



FINAL REPORT

# **An Impact Assessment of Investment in FRDC Project 2018-207:**

**Bursaries for emerging leaders in the Southern rock lobster  
industry to attend the 2019 Trans-Tasman Lobster Congress**

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**An Impact Assessment of Investment in FRDC Project 2018-207: Bursaries for emerging leaders in the Southern rock lobster industry to attend the 2019 Trans-Tasman Lobster Congress  
FRDC Project 2016-134**

2022

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In submitting this report, the researcher has agreed to FRDC publishing this material in its edited form.

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Acknowledgment of assistance in contacting bursary holders is made to Tom Cosentino (Executive Officer, Southern Rocklobster Ltd). Also, responses from six of the eight bursary recipients who provided information on their bursary experience is gratefully acknowledged.

# Abbreviations

AA	Agreed Amendment
ABS	Australian Bureau of Statistics
ARLEA	Australian Rock Lobster Exporters Association
CBA	Cost-Benefit Analysis
CRRDC	Council of Rural Research and Development Corporations
DAWR	Department of Agriculture and Water Resources
FRDC	Fisheries Research and Development Corporation
MIRR	Modified Internal Rate of Return
OCS	Office of the Chief Scientist
R&D	Research and Development
RD&E	Research, Development and Extension
SARLAC	South Australian Rock Lobster Advisory Council Inc
SEPFA	South East Professional Fishermen's Association
SRL	Southern Rock Lobster
TRLFA	Tasmanian Rock Lobster Fishermen's Association
VRLA	Victorian Rock Lobster Association
\$m	million dollars

# Executive Summary

The Australian Southern Rock Lobster (SRL) industry contributes around \$250 million in landed seafood value to the Australian economy each year. The industry operates across three states (South Australia, Tasmania and Victoria) and harvests over 3,000 tonnes of lobster annually. The SRL industry is represented by Southern Rocklobster Ltd, the national peak industry body governed by a Board including an Independent Chairperson, two representatives from each of the member organisations, together with positions accommodating independent scientific and market-based expertise. The Board is resourced by an Executive Officer (Southern Rocklobster Ltd, 2021).

A national conference has been held by SRL biennially since 1999 and now includes both the Australian and New Zealand rock lobster industries. The conference is now titled the-Trans Tasman Rock Lobster Congress and gives the opportunity to those attending to extend knowledge and experiences from other rock lobster industries and jurisdictions. In this regard, the Congress is a capacity building experience for both the individuals attending as well as for the SRL industry as a whole.

As conference attendance was viewed by the industry as beneficial to the industry, it was deemed appropriate to assist Australian attendees with travel costs. Each of the four Australian SRL industry groups were asked to nominate two emerging leaders for a travel assistance bursary to attend the 2019 conference in New Zealand.

Each of the travel bursary recipients provided short reports to Southern Rock Lobster Ltd after returning from the 2019 Congress. New knowledge and ideas were gained that had application in their own lobster industries back in Australia. One avenue for change was the strengthening and broadening of individual knowledge of recipients; this included greater understanding of current and potential future issues facing industry associations and how they might be addressed. For example, the recreational lobster tagging initiative in Victoria was lauded and there was a consensus that similar initiatives could be used in other jurisdictions to assess the quantum of recreationally caught lobsters.

Potential impacts of the investment in the travel bursaries included:

- Application of new information that may reduce the future costs of SRL production in some regions of Australia.
- Continued and/or improved effectiveness of stock assessments and sustainable management of SRL industries in Australia.
- Contribution to increased capability and capacity with respect to future management of some SRL industries in Australia.

A number of the eight bursary holders reported that the experience has broadened their knowledge and contributed to them making enhanced future contributions to the industry. One pathway for these enhanced contributions is the development of industry leadership potential.

Overall, the small investment in the bursaries will likely lead to a range of economic, environmental, and social impacts. Funding for the project over the one year totalled \$0.03 million (present value terms). A single impact was valued and produced estimated total net benefits at \$0.07 million (present value terms). This gave a net present value of \$0.04 million, a benefit-cost ratio of 2.18 to 1, an internal rate of return of 12.8% and a modified internal rate of return of 8.1%.

The set of investment criteria estimated are uncertain due to the lack of strong evidence supporting the single impact valued. On the other hand, several other potential impacts were identified but not valued in monetary terms. Hence, the investment criteria as provided by the valued benefit are likely to be an underestimate of the total value of the project investment.

