



FRDC's Program and Evaluation Frameworks



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Overview

This document describes FRDC's Program Framework and Evaluation Framework and in part meets the requirements of FRDC Funding Agreement with the Department of Agriculture and Water Resources (DAWR). Below are the requirements of the Funding Agreement 2015-18.

10. PLANNING (From page 19 and 20 of FRDC's Funding Agreement 2015-19)

Program Framework

10.1 The FRDC must develop and maintain a Program Framework to support its planning, performance and accountability requirements under the PGPA Act (Chapter 2, Part 2-3) and this Agreement within six months of the Agreement Date.

Note: Where there is inconsistency between PGPA Act or Rules and this Agreement, the PGPA Act and the Rule prevail.

10.2 The Program Framework should also inform the development of key planning and reporting documents such as the R&D Plan and Annual Operational Plans and the Annual Report and must include specifications of:

- (a) planned outcomes—results, consequences and impacts—from the investment of Funds. An outcome statement should:
 - (i) be specific, focused and easily interpreted;
 - (ii) identify the intended outputs, with the level of achievement against the intended outcomes being measurable;
 - (iii) specify the target groups (where these groups can be identified) for the outcomes;
 - (iv) specify the Programs, sub programs (if any), key deliverables and Activities to be undertaken that contribute to the achievement of the intended outputs and outcomes; and
 - (v) be agreed by key stakeholders and the Commonwealth as part of developing the R&D Plan.
- (b) for each Program, identify key performance indicators that provide an accurate and succinct story of performance. Key performance indicators should:
 - (i) in the R&D Plan, be strategic in nature and linked to the planned outputs and outcomes;
 - (ii) in the Annual Operational Plan, link to the deliverables;
 - (iii) in the Annual Report, bring the key performance indicators under (i) and (ii) above together and demonstrate how the deliverables funded advanced the outcomes;
 - (iv) be clear, unambiguous and measurable with appropriate timeframes for achievement;
- (c) the expected total cost (direct and indirect) of activities and resources attributable to the delivery, policy development and associated costs of each Program; and
- (d) an Evaluation Framework designed in accordance with clause 10.3

Evaluation Framework

10.3 The FRDC must develop an Evaluation Framework within six months of the Agreement Date. The Evaluation Framework must:

- (a) support the Program Framework;
- (b) ensure that key performance related information is generated by the Program Framework and is routinely collected and monitored;
- (c) include a structured plan for the systematic evaluation of the efficiency, effectiveness and impact of the FRDC's key investments; and
- (d) include a means of publishing and disseminating relevant Research and Development outcomes and outcomes of evaluations undertaken under subclause

