



**FRDC**

The Southern Ocean IPA RD&E Plan provides a framework to identify the key strategic research needs from 2018 – 2022.

## Southern Ocean IPA RD&E Plan

Research, Development and  
Extension Plan 2018 – 2022

June 2018

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## 1. CONTEXT

### 1.1 FRDC RD&E Investment Programs

The FRDC has five (5) Research, Development and Extension (RD&E) investment programs that directly align with its governing legislation, the [Primary Industries Research and Development Act 1989](#) (PIRD Act). RD&E investments across these program areas will be assessed to ensure the FRDC maintains a balanced portfolio that meets the short and long term needs of its stakeholders, including the Australian Government and the Australian community. The programs include:

**Environment** - This program relates to RD&E that supports natural resource sustainability in managing fishing and aquaculture activities in Commonwealth, state and territory waters. Many components of FRDC-funded RD&E focus on improving the sustainable use of Australia's aquatic resources.

**Industry** - This program relates to RD&E that assists the production and value of seafood. It could be in the form of business profitability, international competitiveness, opportunities for productivity increases, resource access, and experience or wellbeing benefits. This program aims to help all sectors improve their overall performance.

**Communities** - This program relates to RD&E that maintains the long-term sustainability of the commercial sector by understanding the interactions and co-dependence between fishing and aquaculture, and the wider community. It is enhanced by knowledge about the social importance of fisheries.

**People** - This program relates to RD&E that is needed to attract and advance people who will lead fishing and aquaculture towards a sustainable and profitable future. The FRDC has taken a strong role in this area, from employing and developing young researchers, through to facilitating access to leadership development for all sectors of fishing and aquaculture.

**Adoption** - This program relates to how project outputs are delivered so they can be easily adopted and support stakeholder decision making and practices. The FRDC continually works with researchers and end users to determine and implement the best way of extending these results. In addition, the FRDC is continuing to develop its systems to ensure its 'knowledge bank' is widely accessible.

### 1.2 Co-management investment model

Under the FRDC's RD&E Plan 2015 - 2020, the FRDC provides greater ownership and authority to industry sectors in developing RD&E priorities, through Industry Partnership Agreements (IPAs) and to jurisdictions through Research Advisory Committees (RACs) - formerly Fisheries Research Advisory Bodies (FRABs).