# Introduction

The Fisheries Research and Development Corporation (FRDC) required an annual series of impact assessments to be carried out on a sample of completed investments from the FRDC research, development, and extension (RD&E) portfolio. The assessments were required to meet the following FRDC evaluation reporting requirements:

- Reporting against the FRDC 2015-2020 RD&E Plan and the Evaluation Framework associated with FRDC's Statutory Funding Agreement with the Commonwealth Government.
- Annual Reporting to FRDC funding partners and other stakeholders.
- Reporting to the Council of Rural Research and Development Corporations (CRRDC).
- Reporting RD&E impact and performance to FRDC levy payers and other fisheries and aquaculture stakeholders as well as the broader Australian community.

In April 2017, FRDC commissioned Agtrans Pty Ltd (Agtrans) to undertake the annual impact assessments for RD&E projects funded under the FRDC 2015-2020 RD&E Plan and completed in the years ended 30 June 2016 to 2020 (FRDC Project 2016-134). Between 2016/17 and 2020/21, four series of annual impact assessments were completed. Each of the four series of assessments included a set of 20 randomly selected FRDC RD&E investments as well as an aggregate analysis across all 20 investments evaluated in each year. Published reports for the annual FRDC evaluations can be found at: <https://www.frdc.com.au/frdc-project-impact-assessments-benefits-research>.

The fifth and final series of impact assessments under Project 2016-134 was for a set of FRDC RD&E investments completed in the year ended 30 June 2020, the final year of the FRDC 2015-2020 RD&E Plan. As in previous years, the fifth series of impact assessments included 20 randomly selected FRDC RD&E investments. The 20 investments had a total value of approximately \$5.30 million (nominal FRDC investment) and were selected from an overall population of 81 FRDC investments worth an estimated \$17.66 million (nominal FRDC investment) where a final deliverable had been submitted in the 2019/20 financial year.

The 20 RD&E investments were selected through a stratified, random sampling process such that investments chosen spanned all five FRDC Programs (Environment, Industry, Communities, People and Adoption), represented approximately 30.0% of the total FRDC RD&E investment in the overall population (in nominal terms), and included a selection of small, medium, and large FRDC investments (total nominal FRDC investment of  $\leq$  \$50,000, \$50,001 to \$250,000, and  $>$  \$250,000 respectively).

*Project 2018-207: Bursaries for emerging leaders in the Southern rock lobster Industry to attend the 2019 Trans-Tasman Lobster Congress* was randomly selected as one of the 20 RD&E investments completed in 2019/20 for evaluation in the fifth series of annual impact assessments (2019/20 sample). The current report presents the Project 2018-207 analysis and findings.

# Method

The annual impact assessments of FRDC RD&E investments followed general evaluation guidelines that are now well entrenched within the Australian primary industry research sector including Research and Development Corporations, Cooperative Research Centres, State Departments of Agriculture, and some universities. The approach includes both qualitative and quantitative assessment components that are in accord with the current [guidelines for impact assessment](#) published by the CRRDC (CRRDC, 2018).

The evaluation process utilised an input to impact continuum RD&E project inputs (costs), objectives, activities, and outputs were briefly described and documented. Actual and expected outcomes, and any actual and/or potential future impacts (positive and/or negative) associated with project outcomes then were identified and described. The principal economic, environmental, and social impacts were then summarised in a triple bottom line framework and validated through consultation with expert personnel and review of published literature.

Once impacts were identified and validated, an assessment then was made about whether to quantify/value any of the impacts in monetary terms as part of the project-level analysis. The decision to value an impact identified was based on:

- Data availability and information necessary to form credible valuation assumptions,
- The complexity of the relevant valuation methods applicable given project resources,
- The likely magnitude of the impact and/or the expected relative value of the impact compared to other impacts identified, and
- The strength of the linkages between the RD&E investment and the impact identified.

Where one or more of the identified impacts were selected for valuation, the impact assessment used cost-benefit analysis (CBA) as a principal tool. The impacts valued therefore were deemed to represent the principal benefits delivered by the project investment. However, as not all impacts were valued (based on the selection criteria), the investment criteria estimated for the project investment evaluated are likely to represent an underestimate of the true performance of the FRDC project.