10.4 The FRDC must:

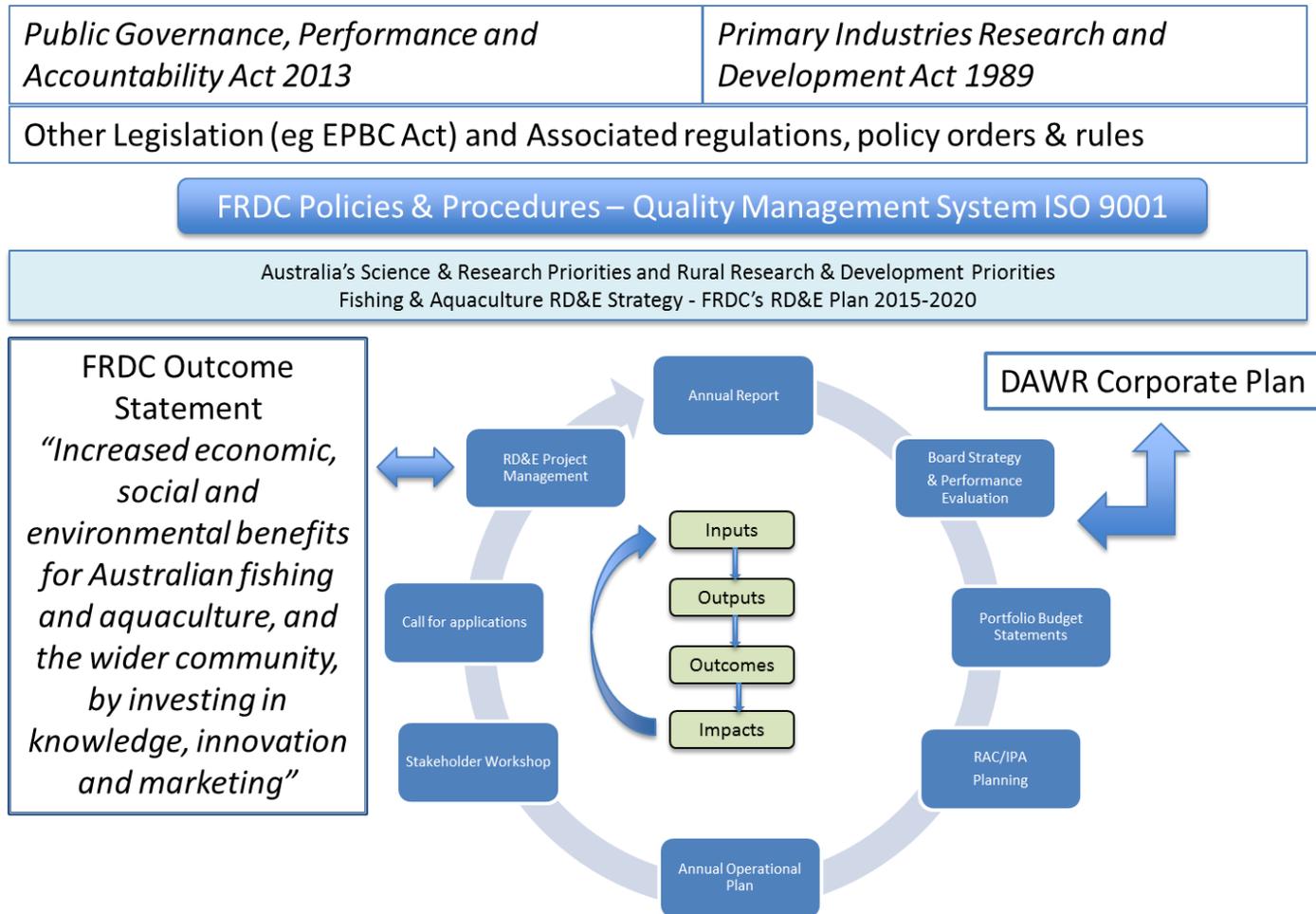
- (a) consult with the Commonwealth in preparing the evaluation plan;
- (b) participate in any evaluation project relevant to the FRDC's operations which is established for all RDCs; and
- (c) demonstrate the FRDC's commitment to provide adequate expenditure for this purpose.

10.5 The Evaluation Framework must be published on the FRDC's public website within 30 days of being adopted by the FRDC.

Program Framework

The following diagram conceptualises how FRDC has implemented its program framework to ensure where possible that it utilises existing processes and documentation. The main logic is based on the AOP/PBS delivering the RD&E Plan and this being reported in the Annual Report.

Diagrammatic representation of FRDC's Program Framework



The following table sets out the elements for the program framework, the KPIs, methods for assessing and how this will be reported. The RD&E investment is covered in more detail in the Evaluation Framework below.

Element	Requirements	KPI	Method	Reporting
Governance	PIRD and PGPA Acts FRDC Outcome statement	100% Compliant	Funding Agreement (FA)	Annual Report 6 Monthly FA meetings
Administration	ISO 9001 Quality Manual	Maintain ISO Certification	ISO Audits Staff Performance reviews	Annual report ISO reports
Finance	Annual Operating Plan and Portfolio Budget Statement	100% Compliant	Internal Audits ANAO Audits Compliance check list Comcare Survey Project Financial Acquittals Research provider audits	Annual Report Monthly Financial Statements Compliance reporting
RD&E Investment	FRDC RD&E Plan 2015-2020	See KPI's in RD&E plan and section below	FRDC RD&E Plan 2015-16: Monitoring and Evaluation CRRDC Cost Benefit http://www.ruralrdc.com.au/impact-assessment-performance/	Annual Report http://frdc.com.au/research/benefits_of_research/Pages/default.aspx
Communication & Engagement	Communication, Extension and Adoption Plan	See targets in plan	Stakeholder Survey FISH and readership Survey Consumer Survey Community Perception Survey http://frdc.com.au/research/market_research/Pages/default.aspx	WEB site