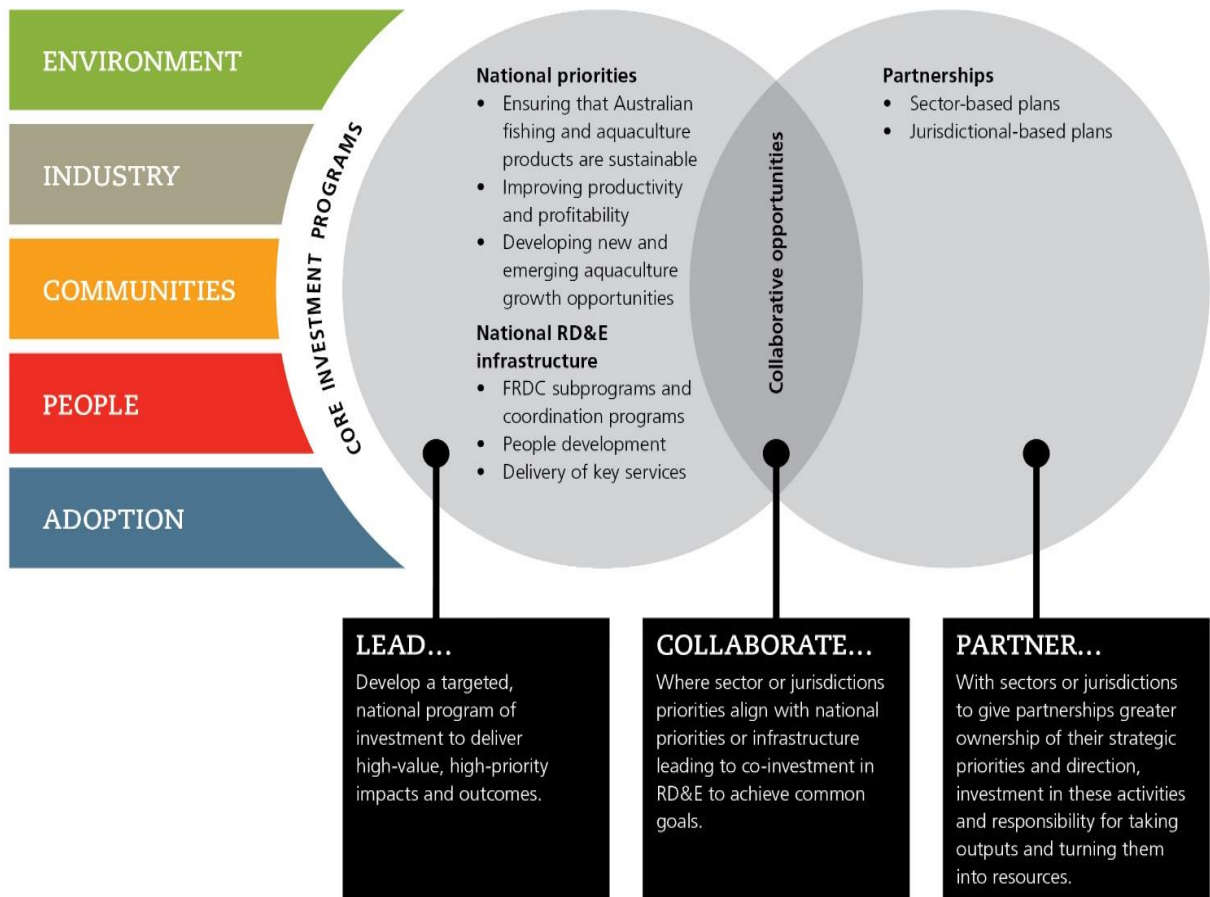
A key component of this investment model is the development of a multi-year RD&E Plan for each IPA and RAC aligned with the FRDC's 5-year RD&E Plan. This will assist in developing a tailored RD&E program that:

- meets both jurisdictional and national strategic RD&E priorities

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- is balanced across FRDC programs (environment, industry, communities, people and extension)
- focusses on short, medium and longer term RD&E outcomes
- is supported by a consistent RD&E planning framework across all RACs.

The framework for RD&E investment by the FRDC for 2015-20.



## 2. OPERATING ENVIRONMENT

### 2.1 Overview

The Southern Ocean IPA covers fishing in the waters of the Southern Ocean. This activity is primarily concentrated on the fishing of Patagonian Toothfish and Mackerel Icefish although there are other opportunities to develop new fisheries in other areas. It is also critical to ensure sound understanding and monitoring of by-product species such as Grey Rockcod, Unicorn Icefish, Skates and Rays and Macrourids, which have limits on catch quantities that could stop the target fishery if the ecological impacts are becoming unacceptable. Fishing activity tends to concentrate in waters around Heard and McDonald Island and Macquarie Island with these fisheries managed by the Australian Fisheries Management Authority ([www.afma.gov.au](http://www.afma.gov.au)) in partnership with the Commission for the Conservation of Antarctic Marine Living Resources (<https://www.ccamlr.org/>).

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Australia's Quota Management System in the sub-Antarctic is based on proportional harvest property rights allocated in perpetuity (called quota). An annual harvest right is generated from quota ownership based on the percentage of the Total Allowable Catch (TAC). Strict regimes are in place to ensure compliance with catch landing and reporting requirements to ensure that quota rights and responsibilities are protected, including those to crack down on the previous problem of illegal, unregulated and unreported (IUU) fishing.

