukandji jellyfish stings and the risk of decompression illness.

Over those three years, about 100,000 dives — each of about an hour duration — have been undertaken by divers in the wild-catch pearl oyster fishery and on-farm in pursuit of harvesting and farming *Pinctada maxima* pearl shell.

The industry, with the assistance of FRDC, set about developing a code of practice specific to the industry to minimise cases of the bends while ensuring divers could still do their job.

After hundreds of test dives supervised by hyperbaric medicine expert Dr Robert Wong in the Broome recompression chamber, the pearl industry developed a set of drift dive tables specifically for divers.

The tables used by divers harvesting wild pearl oyster are now part of a comprehensive benchmarking report — a key industry reference document developed over the past 20 years. Covering all safety aspects of diving, the code advises on dive protocols, equipment requirements and emergency procedures, especially in cases of suspected decompression illness and irukandji stings, of which there are about two a year.

The dive research, code and tables will be made available online in a single reference for all industry to access. This will allow companies to develop catching strategies around the dive tables so they know how many dives they need and how long they may need to spend underwater.

The project also demonstrates the credentials of an industry that has taken an active interest in long-term safety and sustainability of not only the environment, but its people as well.

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Akoyas ahoy

Project title — Develop the non-maxima pearl industry at the Abrolhos Islands (*Pinctada Imbricata/fucata*) (project 2007/216)

The wild Akoya pearl oysters grow around cultured black pearl panels in the pristine waters of the Abrolhos Islands in Western Australia. The oysters were seen as a nuisance as they had to be picked off the panels as part of a monthly cleaning process however, some clever initiative and research is looking at what could be done if they were grown instead.

Initial trials were cause for optimism. A successful 'conditioning' technique — a process specific to Akoyas prepares the shell so the oyster will accept the shell bead implant and after being covered by layers of nacre, becomes the pearl.

Some 12 months later, the shells produced relatively big, good-quality pearls, revealing a potential competitive advantage over established Japanese and Chinese producers.

However, there was no consistency in the shells' age, breeding or growth potential, meaning the pearls could vary wildly in size and quality. There was a need for greater understanding, so in 2007 the FRDC provided funding for a three-year project for researchers to analyse best-practice Akoya pearl production, to determine whether a new industry, using hatchery-produced Akoya shell, is viable in the region off the Western Australian coast.

The NSW Department of Primary Industries and a leading authority on Akoya pearls, is part of the team helping to advise the research program. Also involved are Tasmanian fisheries and aquaculture consultancy Aquatech Australia and Fisheries Western Australia.

The first task for the project was to select appropriate oysters with favourable traits and produce them in a hatchery, thus eliminating the hit-and-miss nature of the wild-caught shells. From there, oysters with common genetics and of known age could be tested across different farm sites for growth rate, size and quality. This would help establish the effect of environmental factors such as temperature, salinity and food supply, and determine the optimal places for pearl production.

Once these research challenges are addressed further work can begin on developing the Akoya industry, taking Akoya production to a new level. This would lead to a good industry outcome for not only the local region but the whole pearl industry.

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BENEFIT COST ANALYSIS CONDUCTED BY AGTRANS RESEARCH
(ECONOMICS CONSULTANTS AND STRATEGIC POLICY ADVISORS)

Assessing the benefit of research

Development of manufactured feeds for SBT

FRDC is a major investor in the Aquafin CRC and co-invests in many projects that meet the needs of both organisations and the seafood industry.

FRDC/Aquafin CRC projects assessed in this benefit cost analysis were:

- *Optimisation of farmed Southern Bluefin Tuna nutrition to improve feed conversion efficiency and reduce production costs* (FRDC project 2001/249)
- *Commercialisation trials for a manufactured tuna feed* (FRDC project 2001/201)

Background

In 2001 the farmed Southern Bluefin Tuna (SBT) industry was reliant predominantly on imported feeds, mainly baitfish from the USA and northern Europe. The imported feed exhibited varying quality (for example, fat content varied from 4 to 20 per cent in sardines) as well as fluctuating prices, and availability. In addition there were some environmental considerations and quality issues with the imported baitfish. Hence the Australian industry had a driver to develop alternate feed strategies and look at replacement manufactured feeds options to improve feed security for the industry.

At the time the projects commenced little was known about the nutritional requirements of SBT. Providing a good base of information would identify the key areas that should be addressed to improve nutrition management. It was hoped that this would in turn lead to an ability to improve growth rates, produce improved feed conversion ratios and as such save feed, reduce refrigeration costs for feeds, and improve tuna product quality.

Objective

The objective of the two projects was to produce a manufactured feed that performed as well as baitfish in terms of growth rate, feed conversion and cost. In addition the projects aimed to evaluate and compare the survival, growth rate and condition of the fish, and the end product quality and market price of SBT fed manufactured pellet feed as compared to traditional baitfish feeds. Based on this information the projects would develop feed handling strategies, equipment and protocols that could be successfully applied to manufactured feeds.

Benefits

The likely benefits are identified in a triple bottom line framework shown on the following page.

Economic

- Use of the form-u-bait, a least cost formulation program to guide farmers on the best use of feed (manufactured and baitfish) to arrive at the optimal growth rate (protein and fat levels) at the least cost.
- Potential cost savings in delivery and distribution where manufactured feeds are used.
- Greater effectiveness and efficiency in formulating and using manufactured feeds in those cases where they may be used.
- Reduction in the risk of being dependent on baitfish (local or imported) with their inherent fluctuations in price, quality and availability.

Environmental

- The research has the potential to impact on the environment through influencing and manipulating feed strategies to reduce over feeding and minimise faecal loads.
- Environmental benefits exist from using pellets over baitfish. However, preliminary data suggests that while feed utilisation can be better controlled using pellets, optimising nutrient composition, and any waste feed can be assimilated i.e. by scavengers more easily than baitfish.

Social

The availability of an alternative feeding strategy for the industry, if needed, means farmers are less likely to be impacted on by a disruption in baitfish supply.

Adoption

It is understood that several tuna farmers are using the least cost feed formulation program for baitfish feed (form-u-bait). Manufactured feeds were being used by a small number of companies in the industry in 2002, but the practice was not common. However, it is possible that manufactured feeds will be used more widely in the industry in future due to:

(i) the uncertainty of continued supply of local and imported baitfish at lower prices than manufactured feeds

(ii) the potential for minimal use of local baitfish on environmental grounds or from concerns over species to species feeding.

Attribution

The two research projects in this analysis were the most significant investment into manufactured feeds for tuna made by the industry and others. It is assumed that 80 per cent of the benefits from the availability of the manufactured feed technology can be attributed to the two projects.

Beneficiaries

Primary beneficiaries from both projects will be the commercial tuna farmers at Port Lincoln in South Australia. It is also worth noting the analysis did not take into consideration flow on benefits outside the industry to other aquaculture sectors who may also adopt some of the results.

Conclusion

The evaluation shows that the investment by the Aquafin CRC and partners to develop feed and feeding strategies for farmed SBT production is likely to provide positive economic benefits. The investment in the two projects of $5.7 million is expected to provide a net present value of $14.6 million and a benefit cost ratio of 3.2 to 1.

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 outcome is also addressed, as a secondary but very important element, by projects within Programs 1 and 2.

Principal inputs

During 2007–08, $1.1 million (about 6 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
Two seafood industry leaders to complete the Australian Rural Leadership Program annually.	Achieved, see pages 54–55
Minimum of 10 fishing industry participants annually to attend the Advance in Seafood Leadership Development Program.	Achieved, see pages 51–52
A 10% improvement in recreational fisher capacity to release all fish in good condition.	Achieved
A 10% increased consumption of seafood.	Commenced
Aquaculture ventures are able to access new sites.	Not assessed

Industry leadership and staff retention are two significant issues facing the fishing industry. A People Development Program has been developed and implemented by the FRDC to meet the increasing demands within this area managed by a dedicated project manager. The development of this dedicated program is to enhance industry leadership in all sectors, build industry capacity to drive change, encourage knowledge transfer and R&D adoption, build workforce capability, and recognise and promote achievements.

The ability for the fishing industry to continue to undertake their activities is largely based on support from the community and consumers. As the community becomes more environmentally aware, the need to communicate that natural resources are being utilised in a sustainable manner has increased. Without this support, access to the resource could be reduced and the ability to harvest stopped. The need to understand community perception and drivers, and then to educate the community about the sustainable use of resources is a priority. This is currently being addressed by the Southern and Eastern Scalefish and Shark Fishery to understand government and community perceptions. This study is to complement a broader study being undertaken by the Sydney Fish Market that is to assess the broader consumer perception and preference, and is being funded by DAFF.

Recfishing Research will be the main vehicle to prioritise and disseminate R&D findings as they relate to the recreational sector. The success of disseminating R&D outputs through the national television program 'Escape with ET' is to continue. An overwhelming response was received to the initial series and the program has been an ideal mechanism to disseminate information to the general public — see page 44 for more detail.

It is also important that the seafood industry continue to educate consumers on the benefits of consuming seafood. The Australian community is becoming more and more focused on health, and seafood is perfectly placed to enhance the health of the general public. Activities such as the Omega-3 Centre and publications such as 'Seafood the good food' and 'What's so healthy about seafood' have allowed FRDC and SSA to push the message broadly through the media to the general public. Over 1000 articles have been published in newspapers, health journals and magazines over the past year. As a result, the FRDC found in the last two *Seafood Consumption Omnibus Surveys* that around 10 per cent of the population indicated they had increased seafood consumption because its health benefits. Work will continue with partner organisations Seafood CRC, SEA and SSA to continue to communicate the health benefits of seafood.

Program 3 — achievements and activities

The fishing industry is a collective term to encompass all FRDC's stakeholders — commercial, recreational and indigenous; private and public sectors; and research partners. The fishing industry, in particular the commercial sector, is experiencing difficult economic and competitive trading conditions and the recreational sector has strong competition from other user groups, and other sporting and lifestyle activities. Within the indigenous sector, Aboriginal and Torres Strait Islander people are increasingly seeking involvement in fisheries management processes and commercial activities.

Investing in the people to whom the industry entrusts its future is vitally important if the fishing industry is to reach its potential to deliver economic, environmental and social benefits. The FRDC's People Development Program seeks to address two challenges:

- to develop the capabilities of industry people, and
- to increase community and consumer support for the benefits of the three main sectors of the fishing industry.

The FRDC's aim is to invest 10 per cent of research and development expenditure in this program, providing investment through a portfolio of FRDC-initiated activities and stakeholder-initiated projects.

In 2007 a high priority was placed on developing the capabilities of people in the fishing industry. A program manager was engaged to lead the FRDC's investment in people development, and five priority areas were defined, with these being:

- investing in leadership
- building industry capacity to drive change and achieve goals
- providing opportunities for knowledge transfer and R&D adoption
- building workforce capability
- recognising and promoting achievements.

To ensure that the FRDC's investment is directed strategically and effectively, an advisory group, chaired by Bob Pennington, was formed on 24 July 2007.

Lexus young chefs — stars shine in South Australia

In June 2008 the 12 finalists for the Lexus Appetite for Excellence Young Chef and Young Waiter competition toured regional South Australia to gain an in-depth understanding and background into Australia's agriculture industries.

The Lexus Appetite for Excellence program was established by Luke Mangan (Executive Chef, Glass, Hilton Sydney) and business partner Lucy Allon in February 2005 to identify, recognise and nurture the finest emerging young talent within the Australian food industry.

In 2006 the rural RDCs initiated the regional tour program to educate the finalists about Australian primary production.

The logic behind taking the chefs on the tour is simple. Take the finalists to the producer and show them first hand where the products they use come from, the research behind them and ultimately why it is so good.

Over the week long tour the finalists tasted, tried and discussed a broad range of food with the primary producers who grow, catch and cultivate it. The finalists visited oyster, mussel and kingfish farms, cattle producers, wine makers and lettuce, tomato and citrus growers.

In developing the tour, broad cross sections of primary producers were selected to highlight how research and development has become a major part of working in primary industries.

The 2008 South Australia tour was the third trip with previous finalists visiting Western Australia and Tasmania. Both trips have resulted in great outcomes, not only for the finalists, but for the regional producers who have established direct links with some of the best restaurants in the country.

The tour and the Lexus Appetite for Excellence awards are proudly supported by rural RDCs — FRDC, Meat & Livestock Australia, Australian Pork and Horticulture Australia.

FRDC escapes with ET

Project title — Educating though 'Escape with ET', series 9 (project 2007/060)

In 2007 the FRDC joined forces with 'Escape with ET', one of Australia's leading fishing television programs, to bring key research outcomes to the public.

Each week the program runs, around 500,000 viewers watch one of Australia's leading fishing advocates, Andrew Ettinghausen, better known as 'ET', learn more about fishing and a select number of FRDC-funded projects. In all, series 9 showcased over 23 projects.

One of FRDC's key drivers is to communicate the knowledge generated from research projects to a large, interested audience. Communicating on this scale is a major challenge for any research organisation. Historically, FRDC has not used mass media as part of its communication strategy due to interest in fisheries-related activities from the community. However, public perceptions of the fishing industry and the stewardship of marine resources has changed and there is a greater need to communicate the work that has been undertaken. Utilising the expertise and coverage of ET provides the FRDC an ambassador for safe fishing practices and a voice that clearly resonates with the viewer which greatly assists in delivering the message about research throughout Australia.

Through the FRDC segments, viewers are provided with an overview of the many and varied R&D projects undertaken every day around the country; the numerous scientists gathering information that helps inform the public as to best fishing practices; and the scientific evidence being collected that informs educated decisions for the fishing industry.

"I have always been interested in the role research plays in ensuring our fisheries — both recreational and commercial — remain safe, disease-free and secure for generations to come. The public have not always known a lot about R&D being done to look after our important fish stocks and marine habitats."

"A public better informed will be more understanding and eager to follow new rules and amendments to ensure a fishing future for all concerned."

Andrew Ettinghausen, 'Escape with ET'

'Escape with ET' featured stories on the following subjects.

Genetag Spanish Mackerel	Commercial fishing and bycatch survival
Fishing Competitions National Standards	Abalone
Tomorrow's leaders	Northern Territory Black Jewfish
Moreton Bay Marine Park	Trout Cod in Murrumbidgee
Murray Cod	Eradicating European Carp in Tasmania
Blackwood River Black Bream	Mulloway
Australian Salmon	Prawn aquaculture
Post-release survival — flathead	Post-release survival — reef species
Western Australian finfish recreational catch monitoring	Long-spined Sea Urchin
Cleaning gear after overseas trips	Qx disease in Sydney Rock Oysters
Spawning aggregations in Western Australia	Rebuilding the scallop fishery
Fish fertiliser	Series overview

The outcome of this project has been a raised understanding by the community of the work that is being undertaken. Feedback was received by the show and by FRDC acknowledging the valuable work being undertaken. This feedback extended to a number of recreational fishing sites that featured discussions on the stories.

Comment on Western Angler message board

I thought ET's NT Black Jew story that was on Saturday was one of the best 'fishing show' pieces I have seen for a long time…

It discussed the current research, what the issues were, what baratrauma was, how to prevent it, circle hooks, handling fish, rigs to catch them etc. etc. … the lot really… the release weight got a mention as well.

Generally it was pretty damn good.

Tackle junkie — Fishing addict

For further information: Liz Thomas; e-mail: liz@escapewithet.com; telephone: 07 54491887; web: www.escapewithet.com.au

People development in action

The Northern Territory Seafood Council led a project called 'Move to a common vision and understanding for equitable access for indigenous, recreational and commercial fishers: Northern Territory fishing and seafood industry delegation to New Zealand'.

The delegation toured New Zealand, where they visited a wide range of individuals and groups to learn more about how New Zealand's fishing industry incorporates indigenous fishing rights.

For the group of fishers, it was important to make contact with people who have extensive experience in incorporating indigenous fishing rights into the fabric of the day-to-day operations and management of fisheries.

It follows the 'Blue Mud Bay' court decision, which found that waters over Aboriginal land are the same as 'land' under the *Aboriginal Land Rights (Northern Territory) Act 1976*, with similar access requirements. This means that ownership of the intertidal zone (including the waters) rests with the indigenous land trusts, with the potential to affect rights and access to over 80 per cent of the Northern Territory coastline.

This is a unique situation in Australian fisheries and there are significant opportunities to discuss how best to progress the issues at industry level. Not only did the project enable the group to find out about how New Zealand manages a very complex issue, it had a much bigger outcome building an effective working relationship between the groups who participated.

With FRDC support, traditional owners and commercial and recreational fishers are actively discussing long-term options for incorporating indigenous participation in fisheries resource management, which takes into account indigenous commercial operations, along with recreational use of fish stocks, monitoring, compliance and enforcement issues. Members of the project team are learning together, learning from others and working towards an agreed stakeholder position on future directions for indigenous participation in the Northern Territory fishing industry.

Industry powered R&D

Project title — Empowering stakeholders to initiate and advance R&D projects in the fishing and seafood industry (project 2007/304)

The initial results from the 'Empowering stakeholders' project were presented to participants of the 9th Biennial FRAB and Stakeholder workshop held in Canberra in May 2008.

The project sought to increase the amount of industry driven R&D, to help industry around the country develop ideas and initiatives into specific research proposals. Following a series of meetings 34 projects were identified. The projects focused on industry profitability and efficiency, product development, environmental performance, people and industry development. With the assistance of the project team, 28 of these were developed into proposals or outlines, and from that, 20 full proposals were submitted to funding sources. In all, six funding sources were used: the FRDC, National Water Commission, AFMA, Natural Heritage Trust and DAFF.

At the time of the May workshop 14 projects had been successful with a small number still awaiting decisions.

The need and value of the project was evident by the large number of stakeholders that enquired and used the service; and ultimately the number of projects that were funded.

A mark of the success for the project was that five projects progressed through to the pre-proposal stage, not to mention that 14 projects achieved successful funding.

