



Australian Government

**Fisheries Research and
Development Corporation**

FRDC
Annual Operational Plan

2011-12

FRDC Vision

The vision of the Fisheries Research and Development Corporation is a vibrant Australian fishing and aquaculture industry, supporting and adopting world-class research to achieve prosperity; and wisely using the natural resources on which it depends.

The planned outcome for the corporation

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

Stakeholders

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

Portfolio Minister

The portfolio Minister for Agriculture, Fisheries and Forestry is
Senator the Hon. Joe Ludwig



The Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry is the Hon Dr Mike Kelly AM, MP



FRDC Board

The Hon. Harry Woods	Chair
Mr Stuart Richey AM	Deputy Chair
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Ms Renata Brooks	Director
Mr Brett McCallum	Director
Dr Daryl McPhee	Director
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Ms Cheryl Cole	Manager Corporate Services
Mr Timothy Yapp	Office Administrator
Mr Crispian Ashby	Programs Manager
Ms Annette Lyons	Projects Manager – Finance
Ms Kylie Giles	Projects Manager – Research
Dr Carolyn Stewardson	Projects Manager – Research
Mr Peter Horvat	Communications Manager
Ms Julie Haldane	Communications Officer
Ms Jo-Anne Ruscoe	Projects Manager – People Development & Communities



Australian Government
Fisheries Research and Development Corporation

Reference: 340046

1 May 2011

Senator Joe Ludwig
Minister for Agriculture, Fisheries and Forestry
Australian Federal Parliament
Parliament House
CANBERRA
ACT 2600

FRDC 2011-12 Annual Operational Plan

Dear Minister

In accordance with Section 26(1) of the Primary Industries and Energy Research and Development Act 1989, I have pleasure in submitting for your approval the Annual Operational Plan (AOP) of the Fisheries Research and Development Corporation for the year commencing 1 July 2011.

In developing the AOP, the FRDC has ensured it reflects the consultation with both government and industry stakeholders. This AOP has been developed to give affect to both the new National Fishing and Aquaculture RD&E Strategy and the FRDC's RD&E Plan 2010-15.

The AOP investment strategy targets the key priorities of:

- reducing bycatch and incidental catch of threatened, endangered or protected species;
- climate change;
- improving the profitability of the seafood sector, including co-management and supply chain developments;
- resource access and allocation;
- improving the people capacity;
- improving the customary values for indigenous fishers; and
- increasing the emphasis on extension and adoption

The research activities outlined in this annual operational plan will contribute to implementing the strategies and achieving the objectives set out in the Australian Government's National Research and Rural R&D Priorities.

Yours sincerely

The Hon. Harry Woods
Chair

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



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Executive Summary

The Fisheries Research and Development Corporation (FRDC) plays a pivotal role in planning, funding and managing Research, Development and Extension activities (RD&E) for its stakeholders; the Australian Government and the fishing industry.

The FRDC aims to maximise the benefits from its investment by ensuring that it is well targeted, meets governments' and industry's RD&E priorities, and builds on previous achievements.

The FRDC is unique among the rural research and development corporations (RDCs) in taking a leadership role in balancing investment priorities between natural resource management and industry productivity and development. The majority of the FRDC's RD&E investment addresses public good priorities so as to ensure sustainable fisheries management and sustainable habitats.

FRDC is strategically placed to broker partnerships between the Australian Government, industry and research partners around Australia. This positioning also allows the FRDC to communicate and network with partners to leverage, and broker knowledge to get the best results from RD&E for government, industry and the community.

The FRDC plays a leadership role in fisheries RD&E through:

- project planning, management, and extension across government agencies and industry nationally;
- facilitation and partnership activities with research partners;
- collaboration across other (RDCs), independent agencies/states and international organisations;
- leverage of investment funds across Australia.

To ensure the FRDC meets stakeholder needs, and increases the speed of output delivery, it will continue to improve the way it invests in, and manages RD&E. This will involve reviewing its current funding mechanisms to ensure they are flexible and tailored to meet stakeholders' needs.

Planning environment

By the start of this AOP, the National Strategic Rural Research and Development Investment Plan and the Productivity Commission Review of the RDCs, along with the Australian Government's response may be publically released. These documents may require the FRDC to update this AOP.

On 23 April 2010, the Primary Industries Ministerial Council (PIMC) approved "*Working Together: the National Fishing and Aquaculture RD&E Strategy 2010*", that establishes the future direction to improve the focus, efficiency and effectiveness of RD&E to support Australia's fishing and aquaculture industry.

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

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

Embracing a national strategy is a significant step for fishing and aquaculture. Structural and collaborative arrangements, driven by strong leadership, will continually improve on the benefits the strategy delivers for the FRDC's stakeholders. The FRDC will continue to play a critical role in bringing about change to realise these benefits through its funding.

A key factor to consider with regards to the development of the national strategy is that there remains on-going activity that will take several years to complete. This includes the development of the Research Network and the allocation of agencies to Major-Support-Link roles. Implementation of any component will be dependent on coordinated implementation by individual State and Territory Ministers. In light of this, the FRDC will continue to fund and allocate resources to existing priorities, while monitoring the broader context.

Likewise the Development of a National Fisheries and Aquaculture Extension and Adoption Framework will take time to be developed. During this time FRDC will continue to look for areas where investment in Extension and Adoption (E&A) activities will deliver results.

Priorities and Outputs for 2011-012

Reducing by-catch and incidental catch of threatened, endangered or protected species — By-catch and by-catch reduction will continue to be an area in which a range of investments will be made. Activities are underway to reduce the interactions between fishers and sea snakes, seals and other threatened, endangered and protected species.

Climate change — The FRDC has created a coordinated funding program to enhance the fishing industry's capacity to adapt, mitigate against, and take advantage of, further climate change. The program partners are the Department of Climate Change and Energy Efficiency (DCCEE), Department of Agriculture, Fisheries and Forestry (DAFF) and participating state government agencies. Over the course of the next three years the research funded will start to become available. FRDC will continue to participate with the other rural RDCs in the collaborative research initiative "Climate Change Research Strategy for Primary Industries" (CCRSPI), to examine and respond to the impacts of climate change on primary industries.

Improving the profitability of the seafood sector — The FRDC's investment will aim to optimise the use of the wild resources, and build on increasing capacity in the aquaculture sector. Research in Western Australia will target under-utilised fish stocks, and improved retail chains. Social and personal values of recreational and customary fishers is also a focus here.

People development — professional development awards and leadership programs will build leadership, professionalism, and cross-sectoral understanding, and enhance opportunities for young people, Aboriginal and Torres Strait Islanders, and women, to participate and reach their potential. The FRDC is partnering with Seafood Services Australia to address trade and market access issues in a number of international markets, including China and the European Union.

Resource access and allocation — Resource access and allocation, and the delivery of performance indicators for spatial management will be completed. Work will continue on developing improved data collection techniques for recreational fishers, and how this can be incorporated into management models.

Improving people capacity — Opportunities to develop and share knowledge and skills will be provided through a visiting experts program, travel awards and conferences. Further, the FRDC is leading a change in culture around workforce training, and will invest in workforce attraction and retention strategies, including industry and research connections with the education sector.

Improving customary values for indigenous fishers — Indigenous input into management, planning and project assessment is limited due to the complexities and costs of engaging effectively with indigenous Australians on fishing and seafood related issues. The FRDC has funded a number of projects to identify approaches that will result in improved consultative processes between representatives of the indigenous community and other fishers.

Increasing the emphasis on extension and adoption — The FRDC will assist in the development of a national Fisheries Extension and Adoption plan to facilitate the transfer of knowledge to its stakeholders. This may include the development of an extension network and a range of information resources for industry. It will also look to fund research to better target extension activities.

Joint Rural RDC and Government Initiatives:

National Fishing and Aquaculture RD&E Strategy – The FRDC has helped develop the Fishing and Aquaculture RD&E Strategy, and will continue to take a lead role in its implementation in partnership with the Australian Fisheries Management Forum and FRDC's Representative Bodies.

Rural R&D Council – The FRDC will work with the Council of Rural RDCs (CRRDC) to ensure that the proposed national plan being developed by the Rural R&D Council delivers desirable outcomes to government, industry and other stakeholders. Integral to this development will be the implementing of the CRRDC strategic plan, and the RD&E Framework for all rural sectors; and in particular the fishing and aquaculture sector.

Shared services – In partnership with the Canberra based RDCs, FRDC is working to share services to reduce administrative costs and ensure efficient delivery of RD&E investment. Some of these shared services will have efficiency benefits for non-Canberra based RDCs.

Productivity Commission (PC) – FRDC will work with the Australian Government to implement the recommendations from the PC Report.

Stakeholder consultation

The FRDC works with its primary partners the Australian Government and the fishing industry to implement and review progress of strategic RD&E directions; disseminate the results; and assist when appropriate, commercialisation.

In addition the FRDC partners many other organisations in both the research funding and service provision areas. In particular the FRDC has a strong linkage with the Seafood Cooperative Research Centre (SCRC).