In striving to achieve a balance between resource use and conservation, AFMA and the Management Advisory Committees (MACs) draw upon advice provided by Resource Assessment Groups (RAGs) in addition to advice from the CCAMLR Scientific Committee and various fisheries and environmental working groups. RAGs comprise fishery scientists, industry members, fishery economists, management and other interest groups. The main role of RAGs is to provide advice on the status of fish stocks and on the impact of fishing on the marine environment. The MACs consider the advice of RAGs and provide recommendations to the Board based on overall objectives for the particular fishery (risk management) and, ultimately, to the pursuit of AFMA's legislative objectives. Advice from annual CCAMLR meetings is also provided to the AFMA Commission, to ensure any management measures are taking into account CCAMLR Conservation Measures and other requirements that may arise from CCAMLR from time-to-time. The complexity is increased as there is a common border between Australia and France in the middle of the Kerguelen plateau, so science and management must take into account cross-border issues, such as spatial movements of species, and alternative management arrangements. Similarly, there is a cross-border with New Zealand and Australia at the Macquarie Island fishery, and also high seas fisheries which abut Australian EEZs.

These fisheries are accessed by two companies Austral Fisheries and Australian Longline. These two companies are not only active in the fisheries but also in the management and science and research that underpins the sustainable harvest of the species from these waters.

This IPA draws on the priorities outlined for the fishery from the agencies responsible for its management (AFMA, CCAMLR) as well as the companies that access the resource.

## 2.2 Drivers, challenges and opportunities

This IPA is developed to address issues for Australia's participation in Southern Ocean fisheries including, but not limited to:

1. The need for a high-quality data collection and tagging program at HIMI
2. The need to develop revised stock assessment methods for primary species at HIMI that takes account of the stock connectivity across the Kerguelen Plateau
3. The need for ongoing research support for Australia's relationship with France on the Kerguelen Plateau;
4. The need to monitor fish and skate/ray bycatch, seabird bycatch, and cetacean depredation (specific to the longline fleet);
5. The need to support Australian vessels participating in new and exploratory fisheries; and
6. The need to promote cost effective and efficient operations for the industry.

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### 3. RD&E PLAN 2018 – 2022

#### 3.1 Purpose

The Southern Ocean IPA RD&E Plan provides a framework to identify the key strategic research needs of the fisheries sector under its jurisdiction for the 5 year period from 2018 – 2022.

Where possible, this plan will link with other related strategies to enable efficiency and leverage opportunities e.g. other RACs, FRDC subprograms, FRDC coordination programs, FRDC sector-based program as well as plans external to those of the FRDC such as collaboration deeds or fishery specific RD&E Plans.

This plan will also incorporate components of basic and applied RD&E that follow the FRDC investment framework policy as well as those components that are funded separately by the industry (via the two companies) in monitoring and research that are core components for the management of the fisheries. These areas may be solely funded by the companies through this IPA. Priorities as outlined by the Sub Antarctic Resource Assessment Group and the science work plan are appended to this IPA RD&E plan.

#### 3.3 Goals

1. Secure access based on continuous improvement in the sustainable management of Southern Ocean fisheries resources and the marine environment
2. Harmonised, consolidated and accessible data
3. Harvest efficiencies realised
4. Maintenance and awareness of third party certification
5. Respected and professional leadership fostered by development and knowledge exchange opportunities
6. Adoption of knowledge and technologies by industry, researchers, government and the community.

#### 3.4 Strategic RD&E investment priority areas

1. Develop and review appropriate stock assessment models for Toothfish and Icefish and also bycatch species (particularly skates and grenadiers) which are not retained for commercial use.
2. Spatial stock structure and movement dynamics for key species
3. Investigate spawning dynamics of Toothfish
4. Development of Management Strategy Evaluation (MSE) approach for MITF and HIMI
5. Assess and determine a wide range of ecological impacts including but not limited to:
  - a. assessment of the ecological impacts of fishing for Toothfish and icefish
  - b. examine the robustness of the Toothfish TAC from an ecological perspective including ecological effect on the non-target species (eg bycatch, ecologically related species);
  - c. impacts of longlining and trawling; and
  - d. role and assessment of refuge areas
6. Develop data management guidelines, harmonisation and accessibility