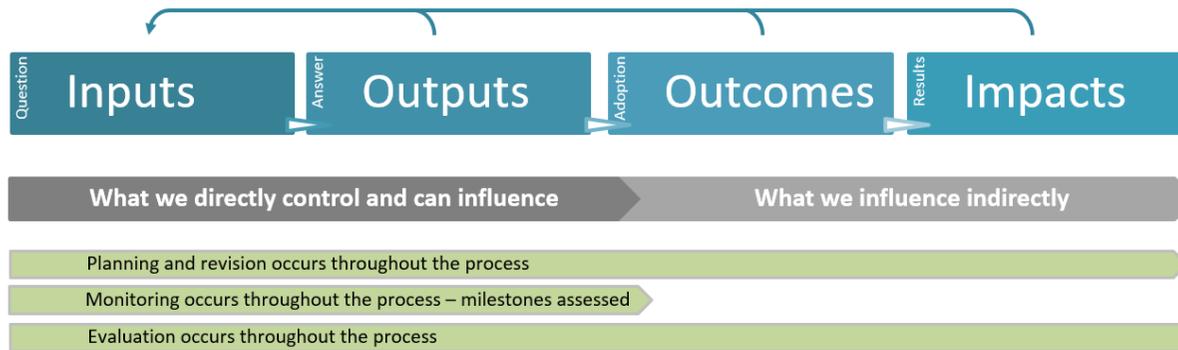
Evaluation Framework

The FRDC has adopted the Commonwealth input, output, outcome reporting framework policy. The Department of Finance has determined that the FRDC's 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.

FRDC RD&E Plan 2015-20: Monitoring and Evaluation

A monitoring and evaluation (M&E) framework has been implemented to assess the progress of the FRDC RD&E Plan. The (M&E) framework guides the gathering of information to measure the progress in achieving delivering the outputs and outcomes.

The program logic model below outlines the four key areas that underpin the M&E framework. This model will also be used as the M&E framework for the FRDC Annual Report and the RD&E Plan 2015-20.



Input Assessment

The FRDC's 2015-20 RD&E Plan (p44) details the expenditure budgets for the life of the Plan by program and by activity (where activity aligns with the new Lead-Collaborate-Partner model).

a) Balanced portfolio

The FRDC will deliver a balanced RD&E portfolio by investing in:

1. the FRDC's five programs
2. national jurisdictional (lead); regional and sector-focussed projects (partner); and these working together for similar priorities (collaborate)
3. long and short-term projects (an indicator of adaptive versus strategic research)
4. high and low risk projects (percentage chance of success)
5. strategic and adaptive research projects

All RD&E Plans (FRDC, sector, and jurisdictional) will demonstrate how they will achieve a balanced portfolio of RD&E investment. Note that each of these may not achieve a balanced approach individually, but in aggregate the FRDC's investment through its partners, will aim to achieve a balanced portfolio.

The balance of the portfolio will be measured against the following targets (note that the tables below represent different views of the same investment portfolio):

1:

Program	5-year Expenditure \$m	Expenditure %	Variance tolerance
1. Environment	53	40	± 10%
2. Industry	53	40	
3. Communities	3	2	
4. People	13	10	
5. Adoption	11	8	
Total	133	100	

2:

Investment approach	5-year Expenditure \$m	Expenditure %	Variance tolerance
Lead	47	35	± 10%
Collaborate	3	2	
Partner	83	63	
Total	133	100	

3:

Project Length (indicator of adaptive versus strategic research)	5-year Expenditure \$m	Expenditure %	Variance tolerance
Short (≤ 18 months)	40	30	± 10%
Medium (> 18 months < 3 years)	27	20	
Long (≥ 3 years)	66	50	
Total	133	100	

4:

Project risk*	5-year Expenditure \$m	Expenditure %	Variance tolerance
High risk	13	10	± 10%
Medium risk	67	50	
Low risk	53	40	
Total	133	100	

* High chance of direct adoption of project outputs (low risk) to low chance as project is more blue sky or basic research (high risk)

5:

Research Type	5-year Expenditure \$m	Expenditure %	Variance tolerance
Applied	120	90	± 10%
Blue Sky (Basic)	13	10	
Total	133	100	

b) Investment allocation against the RD&E Plan budget

Total RD&E Expenditure broken down by Program

Programs	2015–16	2016–17	2017–18*	2018–19*	2019–20*
	%	%	%	%	%
Environment	40	40	40	40	40
Industry	40	40	40	40	40
Communities	2	2	2	2	2
People	10	10	10	10	10
Adoption	8	8	8	8	8
Total programs expenditure		100	100	100	100

Total RD&E Expenditure by Activity

Activities	2015–16	2016–17	2017–18*	2018–19*	2019–20*
	%	%	%	%	%
National priorities	18	18	18	18	18
National infrastructure	12	12	12	12	12
Response fund	6	6	6	6	6
Partnership agreements (industry sectors)	37	37	37	37	37
Partnership agreements (jurisdictions)	27	27	27	27	27
Total activities expenditure	100	100	100	100	100