Investment strategy

The FRDC invests in RD&E across the whole value-chain of the commercial fishing and aquaculture industry, and for the benefit of both indigenous and recreational fishers. The FRDC provides research administration and services using a value adding model. Unlike the 'granting' model, the FRDC undertakes significant commissioning and management of RD&E through a variety of flexible approaches.

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

While running a 'granting' model for research and development funding can be carried out at minimal cost, the cost of running a value added service is significantly higher. This value added model provides a greater return on investment and significantly increases the rate of adoption of research. The FRDC is able to achieve this result through its ongoing investment in systems that deliver best practice in integrated project, financial and human resource management.

The FRDC will focus its investment in the following areas.

Programs	Themes
Environment	<ol style="list-style-type: none"> 1. Biosecurity and aquatic animal health 2. Habitat and ecosystem protection 3. Climate change 4. Ecologically sustainable development
Industry	<ol style="list-style-type: none"> 5. Governance and regulatory systems 6. Resource access and allocation 7. Production, growth and profitability 8. Consumers, products and markets 9. Value from aquatic resources
Communities	<ol style="list-style-type: none"> 10. Resilient and supportive communities
People Development	<ol style="list-style-type: none"> 11. Leadership development 12. Workforce development 13. Innovation skills
Extension and adoption	<ol style="list-style-type: none"> 14. Extension and adoption

Performance evaluation

In 2010-11 the FRDC completed an economic evaluation of a statistical sample of 18 randomly selected clusters of FRDC investment across three programs. This evaluation found that the average return on FRDC investment is 5.6 to 1. The final report and all 18 cluster analysis were prepared by Agtrans Research (economics consultants and strategic policy advisors) and are available at the FRDC website.

A number of lessons were learnt from completing these assessments – (refer page 30). This knowledge will be used to inform and improve future evaluation activity.

In the coming year the FRDC will start the fourth phase of benefit cost assessments (BCAs). This will build on the existing clusters analysis by adding new projects to those that have already been assessed. This will increase the number of projects assessed significantly, build on the existing data set, and provide more fine scale intelligence with regards to project outcomes.

The FRDC will also run, in conjunction with the BCAs, an evaluation of the extension and adoption of research to provide empirical data that will provide a mechanism to verify the assumptions contained in the first round of assessments.

Extension and Adoption (E&A)

A National Fisheries and Aquaculture Extension Framework will substantially guide the FRDC investment in E&A activities over the 2011-12 year. The FRDC will work within the framework to focus on increasing the E&A within projects to ensure that stakeholders are aware of the research, and are well placed to take up the results. The FRDC will also use the framework to identify gaps in the fisheries E&A landscape, and commission or invest in activities to address these gaps.

Further research into E&A will continue to inform the knowledge base from which the fishing industry can draw. It will also provide the FRDC a sound basis for future investment in this area.

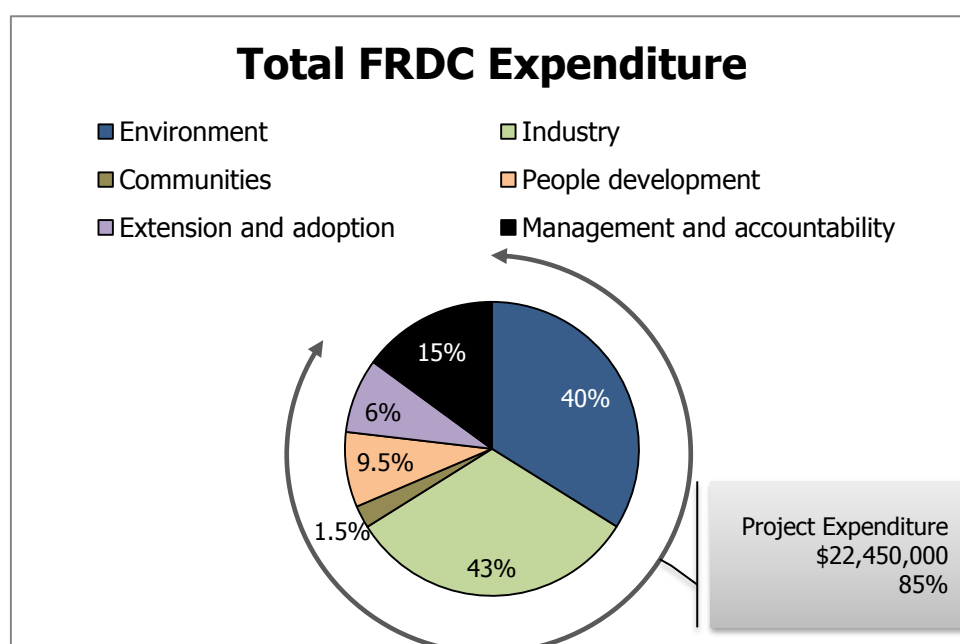
Notwithstanding the fishing industry focus for the FRDC, it will also keep abreast of E&A developments at the broader primary industry level, working with other RDCs and drawing upon the bank of knowledge that has been developed.

Annual Operational Plan 2011-12 Budget

REVENUE	\$	\$
Total revenues from the Australian Government		16,297,187
<i>Australian Government 0.5% AGVP</i>	10,864,791	
<i>Australian Government matching of industry contributions</i>	5,432,396	
Contributions revenue from jurisdictions		7,545,000
Projects revenue from other parties		2,100,000
Other revenue		385,000
TOTAL REVENUE		26,327,187

EXPENDITURE	\$	\$
Projects Expenditure		22,450,000
Made up of:		
Environment	8,980,000	40%
Industry	9,653,500	43%
Communities	336,750	1.5%
People development	2,132,750	9.5%
Extension and adoption	1,347,000	6%
Total	22,450,000	
Made up of:		
Forecast payments against existing contracts	16,651,987	
Forecast payments against new contracts	5,798,013	
Total	22,450,000	
Management and accountability		3,873,573
TOTAL EXPENDITURE		26,323,573

NET RESULT FOR THE YEAR	3,614
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The FRDC

The Fisheries Research and Development Corporation (FRDC) is a co-funded partnership between its two stakeholders, the Australian Government and the fishing industry. It was formed as a statutory corporation on 2nd July, 1991, under the provisions of the *Primary Industries and Energy Research and Development Act 1989* (the *PIERD Act 1989*) and is responsible to the Minister for Agriculture, Fisheries and Forestry. For a short history of the evolution of the FRDC refer www.frdc.com.au/aboutus/about-us.

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

The primary revenue for the FRDC comes from the Australian Government and the fishing and aquaculture industry; in addition it manages significant contributions by stakeholders in FRDC-funded projects. 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 (AGVP);
- fishers and aquaculturists providing contributions of at least 0.25 per cent of AGVP; and
- the Australian Government matching contributions by fishers and aquaculturists up to a maximum of 0.25 per cent of AGVP.

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

Board

A Chair and a board of directors govern the FRDC, while an Executive Director (ED) leads the corporation's business activities on a day to day basis. The board oversees corporate governance, sets strategic direction and monitors the ongoing performance of the FRDC and the ED. The FRDC board and the ED are responsible for managing and evaluating the organisation and its investments, and for reporting to Government and the fishing industry. During 2011-12 the focus for the FRDC Board will be on:

- strengthening and improved cross-sectoral investment processes between RDCs.
- implementing the CRRDC evaluation process
- implementing the Primary Industries Standing Committee RD&E Framework
- developing strategic invest options to ensure delivery of outcomes against the RD&E Plan
- responding to findings of the Productivity Commission inquiry into the RDCs and the Rural Research and Development Council's National Strategic Investment Plan.

Fisheries Research Advisory Bodies (FRABs)

The FRDC supports a network of FRABs covering Commonwealth fisheries and the fisheries and aquaculture of each state and the Northern Territory. The FRABs have an extremely important role in optimising the efficiency of the FRDC's planning and investment processes. The FRDC works to ensure a majority of open call and Tactical Research Fund applications are submitted through, or reviewed by, the FRABs.

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

RD&E planning environment

Planning environment

On 23 April 2010, the Primary Industries Ministerial Council (PIMC) approved the *"Working Together: the National Fishing and Aquaculture RD&E Strategy 2010"*, which establishes the future direction for the FRDC and outlines the key strategic areas (14 themes – see page 7) on which Annual Operational plans are based.

Running in parallel to the development of the national strategy has been the development of the FRDC's new Research, Development and Extension Plan (RD&E Plan) for 2010–2015. The Minister for Agriculture, Fisheries and Forestry approved the plan on 13 July 2010. Importantly, the strategy and plan provide a foundation for further improvement in the outcomes for stakeholders from their RD&E investment. The most important elements that require greater focus during the coming year are to address the identified gaps in capability, strategies to close those gaps and advance major-support-link arrangements within a regional and national approach. Embracing a national strategy is a significant step for fishing and aquaculture. Structural and collaborative arrangements, driven by strong leadership, will continually improve on the benefits the strategy can deliver for our stakeholders. The FRDC will continue to play a critical role in bringing about change to realise these benefits.