The qualitative and quantitative analysis processes, data sources, assumptions, specific valuation frameworks (where applicable), and evaluation results were clearly documented and then integrated into a written report.



# Project Background

## Background

The Australian Southern Rock Lobster (SRL) industry is a significant Australian fishing industry. The industry contributes around \$250 million in landed seafood value to the Australian economy each year (Southern Rock Lobster Ltd, 2021). The industry operates across three states (South Australia, Tasmania and Victoria) and harvests over 3,000 tonnes of lobster each year. The members of the SRL industry include the South Australian Rock Lobster Advisory Council Inc. (SARLAC), the Tasmanian Rock Lobster Fishermen's Association (TRLFA), the Victorian Rock Lobster Association (VRLA), and the Australian Southern Rock Lobster Exporters Association (ARLEA).

The SRL industry is represented by Southern Rock Lobster Ltd. The national peak industry body is governed by a Board including an Independent Chairperson, two representatives from each of the member organisations, together with positions accommodating independent scientific and market-based expertise. The Board is resourced by an Executive Officer (Southern Rock Lobster Ltd,2021).

A national conference has been held by Southern Rock Lobster Ltd biennially since 1999 and now includes both the Australian and New Zealand rock lobster industries. The conference is now titled the-Trans Tasman Rock Lobster Congress and gives the opportunity to those attending to extend knowledge and experiences from other rock lobster industries and jurisdictions. In this regard, the conference was as a capacity building experience for both the individuals attending as well as for the SRL industry as a whole.

## Rationale for Project 2018-2019

As conference attendance was viewed by the industry as beneficial to the industry, it was deemed appropriate to assist Australian attendees with travel costs. Each of the four Australian SRL industry groups were asked to nominate two emerging leaders for travel assistance through travel bursaries to attend the 2019 conference in New Zealand. Project 2018-2019 was funded to provide the SRL travel bursaries for the 2019 conference.

# Project Details

## Summary

Project Code: 2018-207
Title: <i>Bursaries for emerging leaders in the Southern rock lobster industry to attend the 2019 Trans-Tasman Lobster Congress</i>
Research Organisation: Southern Rock Lobster Limited
Principal Investigator: Tom Cosentino, Executive Officer, Southern Rock Lobster Limited
Period of Funding: June 2019 to October 2019
FRDC Program Allocation: People 100%

## Objective

1. To provide a bursary to eight emerging industry leaders to attend the 2019 Trans-Tasman Lobster Congress in Queenstown, New Zealand.

## Logical Framework

Table 1 provides a description of the project in a logical framework developed for the evaluation. Table 2 provides some comments on the value of the bursary received from six of the eight bursary recipients.

Table 1: Logical Framework for FRDC Project 2018-207

Activities	<p><u>Selection of individual bursary recipients</u></p> <ul style="list-style-type: none"> <li>• The four SRL industry groups (TRLFA, VRLA, ARLEA, and SARLAC) each submitted names of two personnel for potential travel bursary support.</li> <li>• The bursary support was offered to the eight personnel nominated.</li> </ul> <p><u>Attendance of bursary holders at the 2019 Trans-Tasman Lobster Congress in Queenstown, New Zealand</u></p> <ul style="list-style-type: none"> <li>• The eight bursary holders attended the 2019 Congress in New Zealand.</li> <li>• The bursary holders included Simon Nash and Matt Phillips (VRLA), Iain Evans and Tim Harding (SARLAC), Cameron Smith and Jayson Hart (TRLFA), and Cameron McDonald and Matt Wray (ARLEA)</li> </ul> <p><u>Reporting back</u></p> <ul style="list-style-type: none"> <li>• Each of the bursary holders provided a short report on their return.</li> </ul>
Outputs	<ul style="list-style-type: none"> <li>• Interactions and discussions by bursary holders with representative from other SRL locations in Australia, and from the New Zealand industry.</li> <li>• Eight short reports to SRL after returning from the Congress.</li> </ul>
Outcomes	<ul style="list-style-type: none"> <li>• The bursary support for attending the Congress gave the opportunity to those supported to attend.</li> <li>• Bursary holders submitted summaries of take-home messages to the Executive Office of Southern Roc Lobster Ltd; this was done by phone calls and emails.</li> <li>• New knowledge and ideas were gained that could be applied in their own lobster industries back in Australia.</li> <li>• The bursary recipients, many of whom spend much of their work time in remote and regional communities, valued their attendance at the Congress.</li> </ul>