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7. Risk assessment of incidental bycatch species (in particular sleeper sharks and other elasmobranchs)
8. Identification and analysis of bycatch
9. Improved vessel and catching efficiencies
10. Improved crew welfare and safety
11. Improving efficiencies in assessment methodologies and fisheries management taking into account both national and international aspects of the Kerguelen Plateau region with both France and CCAMLR measures being applicable
12. Scope the research, exploration and development of new fisheries
13. Improved awareness of the fishery, its sustainability performance and recognition of third party certification
14. Develop leadership and capacity within stakeholders of the fishery

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## RD&E Program 1. Environment

### Priority Area 1. Stock Sustainability, Structure and spatial extent

Outcomes:

- Achieve consensus at SC-CAMLR on an updated assessment for HIMI Toothfish and Mackerel Icefish and that Australia’s fishing and research activities are consistent with CAMLR requirements
- Implement the bilateral agreement between France and Australia on approaches to harvesting Toothfish and icefish on the Kerguelen Plateau
- Spatial stock structure and movement dynamics of key species understood

### Priority Area 2. Environmental and ecological drivers

Outcomes:

- Environmental drivers investigated for key species in Southern Ocean fisheries and incorporated into assessments including risk assessments
- Benthic impacts understood and managed where required
- A wide range of ecological drivers understood and monitored

### Priority Area 3. TEP and bycatch management

Outcomes:

- Monitor and validate fish and skate/ray bycatch, seabird bycatch and cetacean depredation (specific to the longline fleet)
- Develop and review appropriate stock assessment approaches for bycatch species (particularly skates and grenadiers) which are generally not retained for commercial use.
- Risk assessment of incidental bycatch species (in particular sleeper sharks and other elasmobranchs)

### Priority Area 4. Data Management and access

Outcomes:

- Maintain a high-quality data collection and tagging program at HIMI

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## RD&E Program 2. Industry

### Priority Area 1. Productivity and profitability

#### Outcomes:

- reduced diesel fuel consumption and increased efficiency of operations
- maintenance of third party accreditation and the requirements that result from it

### Priority Area 2. Management Efficiency

#### Outcomes:

- Fisheries management improved in accuracy, compliance and cost
- Management based on principles of Australian legislation, taking into account international and cross-boundary issues where applicable.

### Priority Area 3. Developmental Fisheries

#### Outcomes:

- Identification, research and development of possible new fisheries/species within the Southern Ocean region.

### Priority Area 3. Data Management and access

#### Outcomes:

- Data associated with Southern Ocean fisheries are harmonised and readily accessible to all relevant stakeholders

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## RD&E Program 3. Communities

### Priority Area 1. Community Engagement

#### Outcomes:

- Increased awareness of the fishery and its practices
- The awareness of third party certification increased
- Continue to support the outreach of the Coalition Of Legal Toothfish Operators, Inc.

### Priority Area 2. Data Management and access

#### Outcomes:

- Data related to the fishery is accessible to relevant groups

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## RD&E Program 4. People

### Priority Area 1. Crew development and WHS

#### Outcomes:

- Increased level of awareness and adoption of WHS principles
- Skills training and opportunities provided for attendance at conferences and other relevant business programs.

### Priority Area 2. Training Programs

#### Outcomes:

- Identified fishery stakeholders undertake training programs

### Priority Area 3. Development Opportunities

#### Outcomes:

- Support provided and attendance at relevant conferences and events
- Program for visiting experts/exchanges developed and undertaken.
- Support for 3<sup>rd</sup> international Kerguelen Plateau Symposium to be organised and held.