The FRDC will continue to take a leadership role in driving issues of national significance such as climate change. It will also assist at the local level by focusing on extension and adoption of research with stakeholders.

Innovation remains a key focus for FRDC investment. The FRDC will strive to fund more projects that will deliver substantial change, over investing in projects that deliver gradual incremental increases in knowledge and adoption. In addition the FRDC has a strong linkage with the Seafood Cooperative Research Centre (SCRC). The FRDC, as a core participant of the SCRC, will invest over \$28 million cash and \$1.4 million in-kind, over its seven year life. The goal of FRDC's investment in the SCRC is to assist end-users of its research to deliver safe, high-quality, Australian seafood and increase the profitability and value of the industry.

By 2011-12 the new National Strategic Rural Research and Development Investment Plan will come into effect. It is too early to gauge how this plan will affect FRDC's planning environment. Combined with the recommendations of the Productivity Commission and the Australian Government's response, these will need to be implemented into FRDC's business processes during 2011-12, and may mean FRDC updates this AOP.

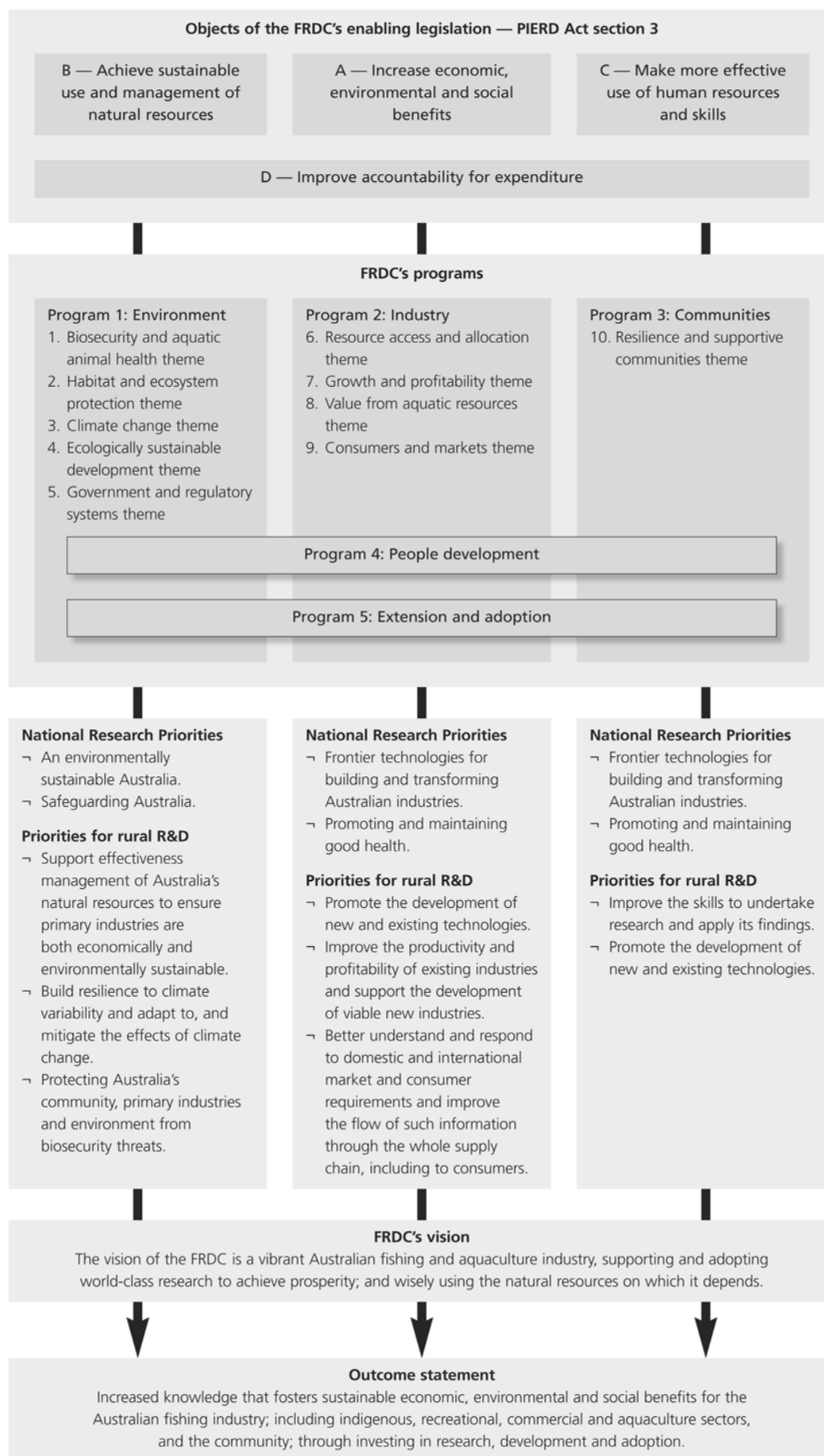


Australian Government research priorities

The FRDC will work closely with the Minister for Agriculture, Fisheries and Forestry, the Parliamentary Secretary to the Minister and the Department of Agriculture, Fisheries and Forestry (DAFF) to ensure it delivers results in line with the Australian Government's National and Rural R&D priorities – see *Australian Government Research Priorities* section at Attachment 1. The FRDC has developed explicit programs (e.g. Climate Change) to ensure the delivery of the Australian Government priorities into its planning and reporting systems, addressing most of these priorities within the framework of its RD&E programs. The priorities also closely align to the FRDC's four legislated objects (section 3 of *the PIERD Act 1989*) as shown in Figure 1: FRDC's framework for integrating legislative, government and industry priorities.

Integration of the planned outcome with legislative, stakeholder priorities

The FRDC's objectives, derived from section 3 of *the PIERD Act 1989*, are incorporated in its vision and planned outcome. The FRDC's RD&E programs mirror the core themes of sub-sections 3(a), (b) and (c) of the Act. This alignment has brought simplicity and robustness to the FRDC's RD&E planning, implementation and reporting, and to many of its kindred organisations. It has also facilitated a triple-bottom-line approach to funded activities.

Figure 1: FRDC’s framework for integrating legislative, government and industry priorities.

Relationships with stakeholders

In developing the projects that address the five programs, directions are established in association with the FRDC's partners — government, industry stakeholders and research organisations.

The FRDC works with its partners to not only undertake program management in an effective manner, but also to disseminate the results and assist with their adoption and, when appropriate, commercialisation. Over the course of the year, the FRDC will continue to collaborate and work with its stakeholders.

Stakeholder research priorities

One of the primary challenges for the FRDC is to gain a solid understanding of the needs and priorities of its stakeholders — many of whom come from a diverse range of sectors and operations. FRDC in developing the National RD&E Strategy and its RD&E Plan has consulted widely with a majority of these groups. In addition the FRDC has undertaken industry research to build on this knowledge. While there are common, national issues, each sector faces unique challenges and has specific research, development and extension needs, and these vary around Australia.

To ensure a balanced portfolio, and to align with industry research priorities, the large majority of project applications are reviewed by the FRABs, and where possible industry and management is directly engaged and integrated into the project delivery.

The Australian Government

The Minister for Agriculture Fisheries and Forestry and the Parliamentary Secretary are integral to the running of the FRDC. The Minister, the Parliamentary Secretary and their Department help set out priorities that need to be addressed.

Australian Fisheries Management Forum (AFMF)

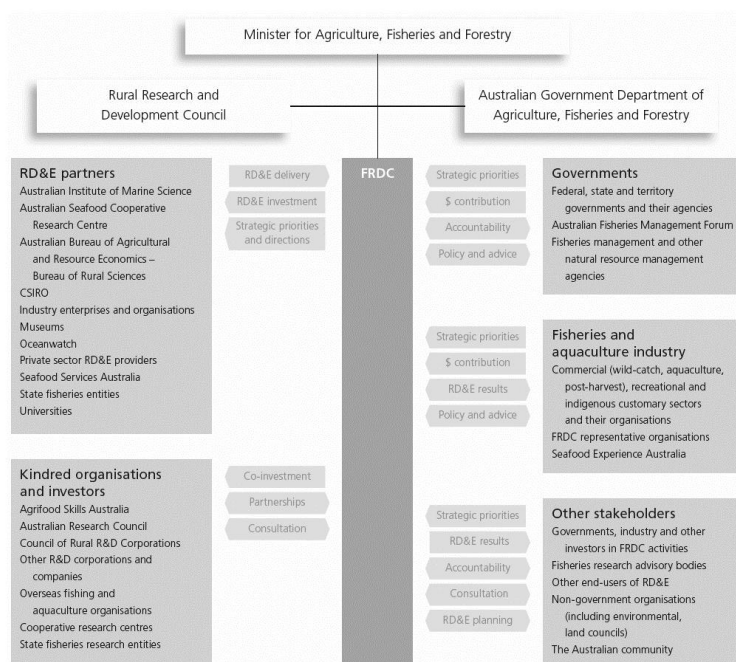
AFMF comprises the heads/CEOs of the Australian and state and territory government agencies responsible for the management of fisheries. The AFMF discusses issues relating to fisheries and aquaculture management. The FRDC has worked closely with this group to develop, and now implement, the National Fishing and Aquaculture RD&E Strategy.