	<ul style="list-style-type: none"> <li>• Key avenues for this were strengthening of individual knowledge of recipients, including greater understanding of current and potential future issues facing industry associations and how they might be addressed.</li> <li>• For example, the recreational lobster tagging initiative in Victoria was lauded and there was a consensus that similar initiatives could be used in other jurisdictions to assess the quantum of recreationally caught lobsters.</li> </ul>
Impacts	<p>Potential impacts could include:</p> <ul style="list-style-type: none"> <li>• Application of new information that may reduce the future costs of SRL production in some regions of Australia.</li> <li>• Continued and/or improved effectiveness of stock assessments and sustainable management of SRL industries in Australia.</li> <li>• Contribution to increased capability and capacity with respect to future management of some SRL industries in Australia.</li> <li>• Effective succession planning directly influencing the maintenance of capable leadership of some Australian SRL industries.</li> <li>• Increased social license to operate; this could impact premium market access, increased and or resilient market access</li> <li>• Sustained or increased access to a secure, healthy food resource</li> </ul>

Table 2: Comments Received from Six of the Eight Individual Bursary Recipients

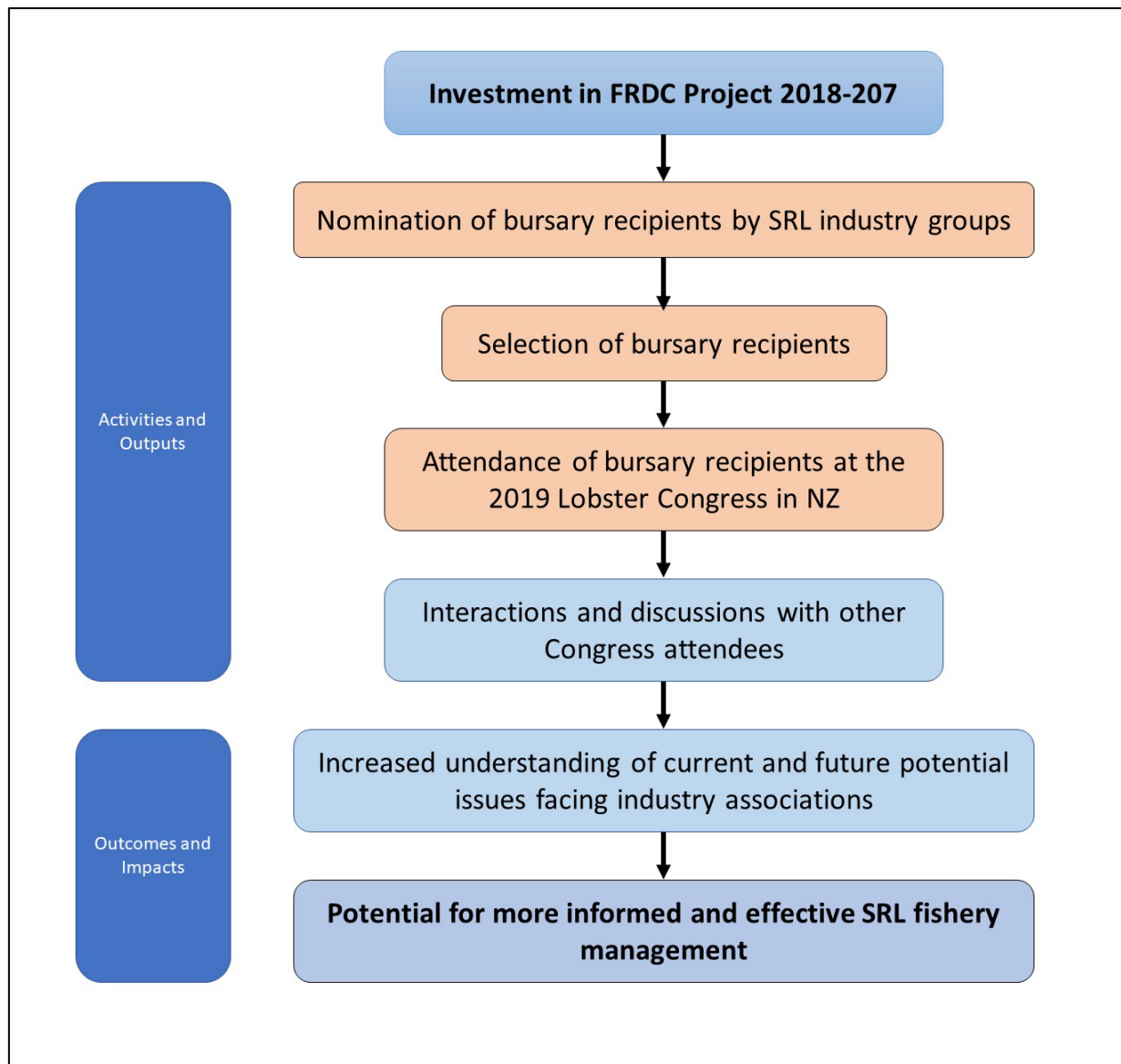
<b>Bursary Recipient</b>	<b>Comments Received</b>
Respondent 1	<ul style="list-style-type: none"> <li>• I am the independent Chair of a Lobster Fisherman’s Association; prior to accepting this role I had not worked in the fishing sector.</li> <li>• Attending the conference gave me a great insight to the issues facing the industry; how the industry works, regulatory burdens, the biosecurity risk, world markets and industry reform issues.</li> <li>• It gave me a chance to sit and talk to fishers and better understand how they see the industry and the issues faced. I apply the knowledge gained when I chair the various meetings and can better relate to the issues raised by the membership.</li> </ul>
Respondent 2	<ul style="list-style-type: none"> <li>• Since receiving the bursary as a new President of our industry association SEPFA (South East Professional Fishermen’s Association) a lot has happened – including COVID Market disruptions and ongoing political issues with China (our largest market) and, because of this, heavy metal testing.</li> <li>• I have had numerous meetings with Government Ministers, and I feel the experience gained from the Congress has given me the confidence to do so and express where we are at as an industry.</li> <li>• I have also taken on a role as a board member at SARLAC which is another industry body with more of a higher level/political focus.</li> <li>• I believe that the bursary was well worthwhile and should be encouraged to continue for any future events.</li> </ul>
Respondent 3	<ul style="list-style-type: none"> <li>• The bursary helped me understand how the industry ran. Previously, I had no idea how each state managed their lobster Industry. It allowed me to get an insight to the purpose of the different industry bodies and associations and how they worked in conjunction with each other to develop legislation and projects.</li> <li>• During the trade show I was able to talk with a company that was showing their water quality testing equipment. This really interested me, and I ended up doing more research into the company and alternatives after the Congress. I was able to</li> </ul>