Industry has a lack of resources to take full advantage of, and be a part of, many avenues for R&D funding. This includes the time to write the application as well as the basic skills needed to write it. It also shows that FRDC has a role to play in assisting industry to be better prepared. This project was designed to help and assist in providing a means for industry to submit a number of projects which were often outside the scope of existing agency/university driven projects.

There is significant opportunity to continue, or build on the project in another form to expand the range of potential projects from those that are currently submitted through the FRDC process. This could be achieved by actively identifying and developing industry ideas and matching them with research providers and funding sources.

The Australian fishing industry has many innovative ideas on how to make themselves more profitable, environmentally friendly and able to build capacity. Without the assistance and guidance provided by this project a number of these ideas would have not been funded.

For further information: Dr Ian Knuckey; e-mail: fishwell@datafast.net.au; telephone: 03 5258 4399

BENEFIT COST ANALYSIS CONDUCTED BY AGTRANS RESEARCH
(ECONOMICS CONSULTANTS AND STRATEGIC POLICY ADVISORS)

Assessing the benefit of research

Larval and hatchery production of Striped Trumpeter

FRDC is a major investor in the Aquafin CRC and co-invests in many projects that meet the needs of both organisations and the seafood industry.

FRDC/Aquafin CRC projects assessed in this benefit cost analysis were:

- *Improving growth and survival of cultured marine fish larvae: Striped Trumpeter,* Latris lineata*, a test case for Tasmania* (FRDC project 2001/206)
- *Enhanced hatchery production of Striped Trumpeter,* Latris lineata*, in Tasmania through system design, microbial control and early weaning* (FRDC project 2004/221)

Background

The principal marine finfish farming aquaculture industries in Australia are those of Atlantic Salmon, Southern Bluefin Tuna (SBT) and Barramundi. Only Atlantic Salmon and Barramundi are raised from eggs and then in sea cages while SBT are raised in captivity after being caught in the wild.

Several other fledgling aquaculture finfish industries are also being developed. A major bottleneck for many species is the rearing of larvae through to juvenile fish. Mortality of the larvae has been quite common for a number of species and this problem has been linked to deficiencies or imbalances in lipid nutrition. Marine fish larvae were usually fed small invertebrates called rotifers which themselves are fed diets enriched in oils.

Earlier work on reproduction of Striped Trumpeter had already made significant progress, with brood stock caught, spawning in captivity realised and early larval protocols established. Fish had been weaned onto inert diets at 100 days of age and transformed into juveniles at 250 days when they developed stripes. Nevertheless, insufficient numbers had been produced to trial the fish in cage culture.

Objectives

One objective of the projects was to look at specific technical issues from a husbandry point of view, for example, determine its optimal environmental parameters, water quality systems and tank design for reducing hatchery mortality and malformation in finfish larvae.

Another objective was to look into broader whole of life cycle issues such as: evaluating formulated diets and their use in early weaning; determining baseline lipid, vitamin and amino acid composition of eggs and yolksac larvae from wild and captive Striped Trumpeter brood stock. Additionally the projects considered the growth and survival of Striped Trumpeter post larvae and juveniles reared under semi-commercial conditions.

Benefits

The likely benefits are identified in a triple bottom line framework as follows.

Economic

- Substantial progress made towards a technically feasible Striped Trumpeter aquaculture industry in Australia.
- Improved, systematic ways to control microbial communities and for the use of probiotics in improving hatchery survival.
- Enhanced potential for diversification of Australian sea cage farming industry for marine species (currently based predominantly on Atlantic Salmon), particularly in Tasmania.
- Enhanced potential for other aquaculture initiatives concerning marine species in Australia and elsewhere. For example, from the hatchery technology developed (i.e. ozone technology and water quality), the industries/potential industries that will benefit include those for rocklobster and Yellow Tail Kingfish.

Environmental

No environmental benefits are likely.

Social

- Striped Trumpeter do not have the same disease profile as Atlantic Salmon and as such there is a reduced risk of social disruption to communities reliant on the Atlantic Salmon industry due to fewer disease outbreaks or other major setbacks.
- Educational benefits from postgraduate training opportunities.

Adoption

The research investment has shifted the prospects of a Striped Trumpeter industry considerably through the current ability to conduct commercial scale trials in sea cages.

The next steps to address for an economically viable and sustainable Striped Trumpeter aquaculture industry to become a reality include:

(i) technical feasibility of growing out in sea cages

(ii) economic viability of production in sea cages

(iii) definition of the target market and marketing strategy for the species.

Attribution

The two research projects examined in this analysis were a significant investment into the commercialisation phase for Striped Trumpeter. Therefore it is assumed that 80 per cent of the benefits can be attributed to the projects.

Beneficiaries

The beneficiaries of the research are most likely to be the Tasmanian aquaculture industry, as well as other finfish aquaculture producers. Australian society could benefit in the longer term due to diversification and expansion of the Australian aquaculture industry.

Conclusion

There has been a significant Australian investment ($7.5 million) in the development of a Striped Trumpeter industry over the past decade. While there are still some uncertainties involved, outstanding progress has been made in overcoming some of the technical constraints to a viable Striped Trumpeter aquaculture industry. Given the assumptions made, the investment in the research would appear to have been marginal with an expected rate of return of over 6 per cent.

However, there have been significant spin offs to other Australian aquaculture industries particularly from the hatchery technology developed (e.g. ozone technology and water quality) which have not been valued in this analysis.

Some of the people the FRDC has helped to develop in 2007–08

Key stories

Review of Seafood Leadership program

Since 2000, more than 100 people have graduated from FRDC-funded Advance in Seafood Industry Leadership program, significantly enhancing leadership capacity in the Australian seafood industry. In 2008 a key group of graduates, under the leadership of Katherine Sarneckis of the Northern Territory Seafood Council have participated in a project to critically review the leadership needs of the industry, and how well the Advance in Seafood Industry Leadership program has met these needs.

The review indicated a very high level of support for ongoing investment in leadership development, and a high level of satisfaction with the program from graduates and sponsors. The review highlighted the continuing need to develop a pool of inspiring, capable people with the willingness to provide leadership across recreational and commercial fishing, seafood and aquaculture sectors to secure the industry's future. The review model itself drew upon the leadership skills of program graduates and provided opportunity to 'give back' to the development of future leaders.

Advance in Seafood Leadership program — future leaders encouraged

The FRDC-funded industry leadership program aims to help develop the future leaders in the seafood industry by challenging participants to work on key projects while learning core leadership skills.

Fifteen seafood industry members from across Australia graduated from the six-month FRDC-supported program in September. Participants put the skills they learnt through the program to use by designing and implementing industry projects.

Some of the projects undertaken included investigating why fishers lack representation, profiling under-utilised Australian species for product development, and establishing effective ways to protect water quality.

David Sandrussi, from the Sydney Fish Market's marketing team, researched opportunities to create innovative seafood products using under-utilised Australian species. The four species he profiled — Ocean Jackets, Cuttlefish, School Prawns and Mirror Dory — are plentiful but do not gain maximum returns. He developed four product recipes, which are seen as commercially viable and meeting the key criteria of using only under-used Australian seafood species. He is now working on an advertising campaign.

Meanwhile, oyster farmer Greg Carton from Pambula, New South Wales, examined establishing an effective mechanism for protecting water quality within the Pambula Lake catchment to enhance the future success and sustainability of his industry.

Employing about 30 people, the Pambula Lake oyster industry is an important sector within the local economy and there is a direct economic link to the health of the waterway. Through his industry project, a partnership between the oyster industry, Southern Rivers Catchment Management Authority, Bega Valley Shire Council, NSW Department of Environment and Climate Change and other catchment stakeholders has been created. It will help prioritise projects through an estuary processes study and act to influence planning decisions and land-use practices within the catchment.

Success for a past program participant — Kellie Williams, Leadership program 2007

As part of Kellie's role as Chief Executive Officer of the Moreton Bay Seafood Industry Association Inc. she has been heavily involved in developing a strong partnership between recreational and commercial sectors using Morton Bay and helping develop the research-backed submissions to the Queensland Government.

On Friday 6 June 2008 the Moreton Bay Seafood Industry Association won the United Nations World Environment Day Award for Excellence in Marine and Coastal Management.

Recreational Leadership program — recreational sector looks for advocates

Like the commercial side of the fishing industry, the recreational sector needs new leaders to assist meet challenges. Recfish Australia, assisted by the FRDC, initiated a program to promote and encourage the next generation of leaders. The inaugural 'Next Generation of Leaders' program, funded by DAFF and the FRDC was held in the Northern Territory in September. The program saw 19 participants from across Australia take part in an intensive two-and-a-half day leadership course.

The concept behind this program is to find aspiring new leaders within the recreational fishing industry who are passionate about fishing and who are interested in contributing to the administration, management, research, development, extension and general improvement of recreational fishing in their state and the nation.

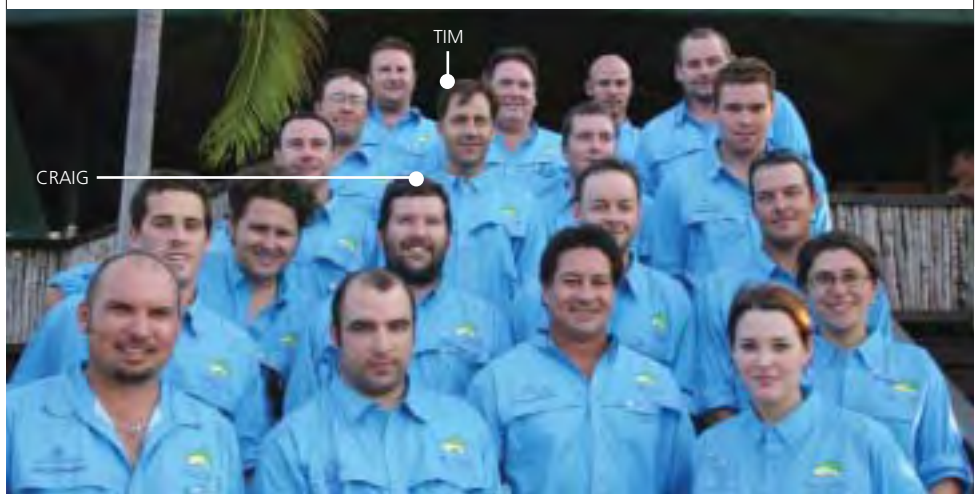
The group, which included tackle store managers, accountants, IT managers and fish biologists, was selected on the basis of people's enthusiasm for fishing. Even though there are thousands of people who are passionate about recreational fishing, it is important to inform them that opportunities *do* exist to work in the industry — either in a paid or voluntary capacity.

A number of the participants were already directly involved in the recreational fishing sector through their day job or business. One factor that was common to all was they were keen to contribute to future success of the recreational sector.

The current state of the industry is such that a small group of people are doing an ever-expanding list of tasks, managing projects and dealing with strategic issues at the local, state and national level. The constant pressure placed on this group will ultimately impact on the industry's future to deal with important issues, such as Marine Protected Areas, animal welfare, resource allocation, monitoring, extension and communication, research and promotion of best practices.

FRDC funded two participants to attend conferences as a secondary part of the program. Craig Sheppard (New South Wales) and Tim Wicks (Tasmania) were identified by their peers as outstanding potential leaders and were awarded the travel bursaries.

Craig Sheppard (pictured below), a park manager, attended Seafood Directions held in Tasmania in November, meeting with commercial fishers. **Tim Wicks** (pictured below), a Geographic Information Systems project manager, will attend the Fifth World Recreational Fishing Conference in Florida in November 2008.



Bursaries and scholarships program

The FRDC People Development Program launched an extensive bursary and scholarship program in 2008. The program provides professional development opportunities across all sectors to build leadership, skills, networks and knowledge. Examples of new opportunities are two annual Agribusiness Executive scholarships, an Indigenous Development scholarship, Emerging Leader Governance scholarships and Governance and Professional Development scholarships for Women. New bursaries were also awarded to support visiting fellows, international travel and conference attendance.

Australian Rural Leadership Program

The fundamental mission of the Australian Rural Leadership Program (ARLP) is to build capable leaders for, and from, rural Australia. For participants, the inner work of leadership development requires exploration of who you are, what they stand for and where you are going on your leadership journey.

Twenty-two men and 12 women from across Australia participated in the 2007 course. David Ellis and Mark Pagano were the two FRDC-funded participants.

Mark Pagano

At the beginning of the course Mark was working for Recfishwest, the peak body representing the interests of recreational fishers in Western Australia.

The challenges faced by Recfishwest at the time included ongoing funding security and the advent of Integrated Fisheries Management (IFM) which is a process to determine and allocate each sector's catch share in Western Australia. Given the importance of the IFM process, Recfishwest more than ever needs to engage meaningfully with recreational fishers at every opportunity. However, recreational fishers as a group are very difficult to engage and there are frequently strong views at the extreme ends of the spectrum, and an expectation that those positions will be advocated forcefully to government.

The ARLP provided a unique opportunity for Mark to network with leaders in a diverse range of sectors facing similar issues and to gain an understanding of the ways that different sectors have approached these challenges.

FROM LEFT: FRDC EXECUTIVE DIRECTOR PATRICK HONE WITH MARK PAGANO, DAVID ELLIS, AND ROB PATRICK, DIRECTOR OF PROGRAMS AND DEVELOPMENT, AUSTRALIAN RURAL LEADERSHIP FOUNDATION.

The ARLP encouraged professional development by providing a platform to embrace and experiment with different leadership styles, and by providing personal challenges that reinforce the importance of fundamental core values. The program was challenging and thought provoking, but also practical.

> I feel very privileged to have been given the opportunity to participate in the ARLP and would like to thank the FRDC for making this opportunity possible.
>
> **Mark Pagano, Senior Management Officer, South West Bioregion, Western Australian Department of Fisheries**

David Ellis

Since participating in the course, David Ellis has been asked numerous times about the value of the Australian Rural Leadership Program and before undertaking the course, would have thought the questions warranted justification.

However following its completion David believes he has grown — from a personal and a professional perspective. The program provided information on emotional intelligence, prioritising life commitments, personality types, media training and negotiation skills, and has given him exposure to a variety of issues that underpin a healthy rural and regional Australia.

The information from the course has helped him prioritise commitments and seek a balance that is more productive. It has also helped him identify when he is 'out of his comfort zone' and provided the skills to deal with those situations.

David believes that one of the greatest outcomes of the program is being able to relate to other participants — who he now calls good friends — at different levels and obtain views and feedback on a variety of topics.

> I believe the FRDC's investment in the ARLP helps us all to take an interest in regional and rural issues and contribute to the various aspects that bind the fabric of communities together because most seafood industries depend on a healthy rural community.
>
> **David Ellis, Research Manager, Australian Southern Bluefin Tuna Industry Association**

International bursaries — FRDC partners Seafood CRC for a bigger taste of European seafood

Two fishers, a general manager, a sales and marketing executive, and an R&D executive travelled together to Brussels this year to attend the 2008 European Seafood Exposition (ESE) after winning FRDC and Seafood CRC-supported bursaries.

This was the first time FRDC and the Seafood CRC partnered in a program specifically developed to educate the industry about international trends. The recipients participated in industry tours of Spain, France and the United Kingdom and were key members of the Australian delegation and pavilion at the Exposition.

Following the tour, each recipient provided a report outlining the issues they saw as being important for industry members to consider when looking at the European markets. In addition, each recipient gave an undertaking to share information gained, as a result of the trip, by giving presentations to industry meetings where possible.

STEPHEN McLEARY, KRIS CARLBERG, KANE WILLIAMS AND LUKE FREEMAN.

The FRDC bursary winners were:

Kane Williams — an abalone fisherman with an honours degree in science (majoring in marine biology) and a Bachelor of Technology (Aquaculture). Kane has worked in the tuna industry, for the Department of Primary Industries and Resources South Australia, for the South Australian Research and Development Institute and more recently, for the Australian Tuna Boat Owners Association and the Abalone Industry Association of South Australia. In 2007 he completed the seafood leadership program.

Luke Freeman — a sales, marketing and quality control executive for Petuna Seafoods. Luke is also qualified chef with years of experience in the hospitality industry. Petuna is a harvester in both the wild-catch and aquaculture areas.

Ian Nightingale — Executive Director of PIRSA's aquaculture division. Ian has worked for more than 10 years in regional development and aquaculture-related roles and was awarded a special bursary.

The Seafood CRC bursary winners were:

Stephen McLeary — a fisherman who manages and skippers his own vessel in the Western Australian rocklobster fishery. He is also involved in a partnership with Kimberley scale fish processing, is President of the Central West Coast Fisherman's Association, and involved in many industry committees.

George Pitt — General Manager of Tasea Enterprises. Tasea markets more than one-third of Tasmania's farmed shellfish production and markets additional seafood from South Australia and New South Wales.

I would like to thank the FRDC for giving me the opportunity to attend the ESE, as well as the pre- and post-industry tours. It was an awesome experience and I have returned home with a greater perspective of both the European and global seafood markets, some new ideas and some interesting lessons (one in particular relating to natural, depurated Spanish oysters). The tour afforded me a diverse insight into the European seafood industry, ranging from fishing, aquaculture and markets to the European Commission fisheries policy unit. Roy Palmer did an excellent job of organising and coordinating the tour, evidenced by the smooth and enthusiastic fashion in which a bleary eyed group of Australians traipsed around Europe, which was a draining but thoroughly worthwhile undertaking. Thanks again to the FRDC for their generosity and I hope this concept is continued into the future.

Kane Williams

Science and Innovation Awards — mum's the word for bigger prawns

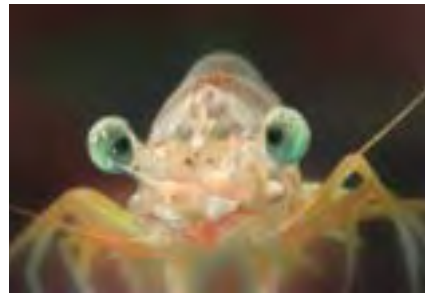
The 2007 winner of the $10,000 FRDC-sponsored Science and Innovation Award for Young People in Agriculture, Fisheries and Forestry was Melony Sellars. The award will allow her to compare the progress of new triploid bred prawns, developed with world-first CSIRO technology, with a control group of prawns bred conventionally with two sets of chromosomes (one from each parent).