Consultation with representative organisations

The FRDC has three representative organisations with which it will consult over the course of 2011-12. They are the:

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

Under section 15(2) of the *PIERD Act 1989* 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 FRDC and each of its representative organisations. The FRDC has budgeted \$30,000 on such consultation in 2011-12.



Not all entities involved with the FRDC are shown.

For simplicity, only the relationships between the FRDC and other entities are shown — not relationships between those entities.

Many of the entities have multiple relationships with the FRDC: for example, CSIRO is a co-investor and a research provider.

In addition the FRDC invests in RD&E projects with its representative organisations. All projects currently under contract with the FRDC representative bodies at the commencement of 2011-12 are:

Commonwealth Fisheries Association – Nil projects

National Aquaculture Council

2009/303	Australasian Aquaculture Conference 2010 to 2014	\$240,000
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Recfish Australia

2007/227	Recfishing Research: National Strategy for Recreational Fisheries RD&E	\$358,880
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2011/502	RFAC: Australian National Recreational Fishing Conference 2012	\$120,000
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The project values are totals – (whole of project life) (most projects run 18-36 months) and may not be what is expended on the project during the course of the year. The actual expenditure will be reported in the FRDC Annual Report.

Consultation with levy organisations – Australian Prawn Farmers Association

The FRDC administers a research and development levy on behalf of the Australian Prawn Farmers' Association (APFA). The FRDC's investments in prawn farming research and development is driven by the APFA's RD&E Plan. FRDC and the APFA enjoy a very close working relationship. The APFA has nominated that the majority of its investment is to be through co-investment with the Seafood CRC. The APFA has a lead role with FRDC in ensuring its priorities are met. The table below outlines the financial record of the relationship:

Year	2007-08 Actual	2008-09 Actual	2009-10 Actual	2010-11 Budget	2011-12 Budget	2012-13 Budget	2013-14 Budget
APFA contribution	\$103,835	\$111,931	\$144,155	\$160,000	\$150,000	\$180,000	\$190,000
FRDC expenditure on projects	\$302,584	\$302,287	\$266,089	\$311,325	\$263,623	\$230,582	\$178,880

The APFA has been consulted in the development of this AOP. FRDC is investing with APFA in:

- research that improves price/kg;
- research that improves growth per week; and
- research that improves days to harvest/standing crop capacity.

Sector industry bodies

The FRDC has continued its close relationship with the National Seafood Industry Alliance. It will build upon the partnerships established with individual industry sectors. It currently invests in, and partners, entities such as Southern Rocklobster Ltd, Australian Southern Bluefin Tuna Industry Association, Tasmanian Salmonid Growers' Association, and both the Prawn and Barramundi Farmers' Associations.

Rural research and development corporations

The FRDC will continue to partner with other RDCs on a range of activities to enhance joint strategic outcomes. Most significant of these include climate change; evaluation of RD&E and the "Appetite for Excellence" (a chef, waiter and restaurateur competition) primary producer's tour. Not only will the FRDC partner other RDCs at the project level, but it will also work more broadly to collaborate in functional areas. The FRDC will continue to attend meetings of the Council of Rural Research and Development Corporations (CRRDC), as well as meetings of Executive Directors, Business Managers and Communications Managers. In conjunction with other RDCs, the FRDC will assist in coordinating sponsorship and participation at events such as the Outlook and producer conferences. Additionally, the FRDC will continue to provide advice and services in relation to project management and the FRDC project management software — OmniFish.

Seafood Services Australia

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

Seafood Cooperative Research Centre

The FRDC is a core participant of the Seafood CRC whose research program aims to increase the profitability and value of the Australian seafood industry, increase access to premium markets and increase demand for Australian seafood. These priorities are aligned with the FRDC's RD&E programs, in particular Program 2: Industry. This partnership is one innovative way the FRDC extends its activities further along the value chain and enhances its focus on development.

Research Partners

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

- the Department of Agriculture Fisheries and Forestry (DAFF)
- the Australian Fisheries Management Authority (AFMA)
- state fisheries research centres
- the Commonwealth Scientific and Industrial Research Organisation (CSIRO)
- universities
- cooperative research centres (CRCs)
- Seafood Services Australia (SSA)
- other rural RDCs and companies
- industry groups
- co-investors in the private sector.

The Australian Fishing Industry

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

- **commercial sector**; comprising of wild catch fishing, aquaculture and through-chain activities undertaken by seafood importers, processors, manufacturers, handlers and retailers
- **recreational fishing**, which includes the tackle, tour guides and charter sectors;
- **Indigenous customary fishers**.

The "fishing industry" is further defined in the FRDC Regulations 1991 under the PIERD Act 1989 such that it includes any industry or activity carried on in or from Australia concerned with:

- taking; or
 - culturing; or
 - processing; or
 - preserving; or
 - storing; or
 - transporting; or
 - marketing; or
 - selling;
- of fish or fish products.

The commercial sector comprises approximately 120 wild-catch fisheries and 70 aquaculture species. Commercial seafood and products (e.g., pearls) were valued at \$2.2 billion in 2008–09. The recreational sector has 3.4 million participants, who were estimated in a 2001 survey to expend \$1.9 billion on their fishing. Aboriginal and Torres Strait Islander people participate in commercial and recreational fishing, as well practice customary fishing. The legal rights around indigenous fishing are being refined over time and some aspects are now part of existing legislation and courts decisions.

Employment statistics (Australian Bureau of Statistics (ABS)) for the fishing industry indicate that commercial fishing employment in 2008–09 was 9,215 persons.

Demand for seafood is rising in Australia because of increasing affluence and increasing awareness of seafood's prominent role in a healthy diet. In Asian markets consumption is also increasing with the growth of the middle class, especially in China and India. This will place demands on the supply of a limited resource, leading to increases in price.

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

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

Top five fisheries in 2008-09, by volume		Top five fisheries in 2008-09, by value	
Australian sardine	31,500 tonnes	Rock lobster	\$404 million
Salmonids	29,700 tonnes	Salmonids	\$323 million
Prawns	23,900 tonnes	Prawns	\$289 million
Oysters	14,100 tonnes	Abalone.	\$188 million
Tuna	13,700 tonnes	Tuna	\$187 million

Planned Outputs for 2011-12

Environment

Australia's maritime zone is one of the largest in the world covering about 13.6 million square kilometres: Commonwealth, 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 resources.

Investment Budget for 2011-12

During 2011–12, \$9.0 million (about 40 per cent of the total RD&E investment) will be invested in RD&E activities within this program.

Strategies	Priority area	Performance indicator	Targets
Biosecurity and aquatic animal health	Prevent and manage disease incursions Develop diagnostic procedures and techniques to rapidly detect and identify pathogens. Develop protocols to ensure biosecurity within the fishing and aquaculture industry to mitigate and control disease Improve access to fit-for-purpose aquacultural veterinary chemicals and vaccines.	Development and dissemination of protocols, techniques and technologies to mitigate and minimise the impact of disease outbreaks. Development of knowledge to assist industry to register vaccines and veterinary chemicals.	Development of diagnostic tests.
Habitat and ecosystem protection	Mitigate the impacts of fishing, aquaculture, pollution, habitat destruction and land-based activities, and non-fishing occurrences, on fish, aquatic habitats and ecosystems. Develop and adapt technologies to reduce by-catch; impacts on threatened, endangered and protected species; and the effects of fishing on aquatic habitats. Enhance recreational fishing experiences through enhancement of fish habitats. Provide information to the community to demonstrate improvements in the fishing and aquaculture industry's environmental performance.	Demonstrated improved sustainability performance from the use of RD&E outputs. Development of innovative technologies to reduce fishery take and interaction with by-catch and with threatened, endangered and protected species.	Two reports on improving management of by-catch and in particular Threatened, Endangered and Protected Species (TEP).