	<p>implement new water quality testing procedures for my facility, which allowed me to test our water more frequently. Even though the product that I ended up using wasn't the one from the trade show, I was incentivised by it and was able to find a product that fit better.</p> <ul style="list-style-type: none"> <li>• I found it invaluable networking and creating relationships with people within the industry; however, my company does not need me to be a part of an industry body or an association in my current role. I think the Congress had me reassess why I was in this industry. In the future if my situation changes, I will look into contributing in this way, but at this stage in my career I'm fine with my company's decision.</li> <li>• Currently, I'm a technician at a major lobster processing company and my role has been expanded to Quality Assurance/ Quality Control at one facility. I've also been placed in charge of managing our Agreed Amendment (AA) and the audits associated with it. My company recently purchased another company and now has three more factories, which I will most likely be required to develop/ configure the AA for those factories as well.</li> </ul>
Respondent 4	<ul style="list-style-type: none"> <li>• As I am a young fisher, the bursary has helped me in many ways; firstly, it has given me information about the whole industry and how big it is, and my horizons have been expanded.</li> <li>• I have more confidence to speak from the floor at meetings and get involved in industry matters.</li> <li>• I was asked to go on an Industry Board but did not take up the offer as I needed to put my family first.</li> <li>• The bursary assisted me in the importance of educating the public regarding the sustainable fishing practices of the industry (e.g. quotas, seasons etc.); in this regard, I have already given three presentations at schools about sustainable fishing.</li> </ul>
Respondent 5	<ul style="list-style-type: none"> <li>• The bursary gave me information about how the industry works from state to state and country to country.</li> <li>• It was a great experience and very informative; I learned a lot.</li> <li>• The experience gave me the confidence to join a rock lobster committee.</li> <li>• Many industry aspects have changed since the congress; we do not deal with China anymore as we rely more on the domestic market.</li> </ul>
Respondent 6	<ul style="list-style-type: none"> <li>• I am no longer employed in the SRL industry, having left in 2020 to pursue a career in the timber industry.</li> <li>• However, the bursary support enabled me the opportunity to learn about the direction of the SRL industry, to meet likeminded leaders, and enabled me to succeed in job interviews, noted as a worthy recipient from the Southern Rock Lobster Ltd &amp; FRDC board.</li> <li>• The bursary has impacted my professional development and contributed by giving me the urge to want to 'give back' to other emerging leaders within my own industry and enrolling them into professional development courses.</li> <li>• The key learning from the congress was 'sustainability' which is a vital component of any industry working with naturally occurring substance (e.g. Lobster or Timber). These learnings must continue to happen for the future leaders to acknowledge and understand.</li> </ul>