Precisely one minute after a prawn spawns, a crucial change to the water environment will stop the usual process of reproduction (known as meiosis) from occurring, so that two sets of maternal chromosomes are retained instead of one. The result is a prawn with a third, extra, set of chromosomes. This provides more genetic diversity that should give the crustaceans increased ability to cope with environmental changes. Further work will use prawns bred with an extra chromosome through an older, more widely used method — where meiosis is stopped eight minutes after spawning and the mother's chromosomes replicated.

The next step for the CSIRO Food Futures Flagship researcher will be to test her hypothesis, that prawns bred using the new method will perform better across different environments and cope more easily with changes.

Melony was one of 17 young researchers recognised at the 2007 awards given across a range of fields supported by 10 of the rural research and development corporations and coordinated by the Bureau of Rural Sciences on behalf of DAFF.

For further information on the winners: Science Awards Coordinator; e-mail: scienceawards@brs.gov.au; telephone: 02 6272 4197; web: www.brs.gov.au



FROM LEFT: PETER HORVAT FRDC, MELONY SELLARS WITH JUSTIN FROMM AND JO-ANNE RUSCOE FROM THE FRDC.

Nuffield Scholarship — scholar sets sail on marketing quest

South Australian based oyster farmer Lester Marshall was the winner of the 2007 FRDC-funded Nuffield Australia Farming Scholarship. The scholarship will see Lester undertake a worldwide odyssey at the beginning of 2008 to investigate regional brands and how company-branded products can drive market pull and consumer awareness.

The goal is to gain an insight into implementing a regional brand and to be able to use that information to develop one for the Eyre Peninsula — Australia's seafood frontier.

Lester Marshall is Managing Director of Coffin Bay Oyster Farm at Port Lincoln, which he started with his wife Julianne 15 years ago. Today they employ 12 staff and produce 6–8 tonnes of oysters a week, on average, sending product across Australia.

In 2007 there were 16 Australians to receive a Nuffield Scholarship, each worth $25,000. Lester Marshall's scholarship is the first to be sponsored by FRDC through the People Development Program.

Nuffield Australia awards scholarships each year to farmers in Australia. The objective is to increase practical farming knowledge and management skills and techniques generally.

For further information: www.nuffield.com.au

Report of Operations — Part 3

Management and accountability and corporate governance

Program 4: Management and Accountability

Planned outputs for this program are continually improving 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 outcome but enhance the effectiveness to which Programs 1–3 are delivered.

Principal inputs

During 2007–08, $2.9 million was invested in activities within this program, including $0.7 million on communications.

Summary of performance indicators for Program 4

Since the management and accountability outputs of Program 4 contribute to the planned outcome of the FRDC R&D 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

TABLE 7: PROGRAM 4 PERFORMANCE INDICATORS

Performance indicators	Achievement
Business strategy and planning	
Approval of Annual Operational Plan and Annual Report by the Parliamentary Secretary and the acceptance of these documents by the FRDC's representative organisation	Yes
Evidence of FRAB influence on research providers — minimum 80 per cent of applications submitted through FRABs	Yes
The views and priorities of stakeholders influence research providers in the development of R&D applications	Yes
Information management systems	
The FRDC website is viewed as a source of fishing industry information	Yes
Stakeholder satisfaction with information management systems; especially Omnifish (fomerly FishBase), see page 63 and its web interface Fishnet (project management system)	Yes
Corporate communications	
Adoption of the results from research and development	Substantially yes
Positive feedback from market research on stakeholders	Yes
Reporting requirements are met on time and within budget	Yes
Publications are of a high standard and are developed and delivered in a professional manner	Yes
Risk management	
Good business performance with a minimum of failures	Yes
An operational risk management framework	Yes
Quality system	
Maintenance of FRDC's ISO 9001:2000 accreditation	Yes
Human resources management	
Happy, competent and well-trained staff contributing to the achievement of the Corporation's objectives	Yes
Retention of staff	Yes
Finance and administration	
Contributions from fishers and aquaculturists above that which will be matched by the Australian Government [minimum of 85 per cent of the contributions paid by industry to the FRDC that can be matched by the Australian Government]	Yes
FRDC expenditure on R&D programs maximised [the proportion of expenditure on R&D programs, and programs support — respectively minimum 90 per cent (including communications) and maximum 10 per cent]	No, target for program support was exceeded by 1 per cent
Corporate governance	
An ethical business culture	Yes
Meeting statutory requirements; for example, in relation to annual operational plans, annual reports and investment plans	Yes

Management and accountability

Business strategy and planning

FRDC strategic planning and reporting documents (Annual Operating Plan and Annual Report) were completed and presented within their duly legislated timeframes. In addition, the annual report was presented and considered by the FRDC's representative body Recfish Australia at their Annual General Meeting on 21 September 2007.

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

Over the course of the year the FRDC collaborated and worked with all the government and corporate research and development corporations on major issues. This included providing data to the Council of Rural Research and Development Corporations' Chairs, responding to the Federal Government's Letter of Expectation and participating in the evaluation framework for rural research and development.

Rural research and development corporations

The FRDC are one of 15 research and development corporations 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 significantly were the development of a reporting framework and the Climate Change Research Strategy for Primary Industries, to help primary industries respond to climate change by investing in R&D. FRDC participated in the Council Chairs, Executive Directors and Communications Managers meetings.

FRDC coordinated the development of the primary producers tour for the Lexus Taste for Excellence, working with Meat & Livestock Australia, Australian Pork and Horticulture Australia. In addition, FRDC provided Australian Pork with information, advice and services on the use of FRDC's project management software.

Fisheries Research Advisory Bodies (FRABs)

The FRDC supports a network of FRABs covering Commonwealth fisheries and the fisheries of each state and the Northern Territory. The FRABs have an extremely important role in maximising the efficiency of the FRDC's planning and investment processes. In the 2007–08 funding round approximately 95 per cent of all open call applications were submitted through, or reviewed by the FRABs and the People Development Advisory Group.

The FRABs represent all sectors of the fishing industry, fisheries managers and researchers; and most also include environmental and other community interests. Their Chairs at 30 June 2008 were as follows.

Chairs of FRABs 2007–08

Commonwealth	Mr Ian Cartwright
New South Wales	Professor Derek Anderson
Northern Territory	Ms Heather Brayford
Queensland	Mr James Fogarty (interim)
South Australia	Professor Anthony Cheshire
Tasmania	Mr Ian Cartwright
Victoria	Mr Ross Hodge
Western Australia	Mr Angus Callander

For further information on the FRABs visit www.frdc.com.au/research/frab/

Other consultation structures

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.

To increase their effectiveness at the strategic level and to share information, the rural R&D corporations including the FRDC, collaborate through a committee of Chairs, supported by a part-time secretariat. The Chairs Committee also provides continuity and consistency in communication about the role and contribution of RDCs, and in representation, networking and participation in formulation of policy.

Information management systems

In 2007–08 the FRDC finalised and launched its redeveloped project management software system 'OmniFish'. The upgrade was necessary because the previous software platform 'FishBase' had reached its capacity for growth. The new 'dot net' platform is designed to be scalable and will enable the FRDC to successfully manage its portfolio of R&D projects into the future.

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

The transition to Omnifish took longer than expected and required significantly more time, for both staff and engineers, to test and ensure data integrity. As a result of the investment by FRDC and the consultants, the system remains one of the most powerful project management tools on the market.

The FRDC established, as part of the change over to OmniFish an information technology (IT) development plan that outlines the upgrade of other IT systems and infrastructure to ensure the maximum efficiency of its whole IT network. It is anticipated that in the latter half of 2008 the remaining software and hardware upgrades will be implemented.

Quality system

The FRDC undertook its triennial quality audit on 12–13 November 2007 and maintained the Corporation's certification as an AS/NZS ISO 9001:2000 organisation. In addition to the significant triennial audit, FRDC also undertook an internal audit as part of its monitoring and continual improvement approach.

The FRDC aims to meet or exceed the expectations of its stakeholders and the other people and organisations with whom it does business. To do this, it has adopted Total Quality Management as its operating philosophy. The FRDC integrates a 'quality approach' into all its work. The FRDC's quality management system also encompasses the features of a Service Charter.

Corporate communications

FRDC works closely with a broad section of the fishing industry, which provides a first hand opportunity to hear what our stakeholders think and what information they need. To ensure the FRDC stays up to date it undertakes independent stakeholder reviews biannually, the results of which are available from the FRDC website — www.frdc.com.au

In 2007–08, FRDC's *FISH* magazine continued to be a major tool for communicating and helping extend research findings for the Corporation. The publication has steadily gained widespread recognition for its quality and content since its launch in March 2007 and is now one of the leading fisheries research related magazines in the country. In total four editions were published during the year achieving an annual circulation of approximately 60,000 copies.

> The June 2008 "FISH" publication has just come across my desk and I wanted to let you both know that I thought it was one of the best industry publications I have seen for some time — well presented, easy to read, together with a good spread/scope of articles that are written intelligently and show a broader understanding of industry's issues than some might expect an R&D organisation to have an interest in — well done!
>
> **Heather Montgomerie, General Manager, Legislative Programs, Aquaculture Division**
>
> I congratulate you on latest "FISH". Easily the most interesting and relevant and readable natural resource magazine edition I have ever read.
>
> **Brian Jeffriess, President, Australian Southern Bluefin Tuna Industry Association**

Continuing on the efforts to disseminate information about research and development projects FRDC formed a partnership with Andrew Ettingshausen and the 'Escape with ET' television program. The 24 episode series averaged 600,000 viewers and gave FRDC a vehicle to showcase a range of research related activities.

The FRDC website was promoted widely over the 2007–08 year, which resulted in an increase in the number of people visiting the website. The species fact sheets remain by far the most popular area of the website, with the events calender growing in popularity along with online viewing of *FISH* magazine. The main feature added to the site this year was the inclusion of streaming video from the 'Escape with ET' program. This will be expanded upon in the coming year with a full website review scheduled for completion by late 2008.

A key activity in 2007–08 was to maintain the strong industry relationships that underpin 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. Board visits to Cairns, Hobart and Perth during the year reiterated the FRDC's commitment to our stakeholders.

November 2007 saw a change of government and shortly thereafter, in December, the appointment of a new Minister for Agriculture, Fisheries and Forestry, the Hon. Tony Burke MP. Considerable work was undertaken by FRDC staff to provide the Minister and his staff a full briefing on the activities of the FRDC and the scope of R&D being funded.

Risk management

There was no incidence of fraud during 2007–08.

The Board reviewed and approved a revised 2007–08 risk management policy and risk register at its February 2008 meeting. All staff participated in an internal risk workshop on 15 January 2008 which was used to update the Corporation's risk register.

The FRDC participated in the 2007–08 ComCover's annual benchmarking survey of risk management achieving a rating of six out of ten. The average for the 124 participating government agencies was five out of ten and for small agencies such as the FRDC, the average was four out of ten.

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

All new directors and staff undergo comprehensive induction training, 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 that is addressed in this annual report. All directors also received appropriate updates of a book, published by the Australian Institute of Company Directors, on the duties and responsibilities of directors. Eight people (the Executive Director and four other directors, and three senior staff) have completed the Diploma Course of the Australian Institute of Company Directors.

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 will also take out insurance policies to mitigate insurable risk.

Finance and administration

The 15 August 2008 audit report by the Australian National Audit Office confirmed that the FRDC's 2007–08 financial statements gave a true and fair view of the financial position of the Corporation.

On 25 September 2006, FRDC became the sole member of Seafood Services Australia Limited (SSA), a company limited by guarantee. FRDC ceased being a member on 31 October 2007. No consideration was paid as a result of this arrangement. The operations of SSA for the component of the financial year have been consolidated with FRDC (the parent entity) and can be seen in the financial statements.

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.

The newly established Seafood Cooperative Research Centre (Seafood CRC) commenced operation on 1 July 2007. In total over $137 million dollars will be invested by industry and the Australian Government over the next seven years. FRDC is a significant contributor investing $24.5 million over the period. FRDC will work collaboratively with the Seafood CRC to maximise the investment opportunities for both organisations.

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

An overview of the sectors that have contributed more than the maximum matchable contribution, is shown in table 5: Industry contributions, maximum matchable contributions by the Australian Government and returns on investment, 2007–08 (see page iv).

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. Fulfilment of this policy is evidenced in the Statement of Financial Position in the Corporation's monthly financial statements.

See also Note 1.7 of the financial statements (page 96).

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 FRDC's *FISH* magazine and is available on the website www.frdc.com.au

Consultancy services and selection of suppliers

During the year, the FRDC engaged four 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)	Blake Dawson Waldron Project agreement and lease negotiation advice $10,996.66
Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	Clayton Utz Legal advice — Seafood CRC project agreement review; contract with Australian Pork Limited; SSA constitution amendment $133,163.20
Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	Clarendon Lawyers Board review 2007 $46,200.00
Name of consultant Nature and purpose of consultancy Cost (exclusive of GST)	Business Generation Strategic planning advice $22,287.74

When selecting suppliers of goods and services, the FRDC 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.

The following processes apply to FRDC procurement:

More than $100,000	Open tender
$30,000 to $100,000	Selective tender, with at least three written quotations
Less than $30,000	Competitive tender is not required

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 50 partner organisations that employ over 200 principal investigators, and many more researchers, communicators and technicians. And that's not to mention the hundreds of industry people who work on the various projects.

Staff

In 2007–08, the FRDC operated with only 11 full-time-equivalent staff members (on average). 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.

In 2007–08 there were a number of staff changes. **Matt Barwick**, Projects Manager (Research) moved to the Murray–Darling Basin Commission to work on the Native Fish Strategy. **Tina Lin** joined the FRDC in early January 2008 and is in her final year of a commerce degree at the University of Canberra, majoring in accounting and business management and will be working within the Business Development Unit. **Ana Rubio** joined the FRDC to work in the Programs area. Ana has a wealth of experience in fish and aquaculture. She did her undergraduate degree in marine zoology after which she undertook a Masters in Fisheries and Aquaculture at the University of Wales and also worked on oyster farms in Ireland. She then came to Australia to commence a PhD at the Australian National University in Canberra and undertook fieldwork with farmers on the south coast of New South Wales.

Helping develop staff

The FRDC recognises that excellent performance by staff and directors is essential to the fulfilment of the Corporation's mission.

During 2007–08, one staff member continued a diploma of government financial management. Staff also undertook job-related training, attended conferences relevant to FRDC activities and the fishing industry, and worked with researchers and industry people on various aspects of project management.

Staff members are also encouraged to maintain professional affiliations. They have memberships of the Australian Institute of Company Directors, the Australian Society of Certified Practising Accountants, World Aquaculture Society, Australian Society of Fisheries Biologists, Public Relations Institute of Australia, the Institute of Public Administration Australia and the Australian Institute of Management.

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 CAC Act, to which all directors and staff are required to adhere. New directors and staff are briefed comprehensively on the code during induction training.

Occupational health and safety

No injuries occurred on FRDC premises during 2007–08.

The FRDC working environment is reviewed periodically by occupational health and safety consultants. This year, a workplace safety and injury management company made an ergonomic assessment of each staff member's immediate working environment and provided training in workplace health and prevention of injury. Staff were also provided the opportunity to access influenza vaccinations.

Disabilities

The FRDC implements the Commonwealth Disability Strategy on two levels: as a provider of services resulting from R&D and as an employer. During the year the FRDC implemented the strategy to an extent appropriate to the functions and size of the Corporation.

The FRDC website meets the Australian Government accessibility guidelines for presentation of documents via the Internet.

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 practice, 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.

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 11, 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 (page 64) and the attendant emphasis on continual improvement.

Corporate governance

'Governance' refers to processes by which organisations are directed and controlled — including, among others, 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 FRDC's high level of commitment to these principles, FRDC policies and financial statements are available from the FRDC website — www.frdc.com.au

Representative organisations and other stakeholders

The FRDC reported to Recfish Australia, its representative organisation.

Under section 15(2) of the PIERD Act and the Guidelines on Funding of Consultation Costs by Primary Industries 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 2007–08 the FRDC incurred $2100 in such expenses; planned expenditure during 2007–08 was $10,000.

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 visions, mission and planned outcomes. As reflected in figure 3 on pages xii–xiii, the FRDC'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 that of 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 starting on page 126.

Responsible ministers and exercise of ministerial powers

The Hon. Tony Burke MP, Minister for Agriculture, Fisheries and Forestry became the Minister responsible for the FRDC following the change of government on 24 November 2007 and being appointed to the position on 3 December 2007.

Prior to the election the Hon. Peter McGauran MP was Minister for Agriculture, Fisheries and Forestry, Senator the Hon. Eric Abetz was the Minister for Fisheries, Forestry and Conservation, and the Hon. Sussan Ley MP was the Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry.

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. The FRDC has received no ministerial directions during 2007–08.

Under the CAC Act, the Minister may notify the Board of any general Australian Government policies that apply to the Corporation. At the date of this report, the following 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 5-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 11 September 2007 the Hon. Sussan Ley MP, Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry wrote outlining the Federal Government's Statement of Expectations for the Fisheries Research and Development Corporation (FRDC).

Government policy

The FRDC during 2007–08 complied with all 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. 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. A breakdown of funding is outlined in table 2: Maximum FRDC expenditure on R&D Programs (see page iii).

However, the FRDC, like every organisation continues to face ever increasing cost pressures due to the higher levels of compliance reporting required by the Australian Government.

Energy efficiency

The policy for Improving Energy Efficiency in Commonwealth Government Operations seeks to improve energy efficiency in relation to vehicles, equipment and building design.