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## RD&E Program 5. Adoption

### Priority Area 1. Research outputs adopted

#### Outcomes:

- Evidence of adoption of research outputs at national and international levels

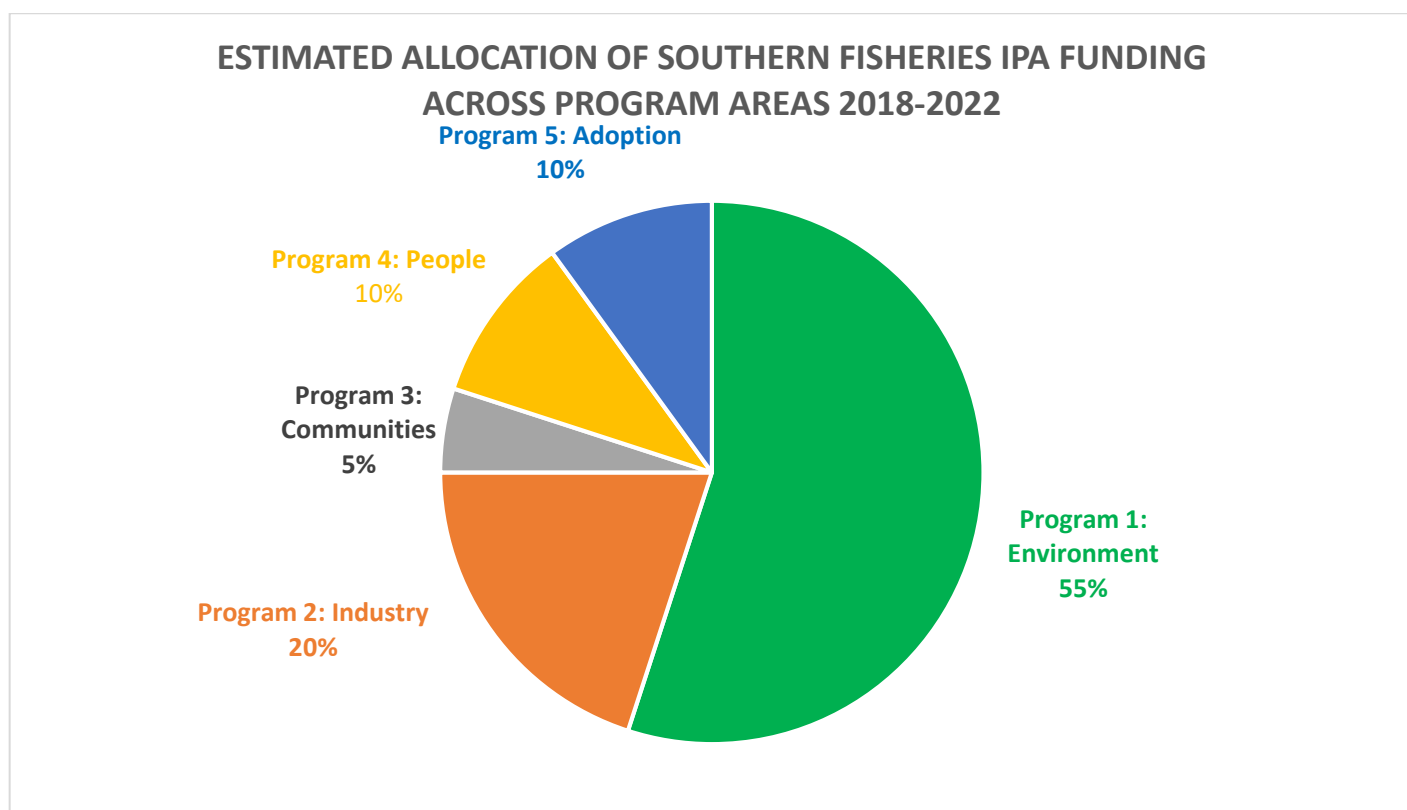
### Priority Area 2. Knowledge exchange

#### Outcomes:

- Attendance at key conferences and events
- Visiting experts and exchange program developed

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### 3.5 Forecast investment across strategic RD&E priorities



## 4. RD&E PLAN GUIDELINES

### 4.1 Investment collaboration

The IPA's are to be mindful of collaborative opportunities with external funding sources (other than the FRDC) as well as collaboration between the jurisdictional RACs, IPAs and FRDC subprograms. This collaboration occurs through the sharing of RD&E Plans as well as the results of priority planning processes. The annual planning workshop provides a forum for the sharing of these priorities to promote collaboration.