Output Assessment

Activity	RD&E Plan: Deliverables, strategies and investment opportunities
National Priorities	
Ensuring that Australian fishing and aquaculture products are sustainable and acknowledged to be so	Increased knowledge about how community values align with the values of Australian fishing and aquaculture sectors, with the aim of improving community perceptions.
	An Australian fisheries management and/or technical standard that addresses all fisheries and can be adopted by any management agency in Australia.
	A scheme for responsible fisheries management that can specifically be applied to small-scale, data-poor Australian fisheries.
	Bycatch performance metrics.
	Community net benefit metrics.
	An increased number of commercial species assessed in the national Status of Key Australian Fish Stocks Reports.
	A reduction in the percentage of species classified as 'undefined' in the national Status of Key Australian Fish Stocks Reports.
	Expanded capacity to connect with seafood consumers and markets in Australia and abroad, and use of these channels to understand community perceptions to tell the Australian fishing and aquaculture story across the sectors
Improving productivity and profitability of fishing and aquaculture	Efficiency improvements along the entire supply chain to improve market access, through strategic market intelligence and knowledge that will ultimately influence profitability.
	More sustainable and profitable use of underutilised and undervalued species.
	New technology solutions to improve productivity and profitability, where these can be feasibly implemented.
	Habitat rehabilitation to improve productivity and profitability for the fishing and aquaculture sector.
	Social contribution is supported by the fishing and aquaculture sector so it can capture the non-monetary value of activities across sectors.
	The gross value of production of Australia's fishing and aquaculture resources is increased.
Developing new and emerging aquaculture growth opportunities	A nationally-coordinated strategy for the growth of new aquaculture subsectors.
	RD&E to address barriers to aquaculture development including improved: <ul style="list-style-type: none"> -- hatchery production technologies -- breeds -- feeds and feeding systems

Activity	RD&E Plan: Deliverables, strategies and investment opportunities
	-- husbandry -- health systems -- market access and/or value add.
National Infrastructure	
People development	Continue to invest in leadership capacity building.
	Co-invest with partners in other areas of capacity building.
	Invest with universities in students to study marine science-specific topics relevant to FRDC stakeholders.
	Collect and analyse data to better understand the training needs of fishing and aquaculture.
	Partner in the development of research centres of excellence
Delivery of key services	Maintain FRDC's accreditation to develop Australian Standards.
	Continue to supply trade market access data.
	Continue the SafeFish program. Maintain access to fisheries data and statistics
Partner Key Drivers	
Public perception and social licence	Use targeted research to understand and anticipate community concerns and formulate appropriate responses, including effective engagement strategies.
	Inform community and environmental organisations about how fisheries and aquaculture producers value the marine resources they depend on, including the status of those resources..
	Communicate reliable scientific knowledge to the community on the status and standard of Australia's fishing and aquaculture resources, management and practices in an accessible, engaging and trustworthy form.
	Develop and adopt standards to guide the science and management of natural resources in the marine environment that provide for best practice, high transparency and allow for that performance to be measured
Environmental health	Develop tools and resources to monitor, understand and adapt to fishing and aquaculture's impacts on fish stocks and ecosystems so both remain sustainable.
	Identify new and more efficient methods of producing and harvesting seafood.
Food security, globalisation and market access	Understand consumer and market needs (domestic and international) to assist both aquaculture and the commercial fishing sectors.
	Optimise production efficiency and overall profitability.
	Add value to bycatch, discards and processing waste to increase seafood availability.
	Develop new aquaculture opportunities and expand those that are existing.
	Understand drivers and impediments to increasing productivity and profitability.

Activity	RD&E Plan: Deliverables, strategies and investment opportunities
	Capitalise on technological advances and transformational technology to improve productivity and profitability.
	Provide research and analysis to support efficient, open trade and market access.
	Develop approaches to better support individual and community economic development for the Indigenous sector.
Resource access and allocation	Establish and document the aspirations of the sectors in relation to access and allocation of aquatic resources.
	Establish an appropriate rights-based framework to maximise the economic, environmental and social values from the use of aquatic resources. This will require accurate social and economic data.
Resource management	Develop management practices and processes that better incorporate the needs, actual catch and effects of all sectors to effectively manage resource access and allocation.
	Create a fisheries management 'standard' to foster innovative, streamlined and cost-effective natural resource management, with greater emphasis on protocols and data.
	Reform the national regulatory framework to ensure standards such as the Australian Shellfish Quality Assurance program provide for internationally acceptable public health protection and for expanding market access.
People development and capacity building	Attract, train and maintain a skilled workforce, including researchers, fishers, innovators and resource managers at the sector, jurisdictional and national levels.
	Identify an effective consultation process to collect high-quality, relevant data on the training needs of the fishing and aquaculture sectors in Australia.
	Foster leadership, professionalism and entrepreneurship across all sectors of fishing and aquaculture to help build resilience.
	Bring together the different sectors of fishing and aquaculture to build capacity, develop cross-sector programs and networks.
Aquatic animal health and biosecurity	Strengthen Australia's capacity to prevent disease outbreaks (through stronger quarantine and biosecurity), detect diseases when they occur (through diagnostics and surveillance), and reduce their impacts (through genetics, vaccines and approved veterinary medicines).
Technological advancements	Identify new and existing technologies that can be used to improve current practices and performance