The FRDC follows the policy with respect to factors relevant to the Corporation. 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 2007–08, 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. A full overview of how the FRDC complies is available on line at www.frdc.com.au

To seek access to FRDC documents, please contact the FRDC's Business Development Manager during normal business hours. Contact details for the FRDC are shown on the inside back cover of this report.

The Board

The Board comprises up to nine directors who are appointed in accordance with sections 17 and 77 of the *Primary Industries and Energy Research and Development Act 1989* (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.

A finance and audit committee and a remuneration committee, and other ad hoc committees of the Board as deemed necessary from time to time, act on the Board's behalf.

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 operations in action.

As with their other roles as directors, members of the Board committees retain their rights to gain access to all information held by the FRDC and to seek independent third-party advice.

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

DIRECTORS FROM LEFT: PAUL McSHANE, RICHARD N. STEVENS, RICHARD A. STEVENS, PETER NEVILLE (CHAIRMAN), STUART RICHEY AND RAY JOHNSON AT THE OFFICES OF RECFISHWEST, HILLARYS, WESTERN AUSTRALIA.

PETER NEVILLE

DENIS BYRNE

STUART RICHEY

Directors' biographies

Mr Peter Neville: Chairman

Appointed as Chairman 1 September 2007. Chair of the Remuneration Committee; and member of the Finance, Audit and Risk Management Committee (from 1 September 2007).

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. Peter is the Chairman of the Southern Bluefin Tuna Management Advisory Committee of the Australian Fisheries Management Authority.

Mr Denis Byrne: Chairman

Chairman from 1 January 2002 to 31 August 2007. Chair of the Remuneration Committee; and member of the Finance, Audit and Risk Management Committee (until 31 August 2007).

Denis Byrne is a commercial lawyer with wide corporate, infrastructure and resources experience. He was formerly Managing Partner of Freehill Hollingdale & Page, Brisbane and President of the Queensland Law Society and the Law Council of Australia. Denis is Chairman of the Stanwell Corporation Limited and serves as a director on a number of other boards. Denis is also a member of the Australian and New Zealand Takeovers Panels both of which adjudicate on disputes in takeovers of publicly listed companies.

Mr Stuart Richey AM: Deputy Chairman

Appointed as a director from 1 September 2003, re-appointed from 28 September 2006. Chair of the Finance, Audit and Risk Management Committee; and member of the Remuneration Committee.

Stuart Richey has been actively involved in the fishing industry for more than 30 years and has considerable experience in most fishing methods. Stuart is also Chairman of the Northern Prawn Management Advisory Committee and a Director of Marine and Safety Tasmania. He holds Skipper Class 1 (fishing) and Master Class 4 (trading) qualifications.

PATRICK HONE

RAY JOHNSON

PAUL McSHANE

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 11 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.

Dr Ray Johnson: Director (non-executive)

Appointed as a director from 28 September 2006.

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.

Dr Paul McShane: Director (non-executive)

Appointed as a director from 28 September 2006.

Paul McShane is a research scientist and former Vice President of International and Development at the Australian Maritime College, Tasmania. He is presently the Managing Director of Global Marine Resource Management and has held senior management positions in marine research agencies in Victoria, South Australia and New Zealand. Paul brings 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.

FRANK PROKOP

RICHARD A. STEVENS

RICHARD N. STEVENS

Mr Frank Prokop: Director (non-executive)

Appointed as a director from 28 September 2006.

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. He 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 research and development, business and financial management, and economics and sociology.

Mr Richard A. Stevens OAM: Director (non-executive)

Appointed as a director from 28 September 2006. Member of the Finance, Audit and Risk Management Committee; and member of the Remuneration Committee.

Richard A. Stevens consults to private and public sector clients. He is a member of the Board of the Australian Fisheries Management Authority, Director of the Queensland Rural Adjustment Authority and serves on the Queensland, Northern Territory and New South Wales Standing and Advisory Committees. He has a wealth of experience in conservation and management of natural resources, technology transfer, environmental and ecological matters, administration of research and development, business and financial management and economics.

Mr Richard N. Stevens: Director (non-executive)

Appointed as a director from 28 September 2006.

Richard N. Stevens is R&D 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 Cooperative Research Centre, established in July 2007. He 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.

Board committees

Currently the Board has two committees:

- The Finance, Audit and Risk Management Committee (Chair Stuart Richey; members Peter Neville and Richard A. Stevens)
  - 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 (Chair Denis Byrne / Peter Neville; members Stuart Richey and Richard A. Stevens)
  - 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 will make 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 terms of reference for these committees visit the FRDC website — www.frdc.com.au

Attendance at Board meetings held during 2007–08

On the following page is a table showing attendance at Board meetings held during 2007–08.

The Chairman approved all absences from Board meetings in accordance with section 71(2) of the PIERD Act.

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.

TABLE 8: ATTENDANCE BY DIRECTORS AND OFFICER

	Board meetings							Finance, Audit and Risk Management Committee meetings			Remuneration Committee meetings	
Number of meetings held during the year	7							3			2	
Dates	15/08/2007	18/09/2007 (T/C)	16/10/2007 (T/C)	21/11/2007	19–20/02/2008	08–09/04/2008	12/06/2008	14/08/2007	05/02/2008	18/02/2008	27/05/2008	10/06/2008
Mr Peter Neville §	—	×	×	✓	✓	✓	✓	—	✓	✓	✓	✓
Mr Denis Byrne §	✓	—	—	—	—	—	—	✓	—	—	—	—
Mr Stuart Richey *ƒ*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dr Patrick Hone	✓	✓	✓	✓	✓	✓	✓	O	O	O	O	O
Dr Ray Johnson	×	✓	✓	✓	✓	✓	✓					
Dr Paul McShane	✓	×	×	✓	✓	✓	✓					
Mr Frank Prokop	✓	✓	✓	✓	✓	✓	✓					
Mr Richard A. Stevens	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mr Richard N. Stevens	✓	✓	✓	✓	✓	✓	✓					
Mr John Wilson (Corporate Secretary)	✓	✓	✓	✓	✓	✓	✓	O	O	O	O	O

Key to table 8 showing attendance

✓ Attended meeting
× Did not attend meeting
— Not eligible to attend meeting
O Observer
§ Chair of Remuneration Committee
ƒ Chair of Finance, Audit and Risk Management Committee

Auditor-General's report

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 and the consolidated entity for the year ended 30 June 2008, which comprise: a statement by the Directors and Executive Director; income statement; balance sheet; statement of changes in equity; cash flow statement; schedules of commitments and contingencies; summary of significant accounting policies; and other explanatory notes.

The Responsibility of the Board of Directors for the Financial Statements

The members of Board of 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* and the Australian Accounting Standards (including 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. My audit has been conducted 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 these risk assessments, the auditor considers internal control relevant to the 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 Corporation's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the Board of Director's, 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 and the consolidated entity:

(a) have been prepared in accordance with the Finance Minister's Orders made under the *Commonwealth Authorities and Companies Act 1997*, and the Australian Accounting Standards (including the Australian Accounting Interpretations); 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 and the consolidated entity's financial performance and its cash flows for the year ended 30 June 2008 and the financial position of the Fisheries Research and Development Corporation as at 30 June 2008.

Australian National Audit Office

Alana Foster
Executive Director

Delegate of the Auditor-General

Canberra
15 August 2008

FISHERIES RESEARCH AND DEVELOPMENT CORPORATION
AND CONTROLLED ENTITY

Financial statements

for the year ended
30 June 2008

STATEMENT BY THE DIRECTORS AND EXECUTIVE DIRECTOR

In our opinion, the attached financial statements of the Fisheries Research and Development Corporation (FRDC) and the consolidated entity for the year ended 30 June 2008 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*.

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.

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

Signed . . . . . 14 August 2008
Peter Neville
Chair

Signed . . . . . 14 August 2008
Stuart Richey
Chair Finance, Audit and Risk Management Committee

Signed . . . . . 14 August 2008
Patrick Hone
Executive Director

Signed . . . . . 14 August 2008
John Wilson
Chief Financial Officer

INCOME STATEMENT

for the period ended 30 June 2008

	Notes	Consolidated		FRDC	
		2008	2007	**2008**	2007
INCOME		**$**	$	**$**	$
Revenue					
Revenue from Government	5A	**16,284,991**	15,984,661	**16,284,991**	15,984,661
Contributions	5B	**9,645,455**	9,706,591	**9,577,232**	9,088,889
Sale of goods and rendering of services	5C	**436,166**	498,954	**336,436**	213,212
Interest	5D	**227,525**	279,249	**221,186**	268,886
Other revenue	5E	**64,168**	53,462	**7,668**	3,796
Total revenue		**26,658,305**	26,522,917	**26,427,513**	25,559,444
Total Income		**26,658,305**	26,522,917	**26,427,513**	25,559,444
EXPENSES					
Employee benefits	6A	**1,738,610**	1,943,554	**1,529,270**	1,421,068
Suppliers	6B	**1,146,553**	1,296,650	**1,003,751**	943,511
Depreciation and amortisation	6C	**467,203**	369,389	**464,902**	351,255
Projects expenditure	6D	**17,370,177**	20,204,869	**17,346,453**	20,766,936
Write-down and impairment of assets	6E	**0**	1,105	**0**	0
Cost of Sales	5C	**64,652**	157,526	**0**	0
Losses from disposal of assets	6F	**700**	0	**700**	0
Other expenses	7	**781,762**	947,557	**735,205**	828,415
Total Expenses		**21,569,657**	24,920,650	**21,080,281**	24,311,185
Loss on deconsolidation	1.2	**95,424**	0	**0**	0
Surplus (Deficit)		**4,993,224**	1,602,267	**5,347,232**	**1,248,259**

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

BALANCE SHEET

as at 30 June 2008

	Notes	Consolidated		FRDC	
		2008	2007	2008	2007
ASSETS		$	$	$	$
Financial Assets					
Cash and cash equivalents	8A	0	916,618	4,733,622	353,162
Trade and other receivables	8B	0	2,484,016	1,971,476	2,455,186
Investments	8C	0	5,001	5,001	5,001
Total financial assets		0	3,405,635	6,710,099	2,813,349
Non-Financial Assets					
Infrastructure, plant and equipment	9A,C	0	359,747	343,235	344,880
Intangibles	9B,C	0	2,232,247	2,691,844	2,232,247
Other non-financial assets	9D	0	43,448	0	0
Total non-financial assets		0	2,635,442	3,035,079	2,577,127
Total Assets		0	6,041,077	9,745,178	5,390,476
LIABILITIES					
Payables					
Suppliers	10A	0	482,059	135,477	284,330
Projects	10B	0	1,157,636	304,419	1,157,636
Other payables	10C	0	38,589	0	0
Total payables		0	1,678,284	439,896	1,441,966
Provisions					
Employee provisions	11A	0	443,984	384,697	383,709
Total provisions		0	443,984	384,697	383,709
Total Liabilities		0	2,122,268	824,593	1,825,675
Net Assets		0	3,918,809	8,920,585	3,564,801
EQUITY					
Reserves		0	86,413	94,965	86,413
Retained surplus		0	3,832,396	8,825,620	3,478,388
Total Equity		0	3,918,809	8,920,585	3,564,801
Current Assets		0	3,444,082	6,705,098	2,808,348
Non-Current Assets		0	2,596,995	3,040,080	2,582,128
Current Liabilities		0	2,053,430	785,623	1,781,942
Non-Current Liabilities		0	68,838	38,970	43,733

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

STATEMENT OF CHANGES IN EQUITY

for the period ended 30 June 2008

	Consolidated						FRDC					
	Retained Earnings		Asset Revaluation Reserves		Total Equity		Retained Earnings		Asset Revaluation Reserves		Total Equity	
	2008 $	2007 $	**2008** $	2007 $	**2008** $	2007 $	**2008** $	2007 $	**2008** $	2007 $	**2008** $	2007 $
Opening balance												
Balance carried forward from previous period	**3,832,396**	2,230,129	**86,413**	82,763	**3,918,809**	2,312,892	**3,478,388**	1,782,699	**86,413**	82,763	**3,564,801**	1,865,462
Adjustment for errors (refer Note 1.21)	**0**	0	**0**	0	**0**	0	**0**	447,430	**0**	0	**0**	447,430
Adjustment for changes in Accounting policies	**0**	0	**0**	0	**0**	0	**0**	0	**0**	0	**0**	0
Adjusted opening balance	**3,832,396**	2,230,129	**86,413**	82,763	**3,918,809**	2,312,892	**3,478,388**	2,230,129	**86,413**	82,763	**3,564,801**	2,312,892
Income and expense recognised Directly in equity												
Revaluation adjustment	**0**	0	**8,552**	3,650	**8,552**	3,650	**0**	0	**8,552**	3,650	**8,552**	3,650
Sub-total income and expenses recognised Directly in Equity	**0**	0	**8,552**	3,650	**8,552**	3,650	**0**	0	**8,552**	3,650	**8,552**	3,650
Surplus (Deficit) for the period	**4,993,224**	1,602,267	**0**	0	**4,993,224**	1,602,267	**5,347,232**	1,248,259	**0**	0	**5,347,232**	1,248,259
Total income and expenses	**4,993,224**	1,602,267	**8,552**	3,650	**5,001,776**	1,605,917	**5,347,232**	1,248,259	**8,552**	3,650	**5,355,784**	1,251,909
Equity balances deconsolidated	**(8,825,620)**	0	**(94,965)**	0	**(8,920,585)**	0	**0**	0	**0**	0	**0**	0
Closing balance at 30 June	**0**	3,832,396	**0**	86,413	**0**	3,918,809	**8,825,620**	3,478,388	**94,965**	86,413	**8,920,585**	3,564,801

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

CASH FLOW STATEMENT

for the period ended 30 June 2008

	Notes	Consolidated		FRDC	
		2008	2007	**2008**	2007
		$	$	**$**	$
OPERATING ACTIVITIES					
Cash received					
Revenue from Government		**16,284,991**	15,984,661	**16,284,991**	15,984,661
Contributions		**11,329,227**	10,235,820	**11,113,128**	9,846,892
Goods and services		**345,117**	213,212	**336,436**	213,212
Interest		**227,525**	279,249	**221,186**	268,886
Net GST received		**1,310,904**	1,309,441	**1,310,904**	1,386,165
Other cash received		**7,668**	3,796	**7,668**	3,796
Total cash received		**29,505,432**	28,026,179	**29,274,313**	27,703,612
Cash used					
Employees		**(1,731,105)**	(1,876,981)	**(1,528,282)**	(1,397,032)
Suppliers		**(1,586,268)**	(1,351,623)	**(1,152,604)**	(793,177)
Project expenditure		**(20,562,760)**	(22,392,069)	**(20,562,760)**	(23,497,069)
Other cash used		**(735,205)**	(829,767)	**(735,205)**	(828,415)
Total cash used		**(24,615,338)**	(26,450,440)	**(23,978,851)**	(26,515,693)
Net cash flows from or (used by) operating activities	12	4,890,094	1,575,739	5,295,462	1,187,919
INVESTING ACTIVITIES					
Cash received					
Proceeds from subsidiary on consolidation		**0**	175,636	**0**	0
Total cash received		**0**	175,636	**0**	0
Cash used					
Purchase of infrastructure, plant and equipment		**(116,931)**	(270,474)	**(116,931)**	(270,474)
Purchase of intangibles		**(798,071)**	(730,705)	**(798,071)**	(730,705)
Proceeds from subsidiary withdrawn on deconsolidation		**(158,088)**	0	**0**	0
Total cash used		**(1,073,090)**	(1,001,179)	**(915,002)**	(1,001,179)
Net cash flows from or (used by) investing activities		**(1,073,090)**	(825,543)	**(915,002)**	(1,001,179)
Net increase or (decrease) in cash held		**3,817,004**	750,196	**4,380,460**	186,740
Cash at the beginning of the reporting period		**916,618**	166,422	**353,162**	166,422
Cash and cash equivalents at the end of the reporting period	8A	**4,733,622**	916,618	**4,733,622**	353,162

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

SCHEDULE OF COMMITMENTS

as at 30 June 2008

	FRDC	
	2008	2007
	$	$
BY TYPE		
Commitments receivable		
GST recoverable on premises commitments	**20,144**	37,833
GST recoverable on project commitments	**5,576,049**	5,196,191
Total Commitments Receivable	**5,596,193**	5,234,024
Other commitments		
Operating leases (1)	**221,581**	416,166
Project commitments (2)	**61,336,541**	57,158,105
Total other commitments	**61,558,122**	57,574,271
Net commitments by type	**55,961,929**	52,340,247
BY MATURITY		
Operating lease commitments		
One year or less	**106,359**	104,294
From one to five years	**115,222**	311,872
Over five years	**0**	0
Total operating lease commitments	**221,581**	416,166
Other commitments		
One year or less	**36,845,652**	33,128,620
From one to five years	**22,639,101**	20,564,839
Over five years	**1,851,788**	3,464,647
Total other commitments	**61,336,541**	57,158,105
Net Commitments by Maturity	**55,961,929**	52,340,247

NB: Commitments are GST inclusive where relevant.

1. Operating leases are effectively non-cancellable and comprise:
The lease for office accommodation on premises at 25 Geils Court Deakin, which expires 31 July 2010. 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 5 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 for which an amount was payable, but that 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 2008

Contingent Liabilities	Claims for overfunding		Total	
	2008	2007	**2008**	2007
	$	$	**$**	$
Balance from previous period	**0**	0	**0**	0
New	**1,374,617**	0	**1,374,617**	0
Total Contingent Liabilities	**1,374,617**	0	**1,374,617**	0

Details of contingent liabilities are disclosed in Note 20: Contingent Liabilities and Assets.

At 30 June 2008, the FRDC had no contingent assets.

Notes to and forming part of the financial statements for the period ended 30 June 2008

Content of the Notes to the Financial Statements

Note 1: Summary of Significant Accounting Policies

1.1 Objectives of FRDC

The Financial Statements and notes are required by clause 1 (b) of Schedule 1 to the *Commonwealth Authorities and Companies Act 1997* and are a General Purpose Financial Report.