Collaboration provides the opportunity to share investment across common areas of interest and promote RD&E execution efficiency.

### 4.2 Extension

Extension processes are embedded into all FRDC-funded RD&E. How results can be extended begin when a project is approved for funding, are considered in the design and proposal phase where priorities for end users are determined, continue during the project's execution through to the final published report. This is often easier for short-term applied research but needs to be more considered for longer-term, blue-sky research.

On 23 April 2010, the Primary Industries Ministerial Council (PIMC) approved a National Strategy for Fishing and Aquaculture Research, Development and Extension (RD&E) which establishes the future direction to improve the focus, efficiency and effectiveness of RD&E to support Australia's fishing and aquaculture industry.

The FRDC have adopted these as key principles with regards to encouraging and promoting Extension and Adoption. They are:

- Principle 1: All stakeholders to value extension and adoption activities in the same way as research activities.
- Principle 2: Extension will be a key focus in research project development
- Principle 3: Project knowledge and outputs are actively managed
- Principle 4: Effectiveness and impact of project extension activities are evaluated
- Principle 5: Extension and adoption capacity is maximised and built upon.

It is best practice for project managers to have given some thought to how the project outputs will be used and adopted by end users while developing the application. It is a FRDC requirement that an Extension and Adoption Plan is developed and submitted for each project.

### 4.3 Evaluation of projects

The FRDC has adopted the Commonwealth input, output, outcome reporting framework policy. The Department of Finance and Deregulation has determined that the FRDC's planned outcome is *Increased economic, social and environmental benefits for Australian fishing and aquaculture, and the wider community, by investing in knowledge, innovation, and marketing*. The FRDC's performance is measured against its ability to deliver this outcome.

The success of the IPA's planning, investment, management and adoption is measured by an evaluation framework that is based on adaptive management. The structure of the evaluation framework is as follows:

- A planning process that ensures investment is made against priorities where research can contribute to a significant improvement.
- An annual report evaluating the performance of individual projects against the targets in the RD&E Plan.

The FRDC has implemented the Rural RD&E Corporation Evaluation Framework methodology to achieve the total portfolio evaluation assessment. This is based on a rolling series of cost benefit analysis of project clusters (based on previous 5 years investment). The results of the project cluster assessments links to the agreed KPIs that are relevant to that cluster. This process ensures that the investment decisions are continually being adjusted to ensure optimal investment performance. In this ongoing evaluation, the FRDC will measure the performance of IPA investments after the life of its RD&E Plan.

During the life of the RD&E Plan, the IPA should self evaluate its performance against its identified Priority Areas as well as monitoring investment to ensure balance in investment across the FRDCs 5 programs. This is to be aligned with the prioritisation and RD&E Plan review processes undertaken in the October IPA meeting.

### 4.4 Review of the RD&E plan

Annually, the IPA will review the 5 year RD&E Plan. The Plan will be reviewed to:

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- assess performance against the identified priority areas of the plan and key performance indicators
- identify gaps against the Priority Areas of the plan
- determine priority areas for investment against these gaps and other priority setting processes that may be undertaken

These annual priorities will be circulated to all FRDC subprograms and partnership agreements unless it is deemed that there are areas of sensitivity, IP protection or commercial advantage that require protection.

Each year, the FRDC will hold an annual workshop for all RACs, Industry Partnership Agreements and National Initiatives to provide updates on priority areas for investment and any potential overlap and collaborative opportunities for the coming financial year.

The IPA, at each meeting, should also undertake a situational scan of the jurisdiction to identify any tactical or immediate areas of RD&E need that require short term or immediate remediation.

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