Climate change	<p>Understand the vulnerability of fish stocks and ecosystems to climate change.</p> <p>Adapt to the impacts of climate change, including the impacts on resource access.</p> <p>Reduce the greenhouse gas emissions of the fishing and aquaculture industry, with a focus on energy efficiency.</p> <p>Develop tools to improve cross-jurisdictional resource access and management as part of adaptation to climate change.</p>	<p>Improvement in understanding of the impacts of climate change that leads to adaptation by fisheries management and industry.</p> <p>Development of mitigation methods to reduce greenhouse gas emissions of industry.</p>	<p>Two reports outline adaption measures are used by industry.</p>
Ecologically Sustainable Development	<p>Improve their knowledge of key biological attributes for target species.</p> <p>Develop practical tools that implement ecosystem-based fisheries management and incorporate understandings of the cumulative impacts of fishing into fisheries management plans.</p> <p>Incorporate improved understanding of environmental factors, including oceanographic and ecological processes, into fisheries management.</p> <p>Develop tools and technologies to acquire environmental, economic and social data underpinning harvest strategy evaluation systems, especially for data-poor fisheries.</p> <p>Quantify the environmental carrying capacity of aquaculture operations develop and implement standardised environmental impact assessments and statements for the aquaculture sector.</p> <p>Implement environmental management systems and acquire third-party certification, including eco-labelling.</p> <p>Improve recreational sector performance based on acquiring information about sustainable, ethical fishing; motivations; demographics; participation; fishing methods; and catch and-effort.</p>	<p>Development of mechanisms and technologies to collect economic, environmental and social data to inform management processes.</p> <p>Improvement in knowledge of the relationship between environmental processes and known biological processes.</p> <p>Development of techniques for incorporation of ecosystem-based fisheries management in fisheries.</p> <p>Development of knowledge to help the industry to meet environmental standards.</p>	<p>One fishery incorporating oceanographic processes in fisheries management</p> <p>Assessment methods for data poor fisheries extended to relevant stakeholders</p>

Examples of projects with funds to be expended in 2011-12

Project Id	Project Title	Cost (\$)
2011/020	Developing cost-effective industry based techniques for monitoring puerulus settlement in all conditions: trials in southern and western Tasmania	\$78,310
2011/018	The biological oceanography of Western Rock Lobster larvae - Part 2	\$180,000
2011/017	Spawning sources, movement patterns, and nursery area replenishment of spawning populations of King George whiting in south-eastern Australia - closing the life history loop	\$180,000
2011/016	Location and transport of early life stages of Dhufish (<i>Glaucosoma hebraicum</i>)	\$215,015
2011/010	Reducing the environmental impacts and improving the profitability of prawn trawling through a structured framework of anterior gear modifications	\$199,725
2011/009	Assessment of by-catch reduction strategies to reduce interactions between species of conservation interest and commercial fishing nets	\$95,096
2011/004	Aquatic Animal Health Subprogram: development of improved molecular diagnostic tests for <i>Perkinsus olseni</i> in Australian molluscs	\$68,583
2010/564	FRDC-DCCEE: pre-adapting a Tasmanian coastal ecosystem to ongoing climate change through reintroduction of a locally extinct species	\$53,950
2010/554	FRDC-DCCEE: effects of climate change on reproduction, larval development, and population growth of coral trout (<i>Plectropomus</i> spp.)	\$91,700
2010/535	FRDC - DCCEE: management implications of climate change effect on fisheries in Western Australia	\$118,646
2010/536	FRDC-DCCEE: beach and surf tourism and recreation in Australia: vulnerability and adaptation	\$232,050
2010/534	FRDC-DCCEE: ensuring that the Australian Oyster Industry adapts to a changing climate: a natural resource and industry spatial information portal for knowledge action and informed adaptation frameworks	\$79,800
2010/533	FRDC-DCCEE: human adaptation options to increase resilience of conservation-dependent seabirds and marine mammals impacted by climate change	\$151,430
2010/057	Tactical Research Fund: Using innovative techniques to analyse trends in abundance for non-target species	\$27,294
2010/053	Tactical Research Fund: assessing technology changes and risks to the sustainable management of deepwater line fisheries in southern Queensland	\$31,500
2010/050	A regional socioeconomic evaluation of gamefishing in eastern Australia	\$184,620
2010/049	Evaluating the use of on board cameras in the Shark Gillnet Fishery in South Australia	\$57,692
2010/047	The biological oceanography of Western Rock Lobster Larvae	\$201,790
2010/046	Improving the management of by-catch: development and testing of standards for the effective mitigation of by-catch in Commonwealth fisheries	\$74,476
2010/043	Development of a user-friendly desktop tool based on existing Atlantis runs	\$45,295
2010/042	Improving gear selectivity in Australian mud crab fisheries	\$14,600
2009/024	Mapping the distribution and movement of gulper sharks, and developing a non-extractive monitoring technique, to underpin a stock rebuild within a multi-sector fishery region off southern and eastern Australia	\$217,558
2009/021	Movement patterns and stock structure of Australian sardine (<i>Sardinops sagax</i>) off South Australia and the East Coast: implications for future stock assessment and management	\$49,760
2009/020	Evaluation of population genetic structure in the western rock lobster	\$33,196
2009/019	Evaluating the potential use of change-in-ratio and index removal techniques for determining harvest rates and efficiency increases in the Western Rock Lobster Fishery	\$41,200

Industry

Demand for high-quality seafood is predicted to outstrip supply in both domestic and export markets. Similarly in the recreational and customary sectors the demand for high-quality fishing experiences will outstrip supply. There is a need to increase both the production and the value of the catch, and to take advantage of future opportunities. For the commercial sector, business profitability and international competitiveness is an overriding concern. This program aims to assist all sectors improve their overall performance.

Investment budget for 2011-12

During 2011–12, \$9.7 million (about 43 per cent of the total RD&E investment) will be invested in RD&E activities within this program.

Strategies	Priority area	Performance indicator	Targets
Governance & regulatory systems	<p>Reduce the costs, complexity and duplication inherent in existing regulatory systems.</p> <p>Participate more collaboratively in fisheries and aquaculture management, including co-management.</p> <p>Develop fine-scale and spatial approaches to improve local fisheries management.</p> <p>Develop efficient multi-fishery and multi-sector fisheries management arrangements when more than one jurisdiction is spanned.</p> <p>Develop fisheries management that enables maximum economic yield.</p>	<p>Development of processes and technologies to improve the efficiency of governance and regulatory systems for fishing and aquaculture.</p> <p>Development of methods to incorporate economic knowledge into fisheries management.</p>	<p>Two fisheries adopt co-management arrangements.</p> <p>One remote electronic tool developed and trialled.</p>
Resource access and allocation	<p>Develop improved processes and technologies to quantify rights between users and mechanisms for allocating shares.</p> <p>Develop methods to value the rights of recreational and indigenous customary users.</p> <p>Increase knowledge among diverse groups of stakeholders about each other's expectations about resource access and allocation.</p>	<p>Development of processes for efficient, transparent allocation of shares and associated property rights for all aquatic resource users.</p>	<p>Two new projects to look at allocation and access issues.</p>

Strategies	Priority area	Performance indicator	Targets
Production, growth and profitability	<p>Increase and diversify opportunities for the aquaculture sector and other sectors.</p> <p>Improve productivity through operational efficiencies, new technologies and better utilisation of energy sources, and reduction of wastage.</p> <p>Develop new business opportunities.</p> <p>Develop improved business models and building business modelling skills.</p>	<p>Development of knowledge, processes and technologies to improve productivity and profitability of the commercial sectors.</p> <p>Development of knowledge and technologies in the areas of domestication and breeding genetics to support growth of the aquaculture sector.</p>	<p>One new product developed.</p> <p>New breeding program implemented.</p>
Consumers, products and markets	<p>Build efficient, effective seafood value chains.</p> <p>Develop new products and processes that meet the demands of consumers.</p> <p>Improve trade and market access.</p> <p>Improve recognition of Australian products internationally and domestically.</p>	<p>Development of knowledge and technologies to support the industry's development of new products.</p> <p>Development of knowledge and technologies to improve seafood value chains and support trade and market access.</p>	<p>Market research undertaken on one market.</p> <p>One supply chain mapped and recommendations made.</p>
Value from aquatic resources	<p>Incorporate indigenous customary practices into fisheries management.</p> <p>Enhance experiences through adoption of best-practice fishing, including catch-and-release practices.</p> <p>Enhance fish stocks.</p> <p>Advance economic self-reliance of indigenous communities based on the use of fish resources.</p> <p>Quantify the social, health and economic benefits of recreational and indigenous customary fishing.</p>	<p>Development of knowledge, processes and technologies to understand and enhance the societal and personal values obtained from recreational and indigenous customary fishing.</p> <p>Development of knowledge regarding indigenous customary fishing practices, and processes to incorporate this knowledge into fisheries management.</p>	