The continued existence of the FRDC in its present form and with its present programs is dependent on Government policy and on continuing appropriations by Parliament for the FRDC's administration and programs.

The Financial Statements and notes have been prepared in accordance with:

- Finance Minister's Orders (or FMOs) or reporting periods ending on or after 01 July 2007; and
- Australian Accounting Standards and Interpretations issued by the Australian Accounting Standards Board (AASB) that apply for the reporting period.

The financial report has been prepared on an accrual basis and is in accordance with historical cost convention, except for certain assets 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 Report is 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 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.

Unless alternative treatment is specifically required by an accounting standard, revenues and expenses are recognised in the Income Statement when and only when the flow, consumption or loss of economic benefits has occurred and can be reliably measured.

1.2 Principles of Consolidation

As per a decision of the FRDC board, and pursuant to section 2.6 of the Constitution of Seafood Services Australia (SSA), the Fisheries Research and Development Corporation resigned as a member of SSA effective on 31 October 2007. No financial consideration passed between the parties as a result of this action.

The financial operations of SSA have been consolidated with FRDC (the parent entity) from 1 July 2007 up to 31 October 2007. With effect from 1 November 2007, the financial operations of SSA were deconsolidated from the parent entity.

In the following financial statements where reference is made to the consolidated entity, it refers to both FRDC and SSA. Any specific reference to FRDC or SSA relates to the individual entity.

All inter-entity balances and transactions between FRDC & SSA, including any unrealised profits or losses, have been eliminated on consolidation. Accounting policies in subsidiary have been changed where necessary to ensure consistencies with those policies applied by the parent entity.

Note 1: Summary of significant accounting policies (continued)

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 Statement of Compliance

Adoption of new Australian Accounting Standard requirements

No accounting standard has been adopted earlier than the application date as stated in the standard. The following new standards are applicable to the current reporting period:

Financial instrument disclosure

AASB 7 Financial Instruments : Disclosures is effective for reporting periods beginning on or after 1 January 2007 (the 2007–08 financial year) and amends the disclosure requirements for financial instruments. In general AASB 7 requires greater disclosure than that previously required. Associated with the introduction of AASB 7 a number of accounting standards were amended to reference the new standard or remove the present disclosure requirements through AASB 2005-10, Amendments to Australian Accounting Standards [AASB 1, 4, 101, 114, 117, 132, 133, 139, 1023 & 1038]. These changes have no financial impact but will affect the disclosure presented in future financial reports.

The following new standards, amendments to standards or erratum/interpretations for the current financial year have no material financial impact on FRDC.

AASB 101 *Presentation of Financial Statements (issued October 2006)*

AASB 1048 *Interpretation and Application of Standards*

ERR *Erratum Proportionate Consolidation [AASB 101, AASB 107, AASB 121, AASB 127, Interpretation 113]*

AASB 2007-4 *Amendments to Australian Accounting Standards arising from ED 151 and Other Amendments and Erratum: Proportionate Consolidation*

AASB 2007-5 *Amendments to Australian Accounting Standard - Inventories Held for Distribution by Not-for-Profit Entities [AASB 102]*

AASB 2007-7 *Amendments to Australian Accounting Standards*

UIG Interpretation 10 – *Interim Financial Reporting and Impairment*

UIG interpretation 11 AASB2 – *Group and Treasury Share Transactions and 2007-1 Amendments to Australian Accounting Standards arising from AASB Interpretation 11*

AASB interpretation 1003 *Australian Petroleum Resource Rent Tax*

Note 1: Summary of significant accounting policies (continued)

Future Australian Accounting Standard requirements

The following new standards, amendments to standards or interpretations have been issued by the Australian Accounting Standards Board, but are effective for future reporting periods. It is estimated that the impact of adopting these pronouncements when effective will have no material financial impact on future reporting periods.

AASB 3 *Business Combinations*

AASB 8 *Operating Segments and* 2007-3 *Amendments to Australian Accounting Standards arising from AASB 8*

AASB 101 *Presentation of Financial Statements (issued September 2007)*

AASB 123 *Borrowing Costs*

AASB 127 *Consolidated and Separate Financial Statements*

AASB 1004 *Contributions*

AASB 1050 *Administered Items*

AASB 1051 *Land Under Roads*

AASB 1052 *Disaggregated Disclosures*

AASB 2007-2 *Amendments to Australian Accounting Standards arising from AASB Interpretation 12 [AASB 1, AASB 117, AASB 118, AASB 120, AASB 121, AASB 127, AASB 131 & AASB 139]*

AASB 2007-6 *Amendments to Australian Accounting Standards arising from AASB 123*

AASB 2007-8 *Amendments to Australian Accounting Standards arising from AASB 101*

AASB 2007-9 *Amendments to Australian Accounting Standards arising from the Review of AASs 27, 29 and 31 [AASB 3, AASB 5, AASB 8, AASB 101, AASB 114, AASB 116, AASB 127 & AASB 137]*

AASB 2008-1 *Amendments to Australian Accounting Standard – Share-based Payments: Vesting Conditions and Conditions and Cancellations*

AASB 2008-2 *Amendments to Australian Accounting Standards – Puttable Financial Instruments and Obligations arising on Liquidation [AASB 7, AASB 101, AASB 132, AASB 139 & Interpretation 2]*

AASB 2008-3 *Amendments to Australian Accounting Standards arising from AASB 3 and AASB 127 [AASBs 1, 2, 4, 5, 7, 101, 107, 112, 114, 116, 121, 128, 131, 132, 133, 134, 136, 137, 138 & 139 and Interpretations 9 & 107]*

AASB 2008-4 *Amendments to Australian Accounting Standard – Key Management Personnel Disclosures by Disclosing Entities [AASB 124]*

AASB Interpretation 1 *Changes in Existing Decommissioning, Restoration and Similar Liabilities*

AASB Interpretation 4 *Determining Whether an Arrangement Contains a Lease*

AASB Interpretation 13 *Customer Loyalty Programmes*

AASB Interpretation 12 *Service Concession Arrangements and 2007-2 Amendments to Australian Accounting Standards arising from AASB Interpretation 12*

AASB Interpretation 14 AASB 119 – *The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction*

AASB Interpretation 129 *Service Concession Arrangements Disclosures*

AASB Interpretation 1038 *Contributions by Owners Made To Wholly Owned Public Sector Entities*

Note 1: Summary of significant accounting policies (continued)

Other

The following standards and interpretations have been issued but are not applicable to the operations of FRDC.

AASB 1049 Whole of Government and General Government Sector Financial Reporting

AASB 1049 specifies the reporting requirements for the General Government Sector. The Finance Ministers Orders (FMOs) do not refer to this standard as it contains guidance applicable to the consolidated financial statements of the Australian Government, rather than financial reports of individual Agencies or Authorities.

1.5 Revenue

Revenue from the sale of goods is recognised when:

- the risks and rewards of ownership have been transferred to the buyer;
- the seller retains no 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 consolidated entity.

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 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 of costs incurred to date as compared 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 provision for bad and doubtful debts. Collectability of debts is reviewed at balance date. Provisions are made when collectability of the debt is no longer probable.

Interest revenue is recognised using the effective interest method as set out in AASB 139 *Financial Instruments: Recognition and Measurement*.

Refunds from research organisations are taken to account when received.

Revenues from Government

The full amount of the allocated revenue from government for agency outputs for the year is recognised as revenue, except for certain amounts that relate to activities that are reciprocal in nature, in which case revenue is recognised only when it has been earned.

1.6 Gains

Sale of Assets

Gains from disposal of non-current assets are recognised when control of the asset has passed to the buyer.

Note 1: Summary of significant accounting policies (continued)

1.7 Employee benefits

Liabilities for services rendered by employees are recognised at the reporting date to the extent that they have not been settled.

Liabilities for 'short-term employee benefits' (as defined in AASB 119) and termination benefits due within twelve months of balance date are measured at their nominal amounts.

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

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

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.

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

The liability for long service leave has been determined by reference to the shorthand method set out in the FMOs. 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 2008 — see Note 11 Provisions. Directors remuneration is at Note 13 and Executive remuneration is at Note 15.

Separation and Redundancy

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

Superannuation

Staff 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 scheme 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.

From 1 July 2005, new employees are eligible to join the PSSap scheme.

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 non-current 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 a non-current 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 consolidated entity is not currently involved in any finance leases.

1.9 Projects

The FRDC recognises project liabilities as 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.

1.10 Borrowing costs

The consolidated entity incurred no borrowing cost during the year.

1.11 Cash

Cash and cash equivalents includes notes and coins held and any deposits in bank accounts with an original maturity of 3 months or less 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.

Note 1: Summary of significant accounting policies (continued)

1.12 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 and cash flow and fair value interest rate risk is considered to be low.

1.13 Financial assets

The FRDC classifies its financial assets in the following categories:

Available-for-sale financial assets

Available-for-sale financial assets are non-derivatives that are either designated in this category or not classified in any of the other categories. They are included in non-current assets unless management intends to dispose of the asset within 12 months of the balance sheet date.

Available-for-sale financial assets are recorded at cost as they relate to shares held in an unlisted company and a fair value cannot be reliably measured.

Loans and receivables

Trade and other receivables are included in current assets, in the balance sheet. Interest is recognised by applying the effective interest rate.

Impairment of financial assets

Financial assets are assessed for impairment at each balance date.

- *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 assets carrying amount and the present value of estimated future cash flows discounted at the assets original effective interest rate. The carrying amount is reduced by way of an allowance account. The loss is recognised in the Income Statement.
- *Available for Sale Financial Assets* — If there is objective evidence that an impairment loss on an available for sale financial asset has been incurred, the amount of the difference between its cost, less principal repayments and amortisation, and its current fair value, less any impairment loss previously recognised in expenses, is transferred from equity to the Income Statement.
- *Available for sale financial Assets (held at Cost)* — If there is objective evidence that an impairment loss has been incurred on an unquoted equity instrument that is not carried at fair value because it cannot be reliably measured, or a derivative asset that is linked to and must be settled by delivery of such an unquoted equity instrument, 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.

Note 1: Summary of significant accounting policies (continued)

1.14 Financial Liabilities

Financial liabilities are classified as financial liabilities 'at fair value through profit or loss'.

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.

1.15 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 existing liability or asset in respect of which settlement is not probable or the amount cannot be reliably measured. Contingent assets are reported when settlement is probable, and contingent liabilities are recognised when settlement is greater than remote.

1.16 Acquisition of assets

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

Assets acquired at no cost, or for nominal consideration, are initially recognised as assets and revenues 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 entity's accounts immediately prior to the restructuring.

1.17 Infrastructure, plant and equipment

Asset Recognition Threshold

Purchases of infrastructure, plant and equipment are recognised initially at cost of acquisition 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

All infrastructure, plant and equipment assets were revalued as at 30 June 2008 by the Australian Valuation Office and are recorded in the financial statements at valuation.

Note 1: Summary of significant accounting policies (continued)

Revaluations are done on a fair value basis. Fair value is determined to be depreciated replacement cost.

Following initial recognition at cost, infrastructure, plant and equipment are carried at fair value less 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.

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 through surplus and deficit. Revaluation decrements for a class of assets are recognised directly through surplus and 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 and amortisation

Depreciable infrastructure, plant and equipment assets are written-off to their estimated residual value over their estimated useful lives to 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 period, or current and future periods, as appropriate.

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

	2008	2007
Infrastructure, plant and equipment	**3–5 years**	3–5 years
Computer software developed "internally"	**10 years**	10 years
Leasehold improvements	**Term of lease**	Term of lease

The aggregate amount of depreciation allocated for each class of asset during the reporting period is disclosed at Note 9C.

Impairment

All assets were assessed for impairment at 30 June 2008. 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 held at fair value.

Note 1: Summary of significant accounting policies (continued)

1.18 Intangibles

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

Software is amortised on a straight line basis over its anticipated useful life. The useful lives of FRDC's software is 10 years. This is unchanged since 30 June 2002.

All software assets were assessed for indications of impairment as at 30 June 2008. None were found to be impaired.

1.19 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
- except for receivables and payables.

1.20 Comparative figures

Comparative figures have been adjusted to conform to changes in presentation in these financial statements where required.

1.21 Adjustment arising from the application of AASB 1004 — *Contributions*

In accordance with AASB 1004 – *Contributions*, project income received from other parties for projects managed by FRDC has been immediately recognised as revenue in the Income Statement in 2007–08. Accordingly, the opening balance of Total Equity as at 1 July 2006 has been adjusted by $447,430 in the Statement of Changes in Equity, and the comparative balances for Contributions in the Income Statement have been restated from $9,230,793 to $9,088,889 and Other payables in the Balance Sheet has been restated from $305,526 to zero.

Note 2: Reporting of outcomes

Note 2A: Outcomes of the FRDC

The FRDC operates primarily in a single industry and geographic segment, namely the Australian fishing industry. It is a federal statutory authority jointly funded by the Australian Government and the fishing industry. It is responsible to its stakeholders to:

- plan, invest in and manage fisheries R&D throughout Australia; and
- facilitate the dissemination, adoption and commercialisation of R&D results.

The FRDC is structured to meet the following outcome:

The natural resources on which the fishing industry (commercial, indigenous and recreational sectors) depends are used sustainably and for the benefit of all stakeholders.

The output identified for this outcome is as follows:

Knowledge, processes and technology that contribute to the sustainable use of the natural resources on which the fishing industry (commercial, indigenous and recreational sectors) depends, for the benefit of all stakeholders.

The reported outcomes of FRDC do not include the activities of SSA.

Note 2B: Net Cost of Outcome Delivery

	Outcome	
	2007–08	2006–07
	$	$
Expenses	**21,080,281**	24,311,185
Total Expenses	**21,080,281**	24,311,185
Other external revenues		
Contributions	**9,577,232**	9,088,889
Sale of goods and services	**336,436**	213,212
Reversals of previous asset write-downs	**0**	0
Interest	**221,186**	268,886
Other Revenue	**7,668**	3,796
Total Revenue	**10,142,522**	9,574,783
Total other external revenues	**10,142,522**	9,574,783
Net cost/(contribution) of outcome	**10,937,759**	14,736,402

Note 2C: Revenues and Expenses by Output

	Output	
	2007–08	2006–07
	$	$
Expenses		
Employees	**1,529,270**	1,421,068
Suppliers	**1,003,751**	943,511
Depreciation and amortisation	**464,902**	351,255
Projects expenditure	**17,346,453**	20,766,936
Loss from disposal of assets	**700**	0
Other	**735,205**	828,415
Total expenses	**21,080,281**	24,311,185
Funded by:		
Revenues from Government	**16,284,991**	15,984,661
Contributions	**9,577,232**	9,088,889
Sale of goods and services	**336,436**	213,212
Reversals of previous asset write-downs	**0**	0
Interest	**221,186**	268,886
Other Revenue	**7,668**	3,796
Total revenues	**26,427,513**	25,559,444

Note 3: Economic dependency

The FRDC was established on 2 July 1991 under the PIERD Act. The Corporation is responsible to the Minister for Agriculture, Fisheries and Forestry and is dependent on appropriations from the Parliament of the Australia for its continued existence and ability to carry out its normal activities.

Note 4: Events after the balance sheet date

There are no events occurring after reporting date to report.

Note 5: Income

Revenue

Note 5A: Revenue from Government

	Consolidated		FRDC	
	2008	2007	**2008**	2007
	$	$	**$**	$
Revenues from Government				
– 0.5% of AGVP *	**10,900,915**	10,689,850	**10,900,915**	10,689,850
– matching of industry contributions	**5,384,076**	5,294,811	**5,384,076**	5,294,811
Total revenue from Government	**16,284,991**	15,984,661	**16,284,991**	15,984,661

* AGVP is the average gross value of fisheries production for two preceding financial years and the current 2007–08 financial year — See also note: 20.

The Australian Government's contribution of 0.5% of AGVP is made on the grounds that it exercises a stewardship role in relation to fisheries resources on behalf of the Australian community.

The matching of the industry contribution (up to 0.25% of AGVP) by the Australian Government is in line with policy principles that:

- beneficiaries from research should pay roughly in proportion to the benefits received; and
- the greater the public spill-over benefits, the greater the proportion the Australian Government should contribute.†

† As described on page 18 of the FRDC's R&D Plan 2005–10, which is available at the corporation's website.

Note 5B: Contributions Revenue

Fisheries managed by:				
Australian Fisheries Management Authority	**1,415,712**	948,322	**1,415,712**	948,322
Australian Capital Territory	**242,601**	20,000	**242,601**	20,000
New South Wales	**425,766**	403,959	**425,766**	403,959
Northern Territory	**627,688**	285,920	**627,688**	285,920
Queensland	**629,569**	687,351	**629,569**	687,351
South Australia	**1,528,093**	1,744,695	**1,528,093**	1,744,695
Tasmania	1,212,836	909,424	**1,212,836**	909,424
Victoria	**262,111**	333,759	**262,111**	333,759
Western Australia	**1,124,998**	1,561,955	**1,124,998**	1,561,955
Sub-total	**7,469,374**	6,895,385	**7,469,374**	6,895,385
Projects				
Project funds received from other parties	**1,871,956**	2,717,928	**2,007,731**	2,100,226
Project refunds of prior years' expenditure	**100,127**	93,278	**100,127**	93,278
Sub-total	**1,972,083**	2,811,206	**2,107,858**	2,193,504
Total contributions revenue	**9,441,457**	9,706,591	**9,577,232**	9,088,889

Industry's contribution to the FRDC recognises the need for R&D that will be commercially oriented and that will deliver results that will improve industry performance and profitability.