Outcome Assessment

Aim	Target	2016	2017	2018	2019	2020
By 2020, the community has effective access to, and understanding of, RD&E that supports fishing and aquaculture sustainability and informs improved perceptions of Australian seafood.	The number of species in the national status of key fish stocks increases to include 200 species.	114 species		160 species		200 species
	The number of species classified as 'undefined' is reduced from the current figure of approximately 30% to less than 10%.	~30%		~20%		<10%
	Positive perceptions of the commercial fishing industry increase from 28% to 40% by 2020 as measured through independently-commissioned FRDC stakeholder surveys.	28%	30%	34%	36%	40%
By 2020, deliver RD&E for fishing and aquaculture to increase productivity and profitability consistent with economic, social and environmental sustainability.	Provide RD&E to support increased trade of fishing and aquaculture products into countries with free trade agreements by some 300%.					300%
	Understand the quantity of potential production from Australia's fishing and aquaculture resources.			One report		
	Increase knowledge to improve the utilisation of fisheries resources by Indigenous Australians.					Two reports
	Increase knowledge to identify obstacles and opportunities to increase productivity through habitat.					Two reports
By 2020, deliver sufficient RD&E for significant commercialisation of at least two new or emerging aquaculture growth opportunities with demonstrated potential for profitable business operations.	Advance two or more new or emerging aquaculture opportunities/species for which RD&E has identified clear opportunities and technologies for good production and profitability growth, as measured by increases in harvest tonnages.	500 tonnes	1,000 tonnes	1,500 tonnes	2,000 tonnes	2,500 tonnes

Outcomes for the following research investment activities are being developed in the revised RD&E Plans for each of these activities:

- Lead – National Infrastructure
 - Indigenous Fishing Subprogram
 - Recreational Fishing Subprogram
 - People Development Subprogram
 - Social Science and Economics Coordination Program
 - SafeFish
 - Fish Names
 - Trade and market access
- Collaborate
- Partner –
 - Jurisdiction partnership agreements (Research Advisory Committee)
 - Industry Partnership Agreements
 - Tasmanian Salmonid Growers Association
 - Abalone Council of Australia
 - Australian Prawn Farming Association
 - Australian Barramundi Farmers Association
 - Australian Council of Prawn Fisheries
 - Southern Rock Lobster
 - Western Rock Lobster
 - Australian Southern Bluefin Tuna Industry Association
 - Oysters Australia
 - Pearl Consortium
 - Australian Abalone Growers Association

Linkages between FRDC’s 5 RD&E Programs and the Outputs

Program	Investment	Outcomes - KPI
1 Environment: achieving the sustainable use and sustainable management of natural resources	Priority 1: Ensuring that Australian fishing and aquaculture products are sustainable and acknowledged to be so	<ul style="list-style-type: none"> • Ensure information on the performance and value of Australia’s fisheries is readily available. • Increase the number of species to 200 in the national Status of Key Australian Fish Stocks Reports. • Reduce the number of species classified as ‘undefined’ from the current figure of approximately 30 per cent to less than 10 per cent.

2 Industry increasing the economic, environmental and social benefits to members of primary industries and to the community in general by improving the production, processing, storage, transport or marketing of the products of primary industries	Priority 2: Improving productivity and profitability of fishing and aquaculture	<ul style="list-style-type: none"> • Provide RD&E to support increased trade of fishing and aquaculture products into countries with free trade agreements by some 300 per cent. • Understand the quantity of potential production from Australia's fishing and aquaculture resources. • Understand and improve the utilisation of fisheries resources by Indigenous Australians. • Identify obstacles that may hinder, and opportunities to increase productivity through habitat rehabilitation and improvement
	Priority 3: Developing new and emerging aquaculture growth opportunities	Advance two or more emerging aquaculture opportunities/species for which RD&E has identified clear opportunities and technologies for good production and profitability growth
3 Community making more effective use of the resources and skills of the community in general and the scientific community in particular	Priority 1: Ensuring that Australian fishing and aquaculture products are sustainable and acknowledged to be so	Increase positive perceptions of commercial fishing from 28 per cent to 40 per cent by 2020 as measured through independently-commissioned FRDC stakeholder surveys
4 People supporting the development of scientific and technical capacity	People Development	<ul style="list-style-type: none"> • Continue to invest in leadership capacity building. • Co-invest with partners in other areas of capacity building. • Invest with universities in students to study marine science-specific topics relevant to FRDC stakeholders. • Collect and analyse data to better understand the training needs of fishing and aquaculture.