Examples of projects with funds to be expended in 2011-12

Project Id	Project Title	Cost (\$)
2011/216	Co management review	\$5,000
2011/215	Resource access and resource allocation	\$5,000
2011/209	Optimising a novel prawn trawl design for minimum drag and maximum eco-efficiency	\$97,589
2011/201	Implementing a spatial assessment and decision process to improve fishery management outcomes using geo-referenced diver data	\$271,261
2011/200	Setting economic target reference points for multiple species in mixed fisheries	\$159,629
2010/229	Tactical Research Fund: Empowering Industry RD&E: Assisting fishing businesses adjust to implementation of quota control management in their fishery	\$48,300
2010/228	Tactical Research Fund: Developing a dynamic regional brand - focus on flavour	\$22,476
2010/226	An assessment of the threats to marine biodiversity and their implications for the management of State and Commonwealth fisheries	\$74,800
2010/222	Tactical Research Fund: A study of the composition, value and utilisation of imported seafood in Australia	\$24,140
2010/220	Tactical Research Fund: Maintaining postharvest quality of key species from the Great Australian Bight Trawl Sector	\$52,410
2009/722	Seafood CRC: development and evaluation of yellowtail kingfish consumer products	\$129,900
2009/743	Seafood CRC: Incorporation of selection for reproductive condition, marketability and survival into a breeding strategy for Sydney rock oysters and Pacific oysters	\$116,989
2009/770	Seafood CRC: chilled pre-packaged seafood category development	\$307,449
2009/773	Seafood CRC: dried WA seafood products for the Asian market: a pilot study	\$17,518
2009/774	Seafood CRC: harvest strategy evaluations and co-management for the Moreton Bay trawl fishery	\$65,604
2009/775	Seafood CRC: prevention of muddy taints in farmed barramundi	\$28,821
2008/206	The methodical introduction of high strength netting to the prawn trawling industry in Queensland	\$45,720
2008/202	Towards reliable hatchery-produced quality blue mussels: an integrated approach to optimising supply	\$36,819
2008/902	Seafood CRC: aquaculture innovation hub	\$63,850
2008/903	Seafood CRC: Understanding Yellowtail Kingfish	\$166,350
2008/905	Seafood CRC: Australian seafood compositional profiles portal	\$12,441
2008/906	Seafood CRC: Seafood trade and market access portal	\$19,199

Communities

The fishing industry forms an integral part of many rural and regional communities. For the long term sustainability of the fishing industry, it is important the interactions and co-dependence between the community and industry understood.

Investment budget for 2011-12

During 2011–12, \$0.3 million (about 1.5 per cent of the total RD&E investment) will be invested in RD&E activities within this program.

Strategies	Research area	Performance indicator	Targets
Resilient and supportive communities	<p>Improve the resilience of the fishing and aquaculture industry and the communities in which the industry operates.</p> <p>Understand and influence the perceptions that the community holds about the fishing and aquaculture industry and improve interactions between them.</p> <p>Increase the community's capacity to accept and incorporate higher levels of fishing and aquaculture activity.</p> <p>Address the social impacts of change in industry business environments.</p>	<p>Development of knowledge to better inform the community's perceptions of the industry and to increase support for the industry.</p> <p>Development of knowledge that can help the industry to adapt to change.</p>	One report published.

Examples of projects with funds to be expended in 2011-12

Project Id	Project Title	Cost (\$)
2010/304	Impact of management changes on the viability of Indigenous commercial fishers and the flow on effects to their communities: case study in NSW.	\$16,417
2009/300	Empowering Industry R&D: Developing an industry driven R&D model for the Australian fishing and seafood industry - partnerships to improve efficiency, profitability and performance	\$64,606
2010/040	Developing and testing social objectives for fisheries management	\$72,150
2009/041	Fisheries Social Sciences Research Coordination Program	\$85,860

People development

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

Investment budget for 2011-12

During 2011–12, \$2 million (about 9.5 per cent of the total RD&E investment) will be invested in RD&E activities within this program.

Strategies	Research area	Performance indicator	Targets
Leadership development	Develop industry leadership across all stakeholder groups. Move to co-management of fisheries. Build industry capacity to drive change, including to manage resource conflicts.	Provision of knowledge and opportunities to develop leadership skills and diversity across all sectors of the industry and across aligned stakeholder groups, including researchers and resource managers. Development of knowledge, skills and processes to support industry to engage in debate, adapt to change, and move toward co-management of fisheries.	17 participants complete leadership courses
Workforce development	Plan for future workforce needs. Improve workplace health and safety. Identify and address reasons for poor uptake of training and education in the fishing industry. Identify education and training needs and preferred delivery mechanisms.	Development of knowledge and tools to meet future workforce and skill needs.	1 health and safety project funded through Collaborative Partnership for Farming and Fishing Health and Safety
Innovation skills	Be responsive towards new practices and innovation. Develop relationships that encourage new ideas and make more effective use of scientific and community resources, knowledge and skills. Ensure human RD&E capability is available to meet end-users' future needs.	Mechanisms and tools to attract and nurture RD&E capability in priority areas. Opportunities to acquire insights, knowledge and skills to create innovative, market-driven enterprises and organisations.	15 participants complete bursary program

Examples of projects with funds to be expended in 2011-12

Project Id	Project Title	Cost (\$)
2011/403	Young Future Leaders in Recreational Fishing	\$142,800
2011/402	People development program: Enabling productivity and efficiency gains in Australian rock lobster fisheries – the 2011 trans-Tasman 7th Rock Lobster Congress.	\$2,000
2011/401	Marine discovery centres Australia annual network meeting	\$10,800
2010/403	People development program: Linking Australian schools with Australia's primary industries	\$70,000
2010/402	Southern Rocklobster National RD&E Planning and Management	\$81,429
2010/400	Tactical Research Fund: Artificial Reefs - Design and Monitoring Standards Workshops	\$14,000
2009/712	Seafood CRC: future harvest theme leadership	\$27,434
2009/334	People development program: Partner with DEEWR, Universities and other RDC's in the National Primary Industry Centre for Science Education (PICSE)	\$60,000
2009/330	Tactical Research Fund: SETFIA Accreditation of Commonwealth Trawl Sector skippers toward improved environmental operation in fishery	\$34,031
2009/328	Tactical Research Fund: Seafood Industry Partnerships in Schools - Program Pilot, Tasmania	\$29,448
2009/324	People Development Program: Nuffield Scholarship for an Aquaculture and/or Fish producer	\$50,000
2009/322	People Development Program: Building seafood industry representational capacity	\$74,571
2009/303	Australasian Aquaculture Conference 2010 to 2014	\$60,000
2008/313	Collaborative partnership for farming and fishing health and safety	\$50,000
2008/308	Australian Rural Leadership Program	\$100,000
2008/306	Building economic capability to improve the management of marine resources in Australia	\$127,543
2008/304	Establishment of self-sustaining facility for fisheries modelling and multivariate analysis, and for effective management of extremely large fisheries databases.	\$30,000

Extension and Adoption

Knowledge arising from R&D will be used and transformed into appropriate mediums to support stakeholder decision making, assist with achieving their objectives, and inform the broader community.

Investment budget for 2011-12

During 2011–12, \$1.4 million (about 6 per cent of the total RD&E investment) will be invested in RD&E activities within this program.

Strategies	Research area	Performance indicator	Targets
Extension and Adoption	<p>Have timely access to RD&E project outputs and other knowledge.</p> <p>Be part of appropriate knowledge management systems that build extension and adoption capacity.</p>	Increase in rates of adoption.	

Examples of projects with funds to be expended in 2011-12

Project Id	Project Title	Cost (\$)
2011/504	Evaluation of completed RD&E projects	\$77,930
2011/503	FRDC-DCCEE: climate change adaptation - building community and industry knowledge	\$15,000
2011/502	RFAC: Australian National Recreational Fishing Conference 2012	\$93,000
2010/302	Equipping the mud crab industry with innovative skills through extension of best practice handling	\$104,701
2010/321	Development of National Extension and Adoption Framework for Fishing and Aquaculture	\$2,500
2010/305	Extension of OH&S and Quality Index project outputs to seafood industry across Australia	\$20,453
2009/333	Tactical Research Fund: Review and extension of conservation and sustainability-focused initiatives which have been funded, supported or undertaken by Australia's recreational fishing sector	\$7,285

Management and Accountability

The FRDC delivers RD&E services ethically, efficiently and cost effectively.

FRDC's ISO-certified quality management system encompasses all these activities. As a quality organisation the FRDC recognises the importance of reporting on the efficiency with which its research investments are delivered, as well as on their effectiveness. The FRDC will work with DAFF and the other RDCs to develop an approach to measuring efficiency that will be incorporated into its performance measurement framework.

Management and accountability elements

Since management and accountability arrangements contribute to the planned outcome of the FRDC RD&E programs, they are crucial to the FRDC's effectiveness and efficiency. The elements are detailed below.

Corporate governance

The FRDC aims to have a best practice system of corporate governance. These governance arrangements are underpinned by legislation and the adoption of best practice, and are documented through a range of policies and ISO certified procedures that the FRDC regularly updates and reports to the Australian Government each year through its annual report. The FRDC is subject to both internal and external quality audits, and financial audits.

Business planning

The FRDC maintains a Corporate Plan and business strategy aligned to government and industry needs that are understood and supported by stakeholders. Complementing this process, the FRDC maintains a five-year Strategic Research, Development and Extension Plan - *Investing for Tomorrow's Fish* 2010-2015; thus ensuring on-going research, development and extension builds on, and drives innovation in the fishing industry.

The FRDC maintains an Australia-wide system of FRABs, that assist in determining research priorities and assessments, and provide stakeholder engagement for the FRDC.

During 2011-12 the FRDC will investigate co-locating with the other Canberra-based RDCs. This is being done with a view to capturing the efficiencies generated by shared services.