Note 5C: Sale of goods and rendering of services

	Consolidated		FRDC	
	2008	2007	**2008**	2007
	$	$	**$**	$
Sales of goods and rendering of services to external entities	**436,166**	498,954	**336,436**	213,212
Total sale of goods and rendering of services	**436,166**	498,954	**336,436**	213,212
Cost of Sales SSA				
Cost of Goods Sold (Publications, CD Roms)	**64,652**	157,526	**0**	0
Total cost of goods sold	**64,652**	157,526	**0**	0

No meaningful cost of sales figure can be determined for FRDC, due to the nature of these sales.

Note 5D: Interest

Deposits	**227,525**	279,249	**221,186**	268,886
Total interest	**227,525**	279,249	**221,186**	268,886

Note 5E: Other revenue

Miscellaneous	**64,168**	53,462	**7,668**	3,796
Total other revenue	**64,168**	53,462	**7,668**	3,796

Note 6: Expenses

Note 6A: Employee benefits

Wages and salaries	**1,347,546**	1,470,540	**1,173,204**	1,040,892
Leave and other entitlements	**27,704**	8,299	**21,188**	13,863
Superannuation	**363,360**	371,003	**334,878**	272,601
Other employee benefits-recruitment costs	**0**	93,712	**0**	93,712
Total employee benefits	**1,738,610**	1,943,554	**1,529,270**	1,421,068

Note 6B: Suppliers

External service providers	**447,902**	407,785	**392,198**	286,465
Asset purchases less than $5,000	**18,064**	55,875	**18,064**	55,875
Insurance	**21,912**	46,219	**17,456**	23,698
Office supplies	**81,994**	77,631	**69,292**	31,325
Property	**143,715**	145,146	**135,593**	119,795
Representation	**15,285**	33,602	**15,285**	33,602
Telecommunications	**66,179**	69,486	**60,037**	42,908
Training	**43,516**	58,405	**21,829**	53,502
Travel	**216,998**	307,307	**185,864**	228,486
Other	**90,988**	95,194	**88,133**	67,855
Total supplier expenses	**1,146,553**	1,296,650	**1,003,751**	943,511

All supplier goods and services were supplied by external entities.

Note 6C: Depreciation and amortisation

	Consolidated		FRDC	
	2008	2007	**2008**	2007
	$	$	**$**	$
Depreciation:				
Infrastructure, plant and equipment	**128,729**	127,083	**126,428**	108,949
Total depreciation	**128,729**	127,083	**126,428**	108,949
Intangibles:				
Computer software	**338,474**	242,306	**338,474**	242,306
Total amortisation	**338,474**	242,306	**338,474**	242,306
Total depreciation and amortisation	**467,203**	369,389	**464,902**	351,255

Note 6D: Projects expenditure

Projects				
Natural Resources Sustainability	**8,698,575**	11,108,094	**8,698,575**	11,108,094
Industry Development	**7,574,637**	7,997,730	**7,550,913**	8,559,797
People Development	**1,096,965**	1,099,045	**1,096,965**	1,099,045
Total project expenditure	**17,370,177**	20,204,869	**17,346,453**	20,766,936

The FRDC is involved in Aquatic animal health activities funded by the Australian Government initiative 'Building a national approach to animal and plant health'. The related projects are included within the 3 above programs. The Aquatic animal health project expenditure in 2007–08 was $49,711 (2006–07 $112,583)

Note 6E: Write-down and impairment of assets

Asset Write-Downs from				
Impairment of infrastructure, plant and equipment	**0**	1,105	**0**	0
Total write-down and impairment of assets	**0**	1,105	**0**	0

Note 6F: Losses from disposal of assets

Infrastructure, plant and equipment				
Proceeds from sale	**0**	0	**0**	0
Carrying amount of assets disposed of	**700**	0	**700**	0
Total losses from assets disposals	**700**	0	**700**	0

Note 7: Operating Expenses — Other

	Consolidated		FRDC	
	2008	2007	**2008**	2007
	$	$	**$**	$
Communications				
Annual Report	**40,911**	33,976	**40,911**	33,976
ANRO	**4,377**	22,993	**4,377**	22,993
Fisheries Research Advisory Bodies	**278,501**	218,268	**278,501**	218,268
FRDC initiated project extension	**0**	13,365	**0**	13,365
Joint RDC activities	**25,721**	44,272	**25,721**	44,272
Media activities	**17,512**	30,548	**17,512**	30,548
Other stakeholder consultation	**22,369**	116,980	**5,072**	105,050
R&D News	**301,730**	207,118	**301,730**	207,118
R&D Plan	**234**	13,045	**234**	13,045
Representative organisations consultation (1)	**1,888**	6,447	**1,888**	6,447
Website	**14,702**	35,688	**14,702**	35,688
Sponsorship	**18,309**	60,982	**18,309**	60,982
Other	**55,508**	143,875	**26,248**	36,663
Total other expenses	**781,762**	947,557	**735,205**	828,415

(1) Representative organisations consultation relates to expenses incurred by the FRDC in accordance with section 15 of the PIERD Act.

Note 8: Financial Assets

Note 8A: Cash and cash equivalents

Cash at bank	**0**	916,118	**1,033,322**	352,862
Cash on hand	**0**	500	**300**	300
Deposits on call	**0**	0	**3,700,000**	0
Total cash and cash equivalents	**0**	916,618	**4,733,622**	353,162

Note 8B: Trade and other Receivables

	Consolidated		FRDC	
	2008	2007	**2008**	2007
	$	$	**$**	$
GST receivable from the Australian Taxation Office	**0**	282,552	**72,712**	282,552
Other receivables	**0**	2,201,464	**1,898,764**	2,172,634
Total receivables (net)	**0**	2,484,016	**1,971,476**	2,455,186

All receivables are current assets.

Receivables are aged as follows:				
Not overdue	**0**	2,434,435	**1,917,561**	2,455,186
Overdue by:				
Less than 30 days	**0**	44,000	**53,915**	0
30 to 60 days	**0**	0	**0**	0
60 to 90 days	**0**	0	**0**	0
More than 90 days	**0**	5,581	**0**	0
Total receivables (gross)	**0**	2,484,016	**1,971,476**	2,455,186

All receivables are with entities external to FRDC.

Included in other receivables are amounts paid to underwrite the following:

- The National Aquaculture Council (NAC) for the Australasia Aquaculture Conferences in 2008. The outstanding balance at 30 June 2008 was $80,000.
- The NAC for the European Seafood Exposition (ESE) 2008. The outstanding balance at 30 June 2008 was $144,500.
- The Western Australian Fishing Industry Council for ESE 2007 and 2008. The outstanding balance at 30 June 2008 was $570,000 ($270,000 in 2006–07).

The FRDC expects that these amounts are recoverable in due course from the respective councils. The FRDC does not consider the ESE debts to be overdue because ESE acquittals depend on VAT refunds and the outcome of the relevant Export Market Development Grant round. These processes can take up to 18 months from the date of the event to be resolved.

Note 8C: Investments

Shares in other company — unlisted	**0**	5,001	**5,001**	5,001
Total investments	**0**	5,001	**5,001**	5,001

Shares in unlisted company

Australian Seafood Co-Products Pty Ltd (ASCo) is an unlisted company in which 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 agriculture 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 9: Non-Financial Assets

Note 9A: Infrastructure, plant and equipment

	Consolidated		FRDC	
	2008	2007	**2008**	2007
	$	$	**$**	$
Infrastructure, plant and equipment				
– at fair value	**0**	672,586	**576,845**	603,810
– accumulated depreciation	**0**	(312,839)	**(233,610)**	(258,930)
Total infrastructure, plant and equipment (non-current)	**0**	359,747	**343,235**	344,880

All revaluations are conducted in accordance with the revaluation policy stated at Note 1. On 30 June 2008, an independent valuer Australian Valuation Office conducted the revaluations.

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

Note 9B: Intangibles

Computer software at cost:				
Internally developed — in use	**0**	2,900,148	**3,698,219**	2,900,148
Total Computer Software	**0**	2,900,148	**3,698,219**	2,900,148
Accumulated amortisation	**0**	(667,901)	**(1,006,375)**	(667,901)
Total intangibles (non-current)	**0**	2,232,247	**2,691,844**	2,232,247

No indicators of impairment were found for intangible assets.

Note 9C: Analysis of infrastructure, plant and equipment and intangibles FRDC

TABLE A — Reconciliation of the opening and closing balances of infrastructure, plant and equipment and intangibles (2007–08)

	Infrastructure, plant and equipment $	Intangibles $
As at 1 July 2007	603,810	2,900,148
Accumulated depreciation/amortisation and impairment	(258,930)	(667,901)
Net Book Value 1 July 2007	344,880	2,232,247
Additions:		
by Purchase	116,931	798,071
Revaluations through equity	8,552	0
Depreciation/amortisation expense	(126,428)	(338,474)
Disposals	(700)	0
Net Book Value 30 June 2008	343,235	2,691,844
Net book value as of 30 June 2008 represented by:		
Gross book value	576,845	3,698,219
Accumulated depreciation/amortisation	(233,610)	(1,006,375)
	343,235	2,691,844

TABLE A — Reconciliation of the opening and closing balances of infrastructure, plant and equipment and intangibles (2006–07) (parent only)

	Infrastructure, plant and equipment $	Intangibles $
As at 1 July 2006	438,271	2,169,445
Accumulated depreciation /amortisation and impairment	(258,566)	(425,597)
Net Book Value 1 July 2006	179,705	1,743,848
Additions:		
by Purchase	270,474	730,705
Revaluations through equity	3,650	0
Depreciation/amortisation expense	(108,949)	(242,306)
Disposals	0	0
Net Book Value 30 June 2007	344,880	2,232,247
Net book value as of 30 June 2007 represented by:		
Gross book value	603,810	2,900,148
Accumulated depreciation/amortisation	(258,930)	(667,901)
	344,880	2,232,247

In accordance with the FRDC's accounting policy (refer Note 1.17), items under the infrastructure, plant and equipment heading were revalued at their fair value, effective 30 June 2008, by the Australian Valuation Office.

Note 9D: Other Non-Financial Assets

	Consolidated		FRDC	
	2008	2007	**2008**	2007
	$	$	**$**	$
Inventories	**0**	32,345	**0**	0
Prepayments	**0**	11,103	**0**	0
Total other non-financial assets	**0**	43,448	**0**	0

All 'Other non-financial assets' are current assets.

Note 10: Payables

Note 10A: Suppliers

Trade creditors	**0**	451,178	**108,169**	253,449
FBT Payable	**0**	1,327	**(3,273)**	1,327
PAYG payable	**0**	29,554	**30,581**	29,554
Total supplier payables	**0**	482,059	**135,477**	284,330

All supplier payables are current liabilities.

Settlement is usually made net 30 days.

Note 10B: Project Payables

Project creditors	**0**	1,157,636	**304,419**	1,157,636
Total project creditors	**0**	1,157,636	**304,419**	1,157,636

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 were unpaid at the end of the period. Settlement is usually made within 60 days.

Note 10C: Other Payables

Unearned revenue	**0**	38,589	**0**	0
Total unearned revenue	**0**	38,589	**0**	0

All unearned revenue is recognised as a current liability.

Note 11: Provisions

Note 11A: Employee Provisions

	Consolidated		FRDC	
	2008	2007	**2008**	2007
	$	$	**$**	$
Leave	**0**	443,984	**384,697**	383,709
Total employee provisions	**0**	443,984	**384,697**	383,709
Employee provisions are represented by:				
Current	**0**	375,146	**345,727**	339,976
Non-current	**0**	68,838	**38,970**	43,733
Total employee provisions	**0**	443,984	**384,697**	383,709

Note 12: Cash flow reconciliation

Reconciliation of cash and cash equivalents as per Balance Sheet to Cash Flow Statement

Report cash and cash equivalents as per:					
Cash Flow Statement		**4,733,622**	916,618	**4,733,622**	353,162
Balance Sheet		**0**	916,618	**4,733,622**	353,162
Difference	†	**4,733,622**	0	**0**	0

† The financial operations of SSA were deconsolidated from the parent entity with effect from 1 November 2007 refer Note 1.2

Reconciliation of operating result to net cash from operating activities:

Operating result	**4,993,924**	1,602,267	**5,347,232**	1,248,259
Depreciation and amortisation	**467,203**	369,389	**464,902**	351,255
Net write down of non-current assets	**0**	1,105	**0**	0
(Gain)/loss on disposal of assets	**700**	0	**700**	0
Expense recognised on acquisition	**0**	56,144	**0**	0
Loss on deconsolidation	**95,424**	0	**0**	0
(Increase)/decrease in inventories	**5,462**	0	**0**	0
(Increase)/decrease in net receivables	**475,438**	(518,712)	**483,710**	(526,184)
Increase/(decrease) in supplier payables	**(311,473)**	303,330	**(148,853)**	150,334
Increase/(decrease) in other payables	**45,218**	38,589	**0**	0
Increase/(decrease) in employee provisions	**7,505**	(9,859)	**988**	24,036
Increase/(decrease) in project payables	**(888,607)**	(266,514)	**(853,217)**	(59,781)
Net cash from/(used by) operating activities	**4,890,794**	1,575,739	**5,295,462**	1,187,919

Note 13: Directors Remuneration FRDC and controlled entity

	Consolidated		FRDC	
	2008	2007	**2008**	2007
The number of directors of the FRDC included in these figures are shown below in the expected annual remuneration bands:				
$ Nil – $ 14,999	**12**	13	**1**	6
$ 15,000 – $ 29,999	**6**	7	**6**	6
$ 30,000 – $ 44,999	**1**	0	**1**	0
$ 45,000 – $ 59,999	**1**	1	**0**	1
$ 160,000 – $ 174,999	**0**	1	**0**	0
$ 225,000 – $ 239,999	**0**	1	**0**	0
$ 240,000 – $ 244,999	**0**	0	**0**	1
$ 265,000 – $ 279,999	**1**	0	**1**	0
Total number of directors of the FRDC	**21**	23	**9**	14

Included in FRDC figures in 2007, are directors from the current board and previous board.

Total remuneration received, or due and receivable, by directors of FRDC and the controlled entity.	**$554,437**	$638,612	**$485,382**	$424,254

Note 14: Related Party Disclosures

The directors of the FRDC during the year were:

Dr P. Hone	Executive Director (Chair Business Development Committee)
Dr R. Johnson	Director (Member Business Development Committee which was disbanded 20 February 2008.)
Dr P. McShane	Director (Member Business Development Committee which was disbanded 20 February 2008.)
Mr P. Neville	Chair (Chair Remuneration Committee) (Commenced 1/09/07)
Mr F. Prokop	Director (Member Business Development Committee which was disbanded 20 February 2008.)
Mr S. Richey AM	Director – (Deputy Chair, Chair of Finance Audit, Risk and Management Committee) (Member of Remuneration Committee)
Mr R.A. Stevens AM	Director (Member of Remuneration Committee) (Member of Finance, Audit and Risk Management Committee)
Mr R.N. Stevens	Director (Member Business Development Committee which was disbanded 20 February 2008.)
Mr D. Byrne	Chair (Chair Remuneration Committee) (Retired 31/08/07)

The aggregate amount of remuneration of directors is disclosed in Note 13.

Note 14: Related party disclosures (cont'd)

Transactions with director-related parties

Director	Organisation & position held	Nature of interest	Income received from Entity $	Expenditure paid to Entity $
Dr P Hone	CRC for Sustainable Aquaculture of Finfish *Director*	Research projects or work undertaken by the organisation	1,758,605	0
	Seafood CRC Company Ltd *Director*	Research projects or work undertaken by the organisation	511,201	604,206
Dr P McShane	Australian Maritime College *Honorary Research Associate*	Research projects or work undertaken by the organisation	0	44,495
	Southern Rock Lobster Limited *Consultant*	Research projects or work undertaken by the organisation	0	1,620
Mr P Neville	Southern Bluefin Tuna Management Advisory Committee (AFMA) *Chair*	Research projects or work undertaken by the organisation	899,883	300,938
	P.J. Neville and Associates *Principal*	Research projects or work undertaken by the organisation	4,255	37,482
Mr F Prokop	Recfishwest *Executive Director*	Research projects or work undertaken by the organisation	825	1,243
	Recfish Australia *Executive Director of a member organisation*	Research projects or work undertaken by the organisation	0	144,307
Mr S Richey AM	Australian Fisheries Management Authority *Chairman of Northern Prawn Management Advisory Committee*	Research projects or work undertaken by the organisation	899,883	335,938
	McLaughlin Consolidated Fishermen Ltd (Consolfish) *Director (Retired 23 Aug 2007)*	Research projects or work undertaken by the organisation	0	13,090
	Tasmanian Aquaculture and Fisheries Institute (TAFI) University of TAS *Spouse of Director*	Research projects or work undertaken by the organisation	0	2,030,859

Note 14: Related party disclosures (cont'd)

Transactions with director-related parties

Director	Organisation & position held	Nature of interest	Income received from Entity $	Expenditure paid to Entity $
Mr R A Stevens AM	Australian Fisheries Management Authority *Director*	Research projects or work undertaken by the organisation	678,391	335,938
	Department of Primary Industry, Fisheries and Mines (NT) *Chair of Mud Crab Fishery MAC* and *Spanish Mackerel Fishery MAC*	Research projects or work undertaken by the organisation	274,010	44,337
	Department of Primary Industries (QLD) *Chair of the Reef Fishery MAC* and *Harvest Fishery MAC*	Research projects or work undertaken by the organisation	0	243,640
Mr R N Stevens	Seafood CRC *Member of Research & Adoption Committee*	Research projects or work undertaken by the organisation	511,201	604,206
	Seafood Services Australia Ltd *Director (Retired 14 Aug 2007)*	Research projects or work undertaken by the organisation	0	33,550
	Western Australian Fishing Industry Council *R&D Manager*	Research projects or work undertaken by the organisation	0	496,048

Transactions with SSA director-related parties

Director	Organisation & position held	Nature of interest	Income $	Expenditure $
Roy Palmer	Tigrey Pty Ltd *Director*	Conference Management Services	0	1,527
	Tigrey Pty Ltd *Director*	Commission for Sale of SSA publications	0	12

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

Note 15: Executive Remuneration FRDC

	FRDC	
	2008	2007
The number of senior executives who received or were due to receive total remuneration of $130,000 or more:		
$130,000 to $144,999	**1**	1
$145,000 to $159,999	**1**	0
$190,000 to $204,999	**0**	1
$220,000 to $234,999	**1**	0
Total	**3**	2
The aggregate amount of total remuneration of executives shown above.	**$532,232**	$340,467
The aggregate amount of separation and redundancy/termination benefit payments during the year to executive shown above.	**Nil**	Nil

No senior executives of the controlled entity received or were due to receive a total remuneration of $130,000 or more.