		<ul style="list-style-type: none"> Partner in the development of research centres of excellence
	Collaboration: The FRDC will provide a vehicle so that sectors or jurisdictions may leverage funding where there is alignment between their RD&E priorities and those at the national level	Number of project that have co-funding from different RACs, IPAs and Subprograms
5 Adoption developing the adoptive capacity of primary producers.	Establish Program and Evaluation Framework	As measured by positive BCAs

Impact Assessment

FRDC will undertake economic assessment of all project clusters that are funded to deliver the RD&E Plan 2015-20. FRDC participates in the Council of Rural RDC (CRRDC) Evaluation Working Group. FRDC will ensure the methodology used for impact assessment follows the procedure guidelines established by the CRRDC (<http://www.ruralrdc.com.au/impact-assessment-performance/>).

The current target for the impact assessments is:

- Investment in FRDC programs demonstrates positive return

The intent is to also demonstrate impact against the targets that have been identified from the DAWR Corporate Plan 2016-17 as relevant to FRDC. To do this will require collection of additional data for some of the targets and for others to integrate them into existing activity reporting – see description below.

OBJECTIVES

The impact assessments will serve four purposes:

- They will provide a key input into FRDC's assessment of its program performance regarding impact against its current RD&E plan (2015-2020) and inform future directions of investment;
- They will provide information that can be used in FRDC annual reporting to the Australian Government;
- They will contribute to populating the Evaluation Framework for FRDC reporting to DAWR in 2019 under the current SFA agreement.
- They will provide FRDC's input to an overall performance assessment of the RDCs being compiled by the CRRDC.

In undertaking these economic impact assessments via cost-benefit analyses, the consultant will be expected to follow the guidelines provided by the CRRDC so that the Council can report on a whole of Corporations basis to the Australian Government.

UNDERSTANDING AND KEY REQUIREMENTS

Annual Reporting

FRDC needs to report the results of its impact assessments in its annual reporting to the Australian Government and other stakeholders. Hence, an impact assessment report based on completed projects is required by 30th June each year for the next five years. The first project assessments will refer to projects completed in the year ending 30th June 2016 and this first draft assessment report is required by 30th June 2017.

Reporting against the FRDC RD&E Plan 2015-2020 and the Evaluation Framework Associated with the SFA

The annual impact assessment reports will enable reporting against the current FRDC RD&E Plan, commencing with projects completed in the years ending 30th June 2016 and extending to those completed in the years ending June 2017, 2018, 2019 and 2020. The annual assessment reports are likely to be used for populating part of the Evaluation Framework required in the 2019 SFA reporting.

CRRDC Reporting

Economic analysis is required to provide impact assessments from RDC investments across the 15 RDCs. Each RDC is contributing to this effort within a standard set of guidelines and a standard reporting framework. Valuation of these impacts, along with identification of investment expenditure, is required to demonstrate the RDCs contribution to Australian primary industry as well as any environmental and social benefits to Australia.

Unit of Investment

The unit of investment to be evaluated will be the individual project. In any one year, the number of completed FRDC projects varies. The average over the past five years is 132. It would not be possible to carry out impact assessments for all completed projects in any one year, therefore a random stratified sampling process is to be used to select the projects for which individual impact assessments will be undertaken. Randomness is important to satisfy the CRRDC requirements and stratification is important to ensure that all principal categories of projects are included, particularly in relation to the core FRDC investment programs/PIRD Act objectives.

APPROACH

General

The approach will follow general evaluation guidelines that are now well entrenched within the Australian primary industry research sector including RDCs, Cooperative Research Centres (CRCs) and some Universities. The impact assessments will use cost-benefit analysis (CBA). The assessments will entail both qualitative and quantitative approaches and will follow the existing CRRDC guidelines and any updates of these guidelines and procedures that may occur during the 2017-2021 period.

The general approach will be to identify and describe objectives and activities, outputs, and outcomes from each selected project investment. Outputs will include both 'use' and 'process' outputs. Economic, environmental and social impacts associated with the outcomes will be identified and described. The cost-benefit analyses will focus on valuing economic impacts with attempts made to value environmental and social impacts where they exist and where reasonable assumptions can be made.

Consistency of Approach

Agtrans Research personnel will provide a consistent approach to the various project evaluations. The approach by Agtrans Research in cost-benefit analyses of rural research investment has been refined over a period of years, so that the resulting estimates of investment criteria reflect reality in a consistent manner. While errors and bias are thus reduced significantly, comparison between project results will still need to be made with caution. Confidence ratings in the investment criteria produced will be provided.