Information management systems

The FRDC aims to provide business systems that meet both its own and stakeholders requirements. Investment in this area has recently been increased to update the systems' capacity to handle an increasingly complex array of project management issues and reporting requirements. Increasingly the FRDC is being engaged to manage the activities of other organisations with these enhanced systems. The FRDC's website is also used to promulgate its research reports.

Quality system

The FRDC is a quality-driven organisation, with a focus on leadership, continuous improvement, and accreditation. The FRDC is an accredited organisation under ISO9001:2008 and maintains the policies, processes and procedures required for that accreditation.

Corporate communications

The FRDC aims to inform all stakeholders of its goals, strategies and achievements; and provide them access to information that will help them. A wide range of corporate communication avenues are used, including printed publications (FISH magazine), web-based, e-mail and media outlets. Direct communication through committees and meetings is used, as are regional and port visits.

Risk management

FRDC aims to ensure its risks and opportunities are identified, assessed and appropriately managed. It maintains a Finance, Audit and Risk Management Committee with an independent member; and at each meeting the FRDC's risk profile is discussed and updated, and any necessary remedial action set in train.

Finance and administration

The FRDC aims to have best practice accounting and investment functions, managed in accordance with board and statutory requirements. The FRDC has to satisfy all government requirements; (legislative and policy based), and is subject to audit by the Australian National Audit Office.

Human resource management

The FRDC aims to have best practice in human resource management, clearly focused on delivering the FRDC's business objectives.

Deliverables and services for 2011-12

- Meet statutory and Australian Government requirements.
- Undertake benefit cost analyses to quantify the effectiveness of the FRDC's investments.
- Provide access to information through website, publications and reports.
- Support workshops, forums and conferences to encourage debate, discussion and adoption of research funded by the FRDC.

Key Performance Indicators for 2011-12

KPIs will be measured by reports on performance against requirements and better practice.

<i>Key performance Indicators</i>	<i>2011-12</i>	<i>2012-13</i>	<i>2013-14</i>	<i>2014-15</i>
Projects focus on the FRDC Board's assessment of priority research and development issues.	95%	95%	95%	95%
Projects are assessed as meeting high standards/peer review requirements for improvements in performance and likely adoption	95%	95%	95%	95%
Maintain ISO9001:2008 accreditation.	1	1	1	1
Submit planning and reporting documents in accordance with legislative and Australian Government requirements and timeframes.	100%	100%	100%	100%
Implement best practice governance arrangements to promote transparency, good business performance, and unqualified audits.	100%	100%	100%	100%
Demonstrate the benefits of RD&E investments by positive benefit cost analysis results.	100%	100%	100%	100%

Performance evaluation

Evaluating the impact of its RD&E investments, and reporting to stakeholders on performance are part of the FRDC's core business.

The FRDC has adopted the rural RDC evaluation methodology. Over the past 18 months working with AgTrans Research, FRDC has completed an assessment of the benefits of its research investment from 2003 to 2008. This comprised a total of \$96 million investment and 440 completed project across 32 clusters. Eighteen were randomly selected for evaluation. The benefits from total RD&E investment (measured over 30 years using a discount rate of 5%) in 18 randomly selected clusters of investment completed during the past five years was estimated as \$1,200 million. The 18 cluster analyses and subsequent report were prepared by Agtrans Research (economics consultants and strategic policy advisors) and are available at the FRDC website — www.frdc.com.au. In these clusters, FRDC investment was 38.9% of total investment of \$214 million (present value terms). The net present value, \$986 million, gave a benefit–cost ratio of 5.6:1 for each dollar invested by the FRDC and its partners. This was lower than the 10.5:1 recently identified for all rural R&D corporations (over similar but not identical periods), reflecting the high proportion of fishing and aquaculture RD&E that has a spill-over into public good.

For example FRDC funded RD&E has:

- contributed to Australian fisheries management being regarded as among the best in the world
- contributed to fisheries such as the Spencer Gulf Prawn Fishery and the Northern Prawn Fishery being regarded by the United National Food and Agriculture Organization as the world's most sustainable prawn trawl fisheries
- contributed to the development of the propagation of Southern Bluefin Tuna
- established principles for the implementation of fisheries co-management
- established the Ecologically Sustainable Development (ESD) subprogram, which led to the incorporation of a reporting and assessment process for ESD across Australian fisheries; uptake by fisheries management agencies overseas; and further incorporation through the ecosystem-based fisheries management process.
- addressed post-harvest market failure through the funding of Seafood Services Australia
- addressed ongoing whole-of-supply-chain and industry innovation issues through funding of Seafood CRC

A number of lessons have been learnt for future investment, and evaluations; and a full list of them is in the full report. They are summarised below:

Lessons relating to evaluation

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

Lessons relating to future investment and management

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

A list of all benefit cost evaluations and the reports are available on the FRDC website.

Future assessments

The FRDC will implement a fourth phase of BCAs to start an ongoing continual assessment of the performance of programs and projects against its strategies and stakeholders' priorities by:

- periodically surveying research partners, representative organisations and the Australian Government to measure their satisfaction with the effectiveness of FRDC activities
- conducting impact assessments to evaluate the benefits that FRDC-supported RD&E is delivering to the fishing industry, as well as the benefits that flow on to the wider community.
- conducting evaluations of milestone reports submitted for each FRDC project.

Australian Government Research Priorities

In 2007 the Australian Government updated its Rural Research Priorities. The new set of Rural Research Priorities build on those first introduced by the Australian Government in 1994 and complement the Australian Government's National Research Priorities. The government requires FRDC to incorporate them into its planning and report activities against them. This section sets out those priorities and shows the predicted FRDC expenditure against both sets of priorities. More information on priority setting can be found on pages 6 and 7 of this document.

The following table outlines the FRDC anticipated expenditure against the National and Rural Research Priorities. These have been mapped against the five FRDC programs.

The **National and 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 following table)

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

Total investment 2011–12 — Government research priorities attributed to each RD&E Program (\$ and %)

Rural Research Priorities

<i>Rural Research and Development Priorities (RRDP)</i>	Program 1: Environments		Program 2: Industries		Program 3: Communities		Program 4: People		Program 5: Extension and Adoption		Total expenditure
	\$000	%	\$000	%	\$000	%	\$000	%	\$000	%	\$000
Productivity and Adding Value	292	1.30%	3,424	15.25%	108	0.48%	419	1.87%	60	0.27%	4,301
Supply Chain and Markets	97	0.43%	1,691	7.53%	46	0.21%	413	1.84%	77	0.34%	2,324
Natural Resource Management	5,923	26.38%	2,788	12.42%	82	0.37%	661	2.95%	264	1.17%	9,719
Climate Variability and Climate Change	1,463	6.52%	46	0.20%	78	0.35%	189	0.84%	49	0.22%	1,825
Biosecurity	443	1.97%	519	2.31%	23	0.10%	239	1.06%	40	0.18%	1,264
Innovation Skills	68	0.30%	383	1.71%			212	0.94%	858	3.82%	1,521
Technology	694	3.09%	802	3.57%							1,496
Other research											
TOTAL											22,450

National Research Priorities

<i>National Research Priorities (NRP)</i>		Program 1: Environments		Program 2: Industries		Program 3: Communities		Program 4: People		Program 5: Extension and Adoption		Total expenditure
		\$000	%	\$000	%	\$000	%	\$000	%	\$000	%	
An environmentally sustainable Australia	A1											
	A2	653	2.91%	2,087	9.30%			16	0.07%	165	0.74%	2,922
	A3											
	A4			18	0.08%					1	0.01%	19
	A5	5,919	26.36%	1,305	5.81%	101	0.45%	800	3.56%	508	2.26%	8,632
	A6											
	A7	1,265	5.64%			101	0.45%			59	0.26%	1,425
Promoting and maintaining good health	B1											
	B2											
	B3	21	0.09%	261	1.16%					17	0.08%	299
	B4	59	0.26%			112	0.50%	800	3.56%	62	0.27%	1,032
Frontier technologies for building and transforming Australian industries	C1	490	2.18%	522	2.32%			27	0.12%	62	0.28%	1,101
	C2	327	1.45%	2,870	12.78%					192	0.85%	3,388
	C3	163	0.73%	522	2.32%					41	0.18%	726
	C4	163	0.73%	120	0.53%					17	0.08%	300
	C5			1,044	4.65%			267	1.19%	79	0.35%	1,389
Safeguarding Australia	D1											
	D2											
	D3	327	1.45%	1,044	4.65%	22	0.10%	267	1.19%	98	0.44%	1,757
	D4											
	D5											

Notes: (a) When looking at the RD&E expenditure estimates across RRP and NRP, note that expenditure estimates differ for similarly themed priorities as a result of differences between descriptors. (b) National Research Priorities and their associated Goals are listed above.