Note 16: Remuneration of Auditors

	Consolidated		FRDC	
	2008	2007	**2008**	2007
	$	$	**$**	$
Financial statement audit services are provided by the Auditor-General.				
Auditing the financial statements	**55,000**	45,900	**48,500**	33,500
Other audit services provided by a previous auditor in the subsidiary	**0**	5,155	**0**	0
Amounts received or due and receivable by the external auditors	**55,000**	51,055	**48,500**	33,500

RSM Bird Cameron in FRDC, and Hopely Bone Accountants Pty Ltd in SSA, were contracted by the Australian National Audit Office to provide audit services on the ANAO's behalf. Fees for these services are included above.

Note 17: Average Staffing Levels

	2008	2007	2008	2007
The average staffing levels for the FRDC and SSA during the year were:	17.5	18.0	11.5	10.0

Note 18: Financial Instruments

Note 18A: Categories of financial instruments

	2008	2007
	$	$
Financial Assets		
Cash and cash equivalents		
Cash at bank	1,033,322	352,862
Cash on hand	300	300
Deposits on call	3,700,000	0
Shares	5,001	5,001
Receivables		
Other receivables	1,898,764	2,172,634
Carrying amount financial assets	6,637,387	2,530,797
Financial Liabilities		
Other Financial Liabilities		
Trade creditors	108,169	253,449
Projects	304,419	1,157,636
Other payables	0	0
Carrying amount financial liabilities	412,588	1,411,085

Note 18B: Net income and expenses from financial assets

Loans and receivables		
Interest revenue	221,186	268,886
Net gain/(loss) loans and receivables	221,186	268,886
Net gain/(loss) from financial assets	221,186	268,886

Note 18C: Fair value of financial instruments

Financial assets	Carrying amount 2008	Fair value 2008	Carrying amount 2007	Fair value 2007
Cash and cash equivalents				
Cash at bank	**1,033,322**	**1,033,322**	352,862	352,862
Cash on hand	**300**	**300**	300	300
Deposits on call	**3,700,000**	**3,700,000**	0	0
Shares	**5,001**	**0**	5,001	0 †
Receivables				
Other receivables	**1,898,764**	**1,898,764**	2,172,634	2,172,634
Total	**6,637,387**	**6,632,386**	2,530,797	2,525,796
Financial liabilities				
Other financial liabilities				
Trade creditors	**108,169**	**108,169**	253,449	253,449
Project creditors	**304,419**	**304,419**	1,157,636	1,157,636
Total	**412,588**	**412,588**	1,411,085	1,411,085

† The value of shares 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 18D: Credit Risk

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

The FRDC holds no collateral to mitigate against credit risk.

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

	Not Past Due Nor impaired 2008 $	Not Past Due Nor impaired 2007 $	Past due or impaired 2008 $	Past due or impaired 2007 $
Cash and cash equivalents	**4,733,622**	353,162	**0**	0
Shares	**5,001**	5,001	**0**	0
Other receivables	**1,898,764**	2,172,634	**53,915**	44,000
Total	**6,637,387**	2,530,797	**53,915**	44,000

Ageing of financial assets that are past due but not impaired for 2008

	0 to 30 Days $	31 to 60 Days $	61 to 90 Days $	90+ Days $	Total $
Other receivables	**53,915**	**0**	**0**	**0**	**53,915**
Total	**53,915**	**0**	**0**	**0**	**53,915**

Ageing of financial assets that are past due but not impaired for 2007

	0 to 30 Days $	31 to 60 Days $	61 to 90 Days $	90+ Days $	Total $
Other receivables	44,000	0	0	0	44,000
Total	44,000	0	0	0	44,000

Note 18E: Liquidity Risk

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

The following table illustrates the maturities for financial liabilities in 2008

	On demand 2008 $	within 1 year 2008 $	1 to 5 years 2008 $	> 5 years 2008 $	Total 2008 $
Other financial liabilities					
Suppliers	0	108,169	0	0	108,169
Projects	0	304,419	0	0	304,419
Total	**0**	**412,588**	**0**	**0**	**412,588**

The following table illustrates the maturities for financial liabilities in 2007

	On demand 2007 $	within 1 year 2007 $	1 to 5 years 2007 $	> 5 years 2007 $	Total 2007 $
Other financial liabilities					
Suppliers	0	253,449	0	0	253,449
Projects	0	1,157,636	0	0	1,157,636
Total	**0**	**1,411,085**	**0**	**0**	**1,411,085**

Note 19: Other related parties

On 23 June 2006, FRDC entered into an agreement with the Australian Fisheries Management Authority (AFMA) As part of this agreement, FRDC acts as AFMA's agent to make payments to research providers. FRDC invoices AFMA monthly for payments made to research providers against research projects administered on behalf of AFMA. These activities have not been reflected in FRDC's accounts but are disclosed below for information purposes.

Totals payments to research providers from 1 July 2007 to 30 June 2008	$2,961,093

On 1 July 2007, the FRDC became a participant in the Seafood CRC Company Limited (SCRC). The FRDC provides services to the SCRC under a service agreement for $350,000 per annum. A number of FRDC projects were novated to the SCRC during 2007–08. Where the FRDC co-invests in SCRC projects, it makes payments on the basis of achieved project milestones. These payments generally have both an FRDC and notional industry participant component.

Note 20: Contingent liabilities and assets

Commencing in 2007–08 the Department of Agriculture, Fisheries and Forestry implemented a new formula for the calculation of the average gross value of fisheries production (AGVP) to determine the Australian Government's contributions to the FRDC under the PIERD Act (refer Note 5A). In the past the AGVP had been based on the three preceding financial years, and from 2007–08 forwards the current and two preceding financial years has and will be used.

As a result of not implementing this change in 2001–02 DAFF estimates that it has overpaid the FRDC $1,374,617. DAFF has advised that it will be seeking the Department of Finance and Deregulation's approval to waive this debt. DAFF also advises that it will be recognising in its 2007–08 accounts both a receivable to recognise the overpayment to FRDC and an impairment to recognise that recovery is subject to the waiver application. Therefore the FRDC is recognising this debt as a contingent liability as it is not probable that FRDC will be required to settle this obligation.

At 30 June 2008, the FRDC had no contingent assets.

Appendices

Appendix A: The FRDC's principal revenue base

As stipulated in the PIERD Act, and as shown in figure 5, the FRDC's primary revenue source is based on:

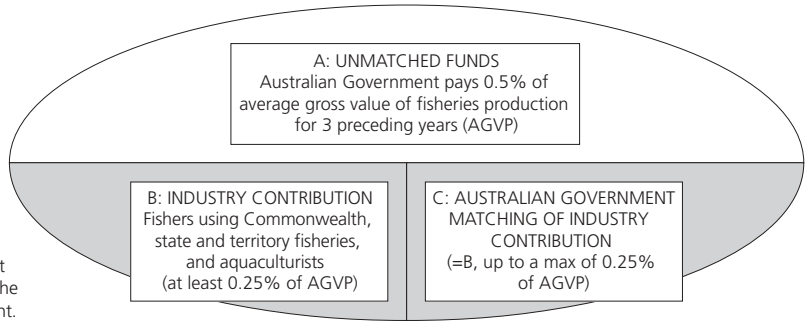
- the Australian Government providing unmatched funds equivalent to 0.5 per cent of the average gross value of Australian fisheries production for the current year plus the two preceding years (AGVP);
- fishers and aquaculturists providing contributions of at least 0.25 per cent of AGVP; and
- the Australian 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 iv.

Details of all FRDC revenue (including investments, royalties, and sales of products, information and services) are in the financial statements starting on page 79.

FIGURE 5: PROPORTIONS OF THE FRDC'S PRINCIPAL REVENUE BASE



In 2007–08, the industry contributed more than 130% 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 wild-catch fishing, has significance for the FRDC's revenue base. The Australian Government's contribution of 0.5 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 many requirements of Commonwealth legislation. The principal reporting requirements of the foremost legislation, 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:[1]

- 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.

1 The sub-paragraphs are an edited version of clauses 8 to 18 of the CAC (Report of Operations) Orders 2002.

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 overleaf, 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 visions and mission, 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 14–59) addresses this requirement.
- **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 via this annual report and in more detail in 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 (on page 134) 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

Before the election the FRDC Board was responsible to the Minister for Agriculture, Fisheries and Forestry; to the Parliamentary Secretary to the Minister; and to the Minister for Fisheries, Forestry and Conservation and, through them, to the Parliament of Australia. The new Federal Government has discontinued the positions of the Parliamentary Secretary to the Minister; and Minister for Fisheries, Forestry and Conservation.

Enabling legislation

The FRDC's enabling legislation is the *Primary Industries and Energy Research and Development Act 1989* (Commonwealth) (the 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 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 and Government Director;
- appointing directors, other than the Chairperson, Government Director 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 *Commonwealth Authorities and Companies Act 1997* 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 2007–08 is described on page 71.

Appendix D: Government priorities

The National Research Priorities can be viewed at http://www.dest.gov.au/sectors/research_sector/policies_issues_reviews/key_issues/national_research_priorities

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 table 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 9: 2007–08 TOTAL INVESTMENT — COMPOSITION OF GOVERNMENT RESEARCH PRIORITIES ATTRIBUTED TO EACH R&D PROGRAM ($ AND %)

2007–08 Total investment — Rural 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	140	0.81	4,387	25.38	31	0.2	4,560	26.31
Supply Chain and Markets	81	0.46	1,570	9.05	43	0.2	1,693	9.77
Natural Resources Management	7,823	45.13	628	3.62	0.6	0.1	8,452	48.76
Climate Variability and Climate Change	44	0.25	41	0.24			85	0.49
Biosecurity	180	1.04	379	2.18	0.1	0.1	559	3.23
Innovation Skills	182	1.05	98	0.56	821	4.7	1,101	6.35
Technology	140	0.81	89	0.51			229	1.32
Other research	106	0.61	355	2.05	194	1.1	655	3.78
Total	**8,697**	**50.00**	**7,548**	**44.00**	**1,090**	**6.00**	**17,335**	**100.00**

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

TABLE 9
CONTINUED

2007–08 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								
	A3								
	A4								
	A5	8,105	46.75	691	3.99	0.6	0.01	8,796	50.74
	A6								
	A7	44	0.25	37	0.21			81	0.47
Promoting and maintaining good health	B1								
	B2								
	B3								
	B4			1,533	8.85			1,533	8.85
Frontier technologies for building and transforming Australian industries	C1	78	0.45	2,259	13.03	887.0	5.12	3,225	18.60
	C2	126	0.73	1,845	10.64	3.0	0.02	1,974	11.39
	C3								
	C4								
	C5	58	0.33	455	2.62	5.0	0.03	517	2.98
Safeguarding Australia	D1								
	D2								
	D3	180	1.04	373	2.15	0.1	0.01	553	3.19
	D4								
	D5								
Others		106	0.61	355	2.05	194.0	1.12	655	3.78
Total		**8,697**	**50.16**	**7,548**	**43.54**	**1,090.0**	**6.31**	**17,315**	**100.00**

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

List of abbreviations

AFMA	Australian Fisheries Management Authority
AGVP	average gross value of fisheries production
ANAO	Australian National Audit Office
AOP	Annual Operational Plan
ASCo	Australian Seafood Co-products
BRD	bycatch reduction device
CAC Act	*Commonwealth Authorities and Companies Act 1997*
CRC	cooperative research centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
ESD	ecologically sustainable development
ESE	European Seafood Exposition
FRAB	Fisheries Research Advisory Body
FRDC	Fisheries Research and Development Corporation
FSANZ	Food Standards Australia New Zealand
ISO	International Organization for Standardisation
IT	information technology
MPA	Marine Protected Area
NPF	Northern Prawn Fishery
OHS	occupational health and safety
PIERD Act	*Primary Industries and Energy Research and Development Act 1989*
R&D	research and development
R, D & E	research, development and extension
RDC	research and development corporation
RRDP	rural research and development priorities
SBT	Southern Bluefin Tuna
SEA	Seafood Experience Australia
SSA	Seafood Services Australia Ltd
TED	turtle exclusion device
TRF	tactical research fund

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 2002 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

CAC Orders for Report of Operations

Primary Industries and Energy Research and Development Act 1989

Other Australian Government reporting requirements

Global Reporting Initiative

The Global Reporting Initiative (GRI) guidelines recommend that five sections appear in a sustainability report: vision and strategy, profile, governance structure and management systems, GRI content index, and performance indicators. The structure of this annual report is mandated by Australian Government legislation and regulations, and it is not therefore practicable to set out the report explicitly under these GRI headings. However, the report was prepared in accordance with the GRI guidelines (in addition to Australian Government requirements, which share many similarities) and it is particularly strongly focused on triple bottom line and governance reporting. Coverage of content recommended by the GRI is as follows:

Alphabetical index

Q

R

S

T

U

V

W

Y

Publications and other information

The following information is available from the FRDC:	Printed	Website
The R&D plan (*Investing in tomorrow's fish: the FRDC's research and development plan, 2005 to 2010*), 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.	✓	✓
This and the previous annual report.	✓	✓
R&D plans for Commonwealth, states, Northern Territory, regions and industry sectors.	✓	✓
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.	✓	✓
Information on completed projects (final reports and other related products).	✓ (see note 1)	✓
Non-technical summaries of all final reports of FRDC projects.		✓
Hyperlinks to other websites containing full final reports and fisheries R&D strategies, and to other important websites.		✓
R&D funding application details.		✓
Coming events of significance for the industry.		✓
Research databases.		✓

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; and
- 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.

FISHERIES RESEARCH AND DEVELOPMENT CORPORATION

A decade in review

Reflecting on a decade of research and development

> There are three principal means of acquiring knowledge… observation of nature, reflection, and experimentation. Observation collects facts; reflection combines them; and experimentation verifies the result of that combination.
>
> *Denis Diderot*
> French philosopher, author and encyclopædist (1713–1784)

In a climate of change it is sometimes useful to look back at what has been done previously to help set a course for future endeavours. The following pages look at a number of the key issues and activities that the FRDC have invested in over the past ten years.

Over this period FRDC have invested, with its partners — the Australian Government and seafood industry, over $500 million into fisheries related R&D. The investment covers the full spectrum of R&D activities associated with the industry from natural resources management and sustainability, through to building industry capacity and people development.

Decisions on where, and what to invest in, have been driven largely by the needs of the seafood industry and the priorities of the Australian Government — see pages xii–xiii and 129–131.

Measuring the success and impact of the investment is an important factor not only for the FRDC but also for its partners. The seafood industry clearly sees value and a return on its investment as the contribution from this sector has increased from around $3.2 million in 1997–98 to $7.5 million in 2007–08.

However, an increase in investment alone does not quantify the value of the investment. This is why the FRDC, along with the other research and development corporations, have developed a broad R&D evaluation framework. The first results of this analysis can be seen on pages 26–28, 39–40 and 48–50. These case studies are just the first round of assessments and will be followed by a larger number of projects being evaluated in the next two years.

The combination of R&D, reflecting upon these activities and assessing the results, provides the FRDC with a good platform for future investment.

FISHERIES RESEARCH AND DEVELOPMENT CORPORATION

Fishing for the future

Fishing for the future

The decade from 1997–2008 will go down as the era when Australia's fishing sector embraced the future.

It was an age of transformation that could be compared with the great industrial and farming revolutions of the past, and a time when ideas once thought radical received assent and then won wide support. It was a time when fishers evolved from hunters and gatherers of the oceans, to stewards of their resource and users of science to sustain it.

It saw the triumphal emergence of aquaculture as a major high-tech industry; the willing adoption of environmentally-sensitive technologies or management plans by most of the nation's fisheries; the repositioning of seafood as a high-value health food; the forging of a genuine partnership between fishers, managers and scientists; and the appearance of recreational angling as a potent sector in its own right.

Midwife to these remarkable changes was Australia's Fisheries Research and Development Corporation (FRDC), itself born just five years earlier, in July 1991. A decade ago, in 1997, commercial fishing was worth $1.7 billion and the catch 200,000 tonnes/year. That year FRDC funded 540 research projects worth $39.7 million ($15.6 million from FRDC itself). It had seven staff. The fishing industry, with some hesitancy, was paying 58 per cent of a levy of 0.25 per cent of GVP, which the Commonwealth matched with 0.5 per cent in recognition of the public good/private benefit nature of the research investment. Compared with land-based resources, knowledge of fish resources is poor and acquiring (it) is slow and expensive. R&D helps relieve pressure on wild fisheries resources.

The strategic goals were to develop fisheries sustainably, protect the marine environment and enhance the competitiveness of the fishing industry. The focus was predominantly on commercial fishing, but there was a growing interest in aquaculture, recreational and indigenous customary fisheries.

The backdrop to all this was a forecast that, by 2020 world demand for seafood would be roughly 30 million tonnes greater than the oceans could supply, as fishing industries globally pushed up against the limits of sustainability — and sometimes beyond them. Aquaculture was emerging as the great hope for filling the deficit, with the awe-inspiring challenge of boosting output 150 per cent in little more than two decades and a spectacular annual growth in value in Australia of 14 per cent. Consumers were waking up to the health benefits of omega-3 and omega-6 oils in fish and domestic demand was surging strongly — which FRDC responded to with consumer literature showing Australian seafood has higher levels of these oils than similar fish species from the northern hemisphere.