Key considerations in the approach

Guidelines for Cost-Benefit Analysis

The paramount set of guidelines to be used in the analyses will be the guidelines produced by the CRRDC (CRRDC, 2014 – Note this may change if the CRRDC accepts the revisions recently recommended by the CRRDC Evaluation Working group – that FRDC Chairs).

"With" and "Without" Assumptions

Defining the 'without R&D' scenario to assist with defining and quantifying impacts is often one of the more difficult assumptions to make in investment analyses. The 'without' scenario usually lies somewhere between the status quo or business as usual case and the more extreme positions that the research would have happened anyway but at a later time; or the impact would have been delivered anyway through another mechanism. The important issue is that the definition of the 'without' scenario is made as consistently as possible between project analyses.

Attribution

When carrying out impact assessments driven by RD&E, the impact valued may have been dependent on investment other than that of the project being assessed. This is particularly relevant

when assessments are carried out at the project level. Assumptions on attribution factors therefore will need to be considered carefully.

Valuing Economic Impacts

Economic impacts are usually the impacts in cost-benefit analyses that can be valued with most confidence. Economic impacts are usually derived from outcomes that lead to cost-reducing or demand-enhancing changes. Impacts of the project on unit production costs or prices for enterprises involved in an industry are valued and then aggregated by the level of industry adoption already manifest and/or expected. Implementation costs involved in adoption need to be valued and included.

Valuing Social and Environmental Impacts

Examples of environmental and social impacts provided in the CRRDC guidelines that may be of most relevance to FRDC investments include:

Environmental:

- Improvements in freshwater and estuary water quality
- Improvements in sustainability of natural resources
- Improvements in biodiversity and fish habitat values
- Reduction in emissions of greenhouse gases and odours
- Safer and more effective use of chemicals

Social:

- Occupational health and safety
- Food safety
- Animal welfare considerations
- Creation of resilient regional communities
- Building innovation skills for the industry
- Building research skills
- Biosecurity
- Consumer gains

An issue often arises as to whether some impacts are economic or environmental/social, thus exposing a difficulty with the triple bottom line approach. Where the impacts can be separated, this can be managed satisfactorily; however, categorisation issues remain where there are interactions between environmental or social and productivity and other cost saving improvements.

Attempts at non-market valuations for some impacts, particularly environmental and social impacts, may be included in analyses. Agtrans has included non-market valuations in CBAs carried out in the past. This has usually been undertaken through benefit transfer methods that utilise willingness to pay studies from the literature. Agtrans experience with using benefit transfer has resulted in the identification of issues of concern with the technique, and care is taken to ensure that willingness to pay estimates are not transferred inappropriately. Assumptions used when valuing environmental and social impacts need to be clearly defined.

TASK SPECIFICATIONS

Task 1: Define the Population of Completed Projects in Each Year

It is assumed that the population of completed projects each year will be available from FRDC. In the first year, a project must have been completed in the year ended 30th June 2016 to be included in the population. Each year thereafter a revised set of completed projects will be provided by FRDC for the specific year.

Each project will be categorised by FRDC into the five FRDC Programs (Environment, Industry, Communities, People, and Adoption); where some projects address more than one program area, a subjective percentage split between program areas will be provided.

Other information on each completed project that will be provided by FRDC will include:

- Investment approach (lead, collaborate, partner)
- % sectoral assignment (industry, aquaculture, recreational, indigenous and post-harvest)
- the total financial investment in the project (by year)
- the total FRDC investment in the project (by year)
- project length (short, medium, and long-term)
- project risk (low, medium and high)
- research type (applied, strategic)

Some of this information may be used initially in assisting the definition of strata for project selection, as well as in reporting on portfolio balance and performance of the various strata, particularly when sufficient project numbers become available over time.

Task 2: Selection of a Stratified Random Sample

From the characteristics of the completed project populations for each year, statistics on the project population will be developed. Based on these statistics, a stratification plan will be developed so that the selection of a randomised stratified sample that reflects the population (e.g. program

representation, size) can be achieved. This plan will be discussed with FRDC personnel before implementation and adjusted as required.

A stratified random sample of 20 projects will then be drawn from the population using a random number technique.

Task 3: Effect Desktop Analyses

Information will be assembled for each project to be evaluated in each year. An initial desktop analysis will be developed for each project. The information sources will usually include the project proposals, progress reports, review and milestone reports, documentation of any changes to investment timing or budget, the final reports, and any published papers emanating from projects. This information will be made available to the consultants via remote access to the various FRDC databases.

A cost-benefit analysis framework will be established for each project and the impact assessment for each project will be initially analysed qualitatively within this framework. The framework will be based on that described in the CRRDC guidelines. The framework will include the project RD&E costs (including costs for each funder and other industry and in-kind research provider inputs), objectives, outputs to date and expected outputs, and outcomes to date and expected outcomes. Each outcome or expected outcome will be described in terms of its impact, or potential impact, on industry and the environment as well as any social impact. Additional costs associated with adoption, further R&D investment and commercialisation required to capture the impacts valued, will need to be considered and included where appropriate.