Budget Statements for 2011-12

Excerpt from 2011-2012 Portfolio Budget Statements

Table 1.1: Agency Fisheries Research & Development Corporation Resource Statement — Budget Estimates for 2011-12 as at Budget May 2011

Source	Estimate of prior year amounts available in 2011-12 \$'000	Proposed at Budget 2011-12 \$'000	Total Estimate 2011-12 \$'000	Actual available appropriation 2010-11 \$'000
Opening balance	7,331	-	7,331	7,935
REVENUE FROM GOVERNMENT				
Special Appropriations ¹ (<i>Department of Agriculture Fisheries & Forestry</i>)				
Primary Industries and Energy Research and Development Act 1989, s. 30A(3) - Fisheries R&D Corporation	-	16,297	16,297	16,529
Total special appropriations		16,297	16,297	16,529
Total funds from Government	-	16,297	16,297	16,529
FUNDS FROM INDUSTRY SOURCES				
Levies ²	-	150	150	162
<i>less amounts paid to the CRF</i>	-	(150)	(150)	(162)
Industry contributions	-	8,544	8,544	8,372
Total	-	8,544	8,544	8,372
FUNDS FROM OTHER SOURCES				
Interest	-	275	275	325
Sale of goods and services	-	105	105	110
Other	-	800	800	168
Total	-	1,180	1,180	603
Total net resourcing for agency	7,331	26,021	33,352	33,439

CRF - Consolidated Revenue Fund

¹ FRDC is not directly appropriated as it is a CAC Act body. Appropriations are made to FMA Agency DAFF which are then paid to FRDC and are considered 'departmental' for all purposes.

² The levies collected under The *Primary Industry Levies and Charges Collection Act 1991* are remitted to DAFF and transferred to the CRF. An equivalent amount to the FRDC management levy is paid by DAFF to FRDC under a special appropriation under the PIERD Act 1989.

Reader note: All figures are GST exclusive.

Table 2.1: Budgeted Expenses and Resources for Outcome 1

Outcome 1: Increased knowledge that fosters sustainable economic, environmental and social benefits for the Australian fishing industry; including indigenous, recreational, commercial and aquaculture sectors, and the community; through investing in research, development and adoption.	2010-11 Estimated actual expenses	2011-12 Estimated expenses
	\$'000	\$'000
Program 1.1: Fisheries Research & Development Corporation		
Special Appropriations		
Revenue from Government	16,527	16,295
Revenues from industry sources	7,970	7,544
Revenues from other independent sources	1,507	2,484
Total for Program 1.1	26,004	26,323
Outcome 1 Totals by Resource type		
Special Appropriations		
Revenue from Government	16,527	16,295
Revenues from industry sources	7,970	7,544
Revenues from other independent sources	1,507	2,484
Total expenses for Outcome 1	26,004	26,323
	2010-11	2011-12
Average Staffing Level (number)	12	11

Table 3.2.1 Comprehensive Income Statement (Showing Net Cost of Services)

for the period ended 30 June	Estimated actual 2010-11	Budget estimate 2011-12	Forward estimate 2012-13	Forward estimate 2013-14	Forward estimate 2014-15
	\$'000	\$'000	\$'000	\$'000	\$'000
EXPENSES					
Employee benefits	1,753	1,948	2,045	2,147	2,255
Supplier	1,764	1,230	1,363	1,472	1,568
Grants	21,754	22,450	22,126	22,075	22,559
Depreciation and amortisation	685	660	600	560	540
Other	48	35	17	20	25
Total expenses	26,004	26,323	26,151	26,274	26,947
LESS:					
OWN-SOURCE INCOME					
Revenue					
Sale of goods and rendering of services	110	105	105	105	105
Interest	325	275	275	275	275
Industry Contributions	7,971	7,545	7,865	7,856	8,077
Other revenue	1,072	2,105	1,690	1,750	1,800
Total revenue	9,478	10,030	9,935	9,986	10,257
Total own-source income	9,478	10,030	9,935	9,986	10,257
Net cost of (contribution by)	16,526	16,293	16,216	16,288	16,690
Services					
Revenue from government	16,529	16,297	16,227	16,295	16,700
Surplus (Deficit)	3	4	11	7	10
Surplus (Deficit) attributable to the Australian Government	3	4	11	7	10

Table 3.2.2: Budgeted departmental balance sheet (as at 30 June)

	Estimated actual 2010–11 \$'000	Budget estimate 2011–12 \$'000	Forward estimate 2012–13 \$'000	Forward estimate 2013–14 \$'000	Forward estimate 2014–15 \$'000
ASSETS					
Financial assets					
Cash and equivalents	7,331	7,057	7,112	6,730	6,667
Trade and other receivables	2,260	2,646	2,457	2,806	2,924
Investments	5	5	5	5	5
Other	80	-	-	-	-
Total financial assets	9,676	9,708	9,574	9,541	9,596
Non-financial assets					
Infrastructure, plant and equipment	168	118	78	28	18
Intangibles	2,195	1,985	1,805	1,645	1,445
Total non-financial assets	2,363	2,103	1,883	1,673	1,463
Total assets	12,039	11,811	11,457	11,214	11,059
LIABILITIES					
Payables					
Suppliers	185	177	182	190	241
Grants	406	426	351	403	411
Other	1,214	957	648	324	85
Total payables	1,805	1,560	1,181	917	737
Provisions					
Employees	448	461	475	489	504
Total provisions	448	461	475	489	504
Total liabilities	2,253	2,021	1,656	1,406	1,241
Net assets	9,786	9,790	9,801	9,808	9,818
EQUITY*					
Reserves	195	195	195	195	195
Retained surpluses	9,591	9,595	9,606	9,613	9,623
Total equity	9,786	9,790	9,801	9,808	9,818

* 'Equity' is the residual interest in assets after deduction of liabilities.

Prepared on Australian Accounting Standards basis.

Table 3.2.4: Budgeted departmental statement of cash flows (for the period ended 30 June)

	Estimated actual 2010–11 \$'000	Budget estimate 2011–12 \$'000	Forward estimate 2012–13 \$'000	Forward estimate 2013–14 \$'000	Forward estimate 2014–15 \$'000
OPERATING ACTIVITIES					
Cash received					
Goods and services	110	105	105	105	105
Receipts from government	16,529	16,297	16,227	16,295	16,700
Interest	325	275	275	275	275
Other	8,540	9,344	9,744	9,257	9,759
Total cash received	25,504	26,021	26,351	25,932	26,839
Cash used					
Employees	1,773	1,935	2,031	2,133	2,240
Suppliers	1,739	1,238	1,358	1,464	1,517
Grants	22,106	22,430	22,201	22,023	22,581
Other	140	292	326	344	264
Total cash used	25,758	25,895	25,916	25,964	26,602
Net cash from or (used by) operating activities	(254)	126	435	(32)	237
Cash used					
Purchase of property, plant and equipment	100	100	80	50	50
Other	250	300	300	300	250
Total cash used	350	400	380	350	300
Net cash from or (used by) investing activities	(350)	(400)	(380)	(350)	(300)
Net increase or (decrease) in cash held	(604)	(274)	55	(382)	(63)
Cash at the beginning of the reporting period	7,935	7,331	7,057	7,112	6,730
Cash at the end of the reporting period	7,331	7,057	7,112	6,730	6,667

Prepared on Australian Accounting Standards basis.

The FRDC Governance framework

Element	Scope
Enabling legislation	<i>The PIERD Act 1989</i> which sets out the legislative framework and rules for the establishment and operation of the FRDC.
Governance legislation	<i>The Commonwealth Authorities and Companies Act 1997</i> (CAC Act), which specifies requirements for good governance and accountability.
Priorities of key stakeholders	Australian Government National and Rural Research Priorities. The RD&E priorities of representative organisations: Recfish Australia, Commonwealth Fisheries Association and National Aquaculture Council.
Annual report	Requirement of various legislation; Reports to the Australian Parliament and FRDC stakeholders on RD&E activities during the financial year and on measures to ensure good governance.
Quality management system	Systematic, ISO-certified processes CAS/NZS ISO 9001:2008 designed to meet or exceed the expectations of stakeholders and other people and organisations with which FRDC does business. Incorporates management of FRDC policies.
RD&E planning and priority-setting	FRDC works with nation-wide Fisheries Research Advisory Bodies (FRABs) to undertake planning for RD&E in consultation with governments, AFMF, industry, stakeholders and research partners. Priorities for RD&E at state, regional or fishery level are significantly determined by the FRABs, managed subprograms and other priority-setting structures, with the FRDC determining the balance between projects funded within the RD&E programs.
Board governance	Key functions include overseeing corporate governance, including the systems and processes used to direct and control its operations and investment decisions. This is enhanced by the Board's spread of skills and experience and ongoing development in directorship.
Performance monitoring	Includes monitoring and measuring of performance to continually improve the FRDC's effectiveness and efficiency.
Reporting to stakeholders	Includes consultation with, and formal reporting to the three representative organisations; reporting of RD&E investment activities via FISH; and participation in conferences, workshops and other activities.

For more information on the FRDC:

Post: Locked Bag 222
Deakin West.
ACT 2600
Australia

Telephone: 02 6285 0400
Facsimile: 02 6285 0499
Email: frdc@frdc.com.au
Web: www.frdc.com.au