Efforts to limit the impact of fishing on the marine environment were bearing fruit. In South Australia prawn fishers voluntarily installed bycatch reduction devices as a result of the findings of FRDC's effects-of-trawling research — possibly the first industry in the world to do so. This followed the release of a special guide showing fishers how to build and operate the devices.

To build up the competitiveness, resilience and returns of the fishing industry, FRDC became a major backer of SeaQual, a nationwide partnership involving fishers, aquaculturists, processors, retailers and exporters in developing world-best standards of quality and safety. It also continued to support the Queensland-based Australian Seafood Centre which, amid some scepticism and apathy, was bravely pioneering a range of new seafood products. This signalled an important shift in perception that fisheries research was also about post-harvest, observes FRDC Executive Director Patrick Hone.

It was already clear that people and skills were the key to success in all these areas. The Australian Seafood Industry Education Network achieved official recognition as the main industry training advisory body which was to become Seafood Training Australia.

FRDC also completed a major review of Australian fish habitat, identifying major threats, issues and gaps in knowledge, as a vital underpinning to future research planning. It published Codes of Conduct for both the wild-caught and aquaculture sectors and the second edition of the *Australian Seafood Industry Directory* — a guide to all the main operators and authorities.

For consumers and chefs there was a pictorial guide *Seafood by Season*, designed to promote the product at its best. For exporters there was a major analysis of seafood demand in Asia and a special seafood edition of the Prime Minister's *Supermarket to Asia* magazine.

In 1998/99 the Corporation funded 592 research projects worth a total of $37.3 million. Chairman Russell Reichelt named it the most successful year to date in terms of outcomes. Knowledge of fish stocks and biology advanced for a wide range of species including rocklobsters, prawns, Southern Bluefin Tuna, abalone, Orange Roughy, mullet, Black Bream, pilchards, pipis, gemfish and other species of the South East Trawl Fishery.

Research also began to hammer out a basic understanding of the indicators of ecologically sustainable development (ESD) on fisheries, the effects of fishing, as well as other marine species on stocks, the impact of changes in fishing effort — and the knock-on effects of these on the human beings and communities who drew their livelihoods from the sea. On the environmental side major studies focussed on the impact of prawn trawling on the Great Barrier Reef, and on non-target species such as turtles. This led directly to advice to fishers on best practice ways to cut bycatch using turtle exclusion devices (TEDs) and bycatch reduction devices (BRDs).

Insights were gained into the fascinating deepsea lifeforms inhabiting the sea mounts in the lightless waters off southern Tasmania, leading to pictorial coverage in the media which introduced an awed Australian public to the strange ecosystems that formed part of our native continent. This resulted in a voluntary industry agreement to protect sea mounts.

A major highlight was publication of the first edition of the 'fish-lover's bible' the *Australian Seafood Handbook*, a lavish full-colour 400-page guide to edible Australian fish species detailing their habits and habitat, taxonomic descriptions, fillets and protein fingerprints (to help consumers and chefs identify them beyond doubt) and the type of fishery targeting them. Renowned Sydney fish restaurateur Peter Doyle greeted the book warmly: "In my 50 years as a fisherman and restaurateur my biggest disappointment has been to see how many people miss out on tasting the full range of our wonderful seafood… one of the things we have needed for years has been a reliable guide on how to identify seafood." Ten years on, the *Australian Seafood Handbook* is as popular, comprehensive and fascinating than ever.

Of equal importance, from the industry perspective, was the release of a strategic plan for achieving seafood excellence, as fishing began its long, determined climb from booms, busts and bulk commodity returns to high-value, niche-marketed product of outstanding quality.

On land, new high-performance diets were devised to feed the hungry fish and prawns in the nation's growing aquaculture industries, replacing fish meal with other forms of protein. Aquaculture systems were refined for yabbies, oysters, scallops and Green-Backed Flounder.

The turn of the millennium (1999–2000) was marked by an advance that highlighted the changing character of fishing from hunting and gathering to husbanding and managing. A memorandum of understanding was signed between FRDC and the Tuna Boat Owners Association to deliver research services to the rising Bluefin Tuna aquaculture industry, which had kicked off in the early 1990s and was now facing the sort of challenges that growth and a desire for outstanding performance bring to any new venture.

Even more significantly, a research paper by CSIRO scientists Keith Sainsbury and Tony Smith laid the ground for a revolution in industry thinking — the embracing of ecologically sustainable development as the way forward. "That was the key document," recalls Patrick Hone, "it gave strong leadership on the way forward at exactly the right time."

Adorned with the hungry visage of a gorgeous Blue-Speckled Coral Trout, the FRDC strategic plan for 2000–2005 "Investing for Tomorrow's Fish" marked a watershed in how the nation's 11 million square kilometre ocean zone was to be studied, tended and developed.

Recognising that the desert character of the continent and its surrounding seas meant that Australian fish catches were likely to remain small in volume by world standards, the accent on sustainable, high value fishing activity was sharply accentuated. The term 'ecologically sustainable development' became the watchword, for FRDC in its research planning, for governments in managing the ocean resource and for the fishers themselves in harvesting it. For the first time the plan recognised the true dimensions of Australia's biggest fishery — the millions of amateur anglers who each year flock to the sea or inland waters to enjoy one of the nation's favourite pastimes — and the importance of managing their resource for the future also. The plan laid down other important principles, such as the necessity for providing secure access to fish resources based on objective data about their size and condition. It also foreshadowed the advent of Marine Protected Areas by the states, which necessarily excluded fishers as a means of protecting biodiversity.

At the same time, the plan accentuated the drive to take seafood up-market — adding quality, value, superior hygiene and safety, new products and mouth-watering recipes — to meet an insatiable global demand for fish of all types. Behind this were strong desires to minimise waste, capitalise on the healthy image of fish and secure a real increase in returns even for species previously seen as of lower value in the market. The plan also recognised the increasing sophistication of the market chain between fisher and consumer, the worldwide nature of its operations, and the need to better train Australia's industry operators for success in this testing new environment.

New Zealand fishing industry leader Sir Tipene O'Regan commented "I must mention with considerable praise the FRDC and its R&D Plan for 2000–05. Such well-designed policy strategy documents, readily accessible and carefully presented, are a key tool in persuading government decision makers to respond with systematic and rigorous regulation, soundly rooted in quality science and the empirical experience of industry."

By 2000/01 seafood was worth $2.3 billion and was the nation's fourth most valuable primary industry. The average Australian consumed around 15.3 kilograms of fish a year, half of which was imported. Exports were climbing steadily towards the magic $2 billion mark… and the industry was starting to work together as never before.

"The national fisheries research advisory boards — or FRABs — had become a real way of bringing together fishing operators, government managers and scientists, to determine the research needs and set the agenda," recalls former FRDC Executive Director Peter Dundas-Smith. "It was part of a major cultural change in the industry as they recognised that the management-related research they'd been so afraid of was in fact the key to their own futures."

In another dimension, the huge size of 'rec fishing' (recreational angling) was sinking in, powered both by Australians themselves and a goodly proportion of the nation's 3.8 million international visitors. In some species, the recreational catch was now said to exceed the professional catch, and the importance of applying science to ensure their sustainability was growing strongly. This fitted well with the growing thrust by FRDC and its partners to develop indicators with which to measure ecologically sustainable development for all kinds of fisheries, to base it in a real, measurable world which governments and operators alike could understand and work with.

An important milestone was the launch of *Bycatch Solutions*, a handbook for fishers that captured the results of years of research into ways to minimise the taking of non-target species — an issue clearly among the most sensitive so far as the Australian public was concerned. This was leading to a heightened focus by FRDC and its stakeholders on community awareness of the impact of fishing on natural resources — and the importance of involving the wider community so they better understood the changes in attitude, approach and technology that were afoot and began to regard their seafood as the product of a sustainable system.

The ESD reporting and assessment framework was expanded to encompass economic and social factors as well as environmental criteria. Tuna farmers the Stehr Group became the first Australian fishing company to gain ISO 14000 certification, assisted by the new manufactured tuna diets developed through FRDC.

Attracting the right level of funding support from industry had long been a challenge. For every fisher dollar, FRDC was investing more than $3 of government money in research, but industry contributions were still 29 per cent short of the maximum level that attracts matching public dollars. Thanks to the visionary research plan, however, fishers everywhere were awakening to new opportunities — and contributions were starting to grow: in 2000/01 alone they rose by 20 per cent.

Despite many success stories, market and institutional failures in the supply chain continued to dog the fishing industry in capitalising on its opportunities and in 2002 Seafood Services Australia — previously a series of joint-venture researcher projects — formally incorporated to become an engine for industry-wide innovation. This covered value-adding, product design and quality, management systems for ESD, market development, fish names and technical advice. In particular it embodied development activities springing from FRDC research.

The thirst for knowledge around Australia's fisheries appeared insatiable and, despite steady growth in industry revenues, FRDC found itself only able to fund two out of five of the research applications laid before it — those of the very highest priority. These included a harvest strategy model that allowed managers to predict the maximum sustainable yield of the trawler industry around the Great Barrier Reef, and a major habitat study of the Southeast Trawl Fishery designed to better manage its impact on the seabed. Efforts were being made to take the boom/bust cycle out of scallop dredging round southern Australia through a better understanding of both biology and the environmental impacts, and studies of line fishing were carried out with similar aims in view.

A watershed national survey of recreational anglers found that about 19 per cent (or 3.6 million) of the population fished — in the process taking about 125 million individual fish, crustaceans and molluscs totalling 35,000 tonnes, and spending $1.3 billion on their activity. At the same time an audit of the nation's 971 estuaries revealed that half were significantly modified so far as fish were concerned — the rest being close to pristine. "It was an eye-opener," says Patrick Hone. "It highlighted that rec angling is both a big business and a complex one involving many different species, interests and activities. It led to distinctive research being carried out to make it more sustainable."

From bycatch exclusion there were signs the professional fishing industry was moving at a gratifying pace towards embracing ecologically sustainable development. Bycatch principal investigator Dr Julie Robins said "The fishing industry is like any other — there are saints and there are sinners. Fortunately, some are willing to share their knowledge, experience and vessels with us so the industry could accept bycatch reduction devices. They could see this was a necessary step towards sustainable trawling."

In other developments, Australia's richest aquaculture industry at the time, pearls, underwent an environmental risk and impact assessment and took on board advice on how to improve its performance. In Western Australia, eight years of research into freshwater crayfish farming was starting to pay off in new ways to breed, feed and husband yabbies and marron, enabling farmers to produce marketable animals that grew at twice the rate of their wild cousins.

In 2002–03 the major challenge was still fiscal — finding enough money to carry out all the research that needed to be done — and ESD remained the central goal of research policy. The fishing industry produced 233 000 tonnes of product worth $2.4 billion — up from $1.8 billion a decade earlier.

By now aquaculture was firmly established as one of the nation's glamour growth sectors, its value trebling in a decade to $733 million and a real growth rate year-on-year of 11 per cent. Already it was supplying nearly a third by value of the total fish harvest, rising to 45 per cent by the present day.

Greater research effort was also going into helping traditional fisheries operated by Aboriginal and Torres Strait Islander people under customary laws which fell outside normal fisheries regulation. A 2001 High Court decision gave indigenous people the right to fish the seas wherever the traditional relationship had been maintained — adding that this should coexist with other rights. Lately this has developed into a quest to see how fishing can help address the health, fitness and social wellbeing challenges facing indigenous communities.

By the early 2000s, one of the greatest challenges for research managers at FRDC — was how to measure the return on research investment, especially in non-monetary areas like ESD — was gradually being mastered. Five major cost-benefit analyses were commissioned each year to gain insight into this. The Corporation's research goals were fine-tuned to fit the Howard Government's new National Research Priorities such as environmental sustainability, a healthy community, frontier technology for industry and safeguarding the nation.

Major outcomes that year included a national ESD reporting framework and website, a "How to" guide to wild fisheries and a guide to assist in the choice of the right environmental management systems. At the same time, research into under-utilised fisheries was under way, including pilchards in southern waters, longlining for broadbill, swordfish and tuna in the Pacific and the Patagonian Toothfish Fishery off Heard and McDonald Islands.

FRDC stepped up its role as a major publisher of books and booklets, with works explaining to anglers how to catch and release fish safely, the *Story of Seafood in Australia*, a field guide to sharks and rays, and studies of scallop culture and estuary health.

Energetic research focus was now being devoted to reducing waste — both the waste of fish in the processing pipeline and the use of fish in the global stockfeed trade, where almost a third of the world's catch was ending up. The goal was to find stockfeed substitutes which would free up more of the actual fish caught, their oils and other products, for human consumption rather than feeding them to animals. Better understanding of the nutritional needs of salmon, Murray Cod, abalone and snapper enabled researchers to design superior aquaculture diets.

The accent was also strongly on putting more dollars in fishermen's pockets by increasing the market value of their catch through novel products, value-adding, more environmentally sustainable methods and the development of new markets for fish.

The Tasmanian rocklobster industry provided convincing evidence of the changes taking hold in fisheries management over the past five years. Using satellite tracking, computer models and an understanding of larval biology, researchers were able to clarify the larval lifecycle and recruitment patterns, convincing fishers of the need to protect breeding stock to ensure a sustainable catch in future years — and highlighting the value of partnership between fishers, managers and researchers.

By 2004/05 a similar partnership approach had brought about a remarkable turnaround in the northern tiger prawn industry after some years of being rated as 'overfished', with stocks rebuilt to levels deemed 'sustainable' in the future. On the other side of the continent the Shark Bay snapper were on the way back following intensive monitoring of catches and bycatch while in South Australia the Spencer Gulf prawns had also rebounded from a dip. Research achievements included the world-first measurements of activity and oxygen metabolism in caged Southern Bluefin Tuna as part of the Aquafin CRC.

Most significantly, the fishing industry's ecologically sustainable development framework was adopted for use in Australia's farming sector — clear proof of the intellectual leadership that was now emerging from the fishing sector.

At the same time, industry financial contributions had begun to climb strongly. In 2004 they surpassed the figure matched by the Commonwealth by 14 per cent, indicating that fishers and companies were now seeing a real return on their scientific investment — without always requiring a sweetener from the taxpayer. By this stage, it was calculated, the nation was earning $3.85 from every dollar put into fisheries research.

The following year saw fresh advances in stock assessment — a better grasp of mortality in Southern Bluefin Tuna led to greater confidence in stock estimates, and shark risk assessment blazed the trail for a national risk assessment template for marine species. New environmentally-friendly trawl gear was introduced. Clever isotope analysis of what oysters eat enabled Clyde River Oyster farmers to fine-tune production according to the food supply and better manage the riverine environment. Research began into fish that migrate between fresh water and the sea — a group of species potentially at risk from land-based development and fishing in both environments.

National conferences on rocklobsters and seafood directions continued to deliver the latest findings to industry — an activity that was clearly paying off, as industry in turn doubled its unmatched funding component, to 28 per cent, a figure that rose again the following year.

By 2006/07 the total value of Australia's commercial and recreational fisheries had reached $4 billion, underpinned by a combined annual research budget of $53 million. Queensland fishers were leaping onto the new square-mesh codends which significantly cut bycatch without reducing the target catch; Western Australia found, to its pleasure, that species abundance and richness was not significantly different in fished and unfished parts of its seas; the Great Barrier Reef had been mapped in its entirety enabling sustainability indicators to be developed; Australian seafood received star billing at the European Seafood Expo in Brussels and researchers found a new use for old lobster heads — helping to alleviate the pain of arthritis. In Sydney, 10 leading seafood companies took part in the nation's leading restaurant trade show and in Western Australia the nation's rising young chefs went on a public seafood tour.

A crowning outcome to a decade of rising investment in fish research were two scientific world-firsts — both signifying the extent to which industry had now embraced the idea of doing its own R&D to secure its future. In the west MG Kailis successfully produced juveniles of the succulent tropical rocklobster for the first time, and in the south the Stehr Group produced the first Southern Bluefin Tuna larvae, laying the ground for totally sustainable harvests. It was an unambiguous signal that, in less than 10 years, Australia's fishing industry had come a long way — and now read its future as founded on science and sustainability.

Looking back, Peter Dundas-Smith sees the gravitational role of research in drawing together the different parts of the industry — managers, fishers and scientists — and the different jurisdictions, federal and state, as one of the most significant but rarely-mentioned outcomes. The emergence of two strong, vibrant and new activities in aquaculture and post-harvest was economically of huge significance. On the sustainability front, the voluntary adoption by many of Australia's fisheries of environment management plans based on scientific indicators was proof of the desire of fishers for their grandchildren to follow them.

"Among the most important science was that which helped transform tuna from a wild-caught to a culture-based industry. At the same time stock assessment methods improved dramatically, thanks largely to CSIRO — and it was this which led to Australia been seen as a global leader in fisheries management," Peter adds.

Patrick Hone, who took over as FRDC Executive Director in 2005, sees the emergence of a national approach to managing research, combined with its regional development and implementation, as of profound significance. "But the conference in Geelong in 2000 where ESD was adopted was also a huge turning point," he adds. "Before that we had no real quantitative measures, no report cards. From there on we could say with confidence we had a complete picture of a fishery. That changed the landscape completely — and was picked up round the world."

Another subtle but far-reaching change, he adds, is the recognition that fisheries management is more about people — their skills, hopes and aspirations — than about managing fish. This has led to a five-fold increase in the investment the industry now makes in training and developing its human capital.

After a decade of transformation, today there is little sign the pace of change in fishing is easing up, in fact, as global catches dwindle, the Australian approach is becoming more relevant than ever — science and cooperation are securing the future.

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, 2007–08

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FRDC is co-funded by our stakeholders, the Australian Government, and the fishing industry.

The FRDC invests strategically across all of Australia in research and development (R&D) activities that benefit all sectors of the fishing industry. Our goal is for Australia's fisheries to be sustainably managed.