An assessment will be made at this stage as to the nature and sources of additional information required for assumptions regarding quantitative assessment.

Task 4: Consult with Researchers and other Stakeholders

A telephone interview will then be held with relevant researchers to discuss the project and the draft assessment. These interviews will also be used to probe for more detailed information and develop specific assumptions. Names of further specialist personnel and other stakeholders who may be able to contribute further to assumptions and/or verification of assumptions made to date will also be identified and then contacted where appropriate.

Consultations will also be held with FRDC Program Managers (where appropriate) to elicit detailed information on the likely outcomes and impacts from the projects.

Consultation with Principal Researchers is likely to be predominantly via telephone and email.

Task 5: Carry out Cost-Benefit Analysis on Each Project

Following the discussions and information obtained in Task 4, the cost-benefit analyses for each project will be completed. Investment criteria including Net Present Value, Benefit-Cost Ratio, Internal Rate of Return, and Modified Internal Rate of Return will be estimated. Some sensitivity analyses will also be carried out for the most important and/or most uncertain assumptions. All assumptions will be clearly defined and documented.

Task 6: Prepare Draft Impact Assessment for each Project

Following the completion of Tasks 3 - 5, a draft report for each of the project impacts assessments conducted in each year will be prepared. The draft reports will include all information required by the CRRDC guidelines (e.g. net benefit graphs, different time horizons). These draft reports will be reviewed by FRDC and AgTrans – and where necessarily with relevant stakeholders.

Task 7: Prepare Final Report for Each Project

Following the receipt and incorporation of comments from FRDC, a final report for each project in each year will be submitted.

Task 8: Prepare Draft Summary Report for Each Year

Following the completion of final reports for each project, an aggregate report will be prepared that summarises the results of all projects evaluated in each year. This will aggregate investment criteria for impacts that can be assigned to various FRDC criteria such as Program and Sector, as well as other splits of the 20 projects.

Task 9: Prepare Final Summary Report for Each Year

Following the receipt and incorporation of comments from FRDC, the final aggregate summary report for each year will be submitted, together with individual project reports as appendices.

DAWR Corporate Plan 2016-17 Targets

Objective 1: Building Successful Primary Industries

- Fishing and Aquaculture record an increase in productivity (**NEW**)
- The rate of return on capital invested across fishing and aquaculture is maintained or increased (**NEW**)
- Investment in FRDC programs demonstrates positive return (**FRDC BCA**)
 - 100% of Rural R&D for profit projects delivered on time
 - FRDC 100% compliant with statutory and regulatory requirements

Objective 2: Supporting agriculture communities

- No link to fishing and aquaculture (about farm support)

Objective 3: Expanding agriculture, fisheries and forestry exports

- The trend in value of fishing and aquaculture exports increases in real terms over time (**ABARES Fisheries and Aquaculture statistics**)
- Export certification meets importing country requirements (**ExDoc**)
- Access to overseas markets accepting Australian seafood exports is gained, maintained or improved (**SafeFish and STAG**)
- Seafood exports increase to countries with which Australia has recently signed FTAs (**ABARES Fisheries and Aquaculture statistics**, <http://frdc.com.au/trade/Pages/MarketDashboard.aspx>)
 - International standards to support Australian seafood exports are maintained or improved (**SafeFish - codex**)

Objective 4: Sustaining natural resources for longer term productive primary industries

- An increased percentage of fishing and aquaculture businesses use sustainable management practises (**Status of Australian Fish Stocks**)
- The status of the resource base is maintained or improved
 - The percentage of stocks solely managed by the Commonwealth that are not overfished was maintained or increased in the previous year (**Status of Australian Fish Stocks**)

Objective 5: Improving water efficiency and the health of rivers, communities, environmental assets and production systems

- No link to fishing and aquaculture (about water in agriculture)

Objective 6: Managing biosecurity and imported food risk

- The ability of governments, industry and the community to quickly and effectively respond to exotic pest and disease incursions improves (**Aquatic Animal Health and Biosecurity Subprogram**)
 - 100\$ of emergency plans (Aquavetplan) reflect contemporary science of emergency responses to plant and animal pests and diseases

Objective 7: Building an efficient and capable department

- Stakeholders and clients assess advice and analysis as high-quality, evidence based, accurate and meeting their needs (**FRDC Stakeholder survey**)
 - 80% of underpinning research, advice, forecast, project, products and data services meet stakeholder expectations and delivered against agreed time frames