## Pathway to Impact

A diagram describing the simplified pathways to impact for the investment in Project 2018-207 is provided in Figure 1.

Figure 1: Pathway to Impact for Project 2018-207



## Nominal Investment

Table 3 shows the annual investment made in Project 2018-207 by FRDC, as indicated in Table 2.

Table 3: Annual Investment in Project 2018-207 (nominal \$)

Year ended 30 June	FRDC (\$)	TOTAL (\$)
2019	21,225.38	21,225.38
Totals	21,225.38	21,225.38

Source: FRDC Project Agreement, FRDC Financial Acquittal

## **Program Management Costs**

For the FRDC investment, the cost of managing the FRDC funding was added to the FRDC contribution for the project via a management cost multiplier (x1.179). This multiplier was estimated based on the share of 'employee benefits' and 'supplier' expenses in total FRDC expenditure reported in the FRDC's Cash Flow Statement (FRDC, 2017-2021). This multiplier then was applied to the nominal investment by FRDC shown in Table 3.

## **Real Investment and Extension Costs**

For purposes of the investment analysis, the investment costs of all parties were expressed in 2020/21 dollar terms using the Implicit Price Deflator for Gross Domestic Product (ABS, 2021). No additional costs of extension were included as the outcomes and impacts were largely driven by project activities including communication carried out within and after the project.

# Impacts

Table 4 provides a summary of the principal types of impacts expanded from those listed in Table 1 and categorised into economic, environmental and social impacts.

Table 4: Triple Bottom Line Categories of Principal Impacts from Project 2018-207

Economic	<ul style="list-style-type: none"> <li>• Potential for more efficient and lower unit cost of SRL fishing in some Australian locations due to the transfer of activities and potential ideas between Congress attendees.</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>• Potential contribution to a retention or improvement in environmental management of some Australian SRL fisheries, this could contribute to more sustainable management measures</li> </ul>
Social	<ul style="list-style-type: none"> <li>• Effective succession planning directly influencing the maintenance of capable leadership of some Australian SRL industries.</li> <li>• Increased social license to operate; this could impact premium market access, increased and or resilient market access</li> <li>• Sustained or increased access to a secure, healthy food resource</li> </ul>

## Public versus Private Impacts

The impacts identified in this evaluation are directly related to effective management of SRL industries in southern Australian waters. Potentially, both private and public impacts may have been delivered by the investment in the project. The public impacts may include an increased sustainability status of some Australian SRL industries and the more effective succession planning driving capable future leadership of SRL industries. The private impacts potentially include a lower future operating cost of catching Southern Rock Lobster in southern Australian waters, increased social license to operate and potential for premium, sustained and/or expanded market access.

## Distribution of Private Impacts

Any long-term private benefits will be captured predominantly by Australian SRL fishers, as well as the supply chains with which they interact. Such private benefits likely will be shared by members of the various SRL supply chains according to associated supply and demand elasticities. Hence, communities servicing the SRL industries are likely to gain also.

## Impacts on Other Australian Industries

It is expected that there would be negligible impacts on other Australian primary industries.  
Impacts Overseas

## Impacts Overseas

It is likely that a two-way flow of information occurred at the Congress, with New Zealand lobster fishers benefiting from interaction with Australian fishers.

## Match with National Priorities

### Australian Agriculture, Science, and Research Priorities

The Australian Government’s National Science and Research Priorities and Agricultural Innovation Priorities are reproduced in Table 5. Project 2018-207 potentially indirectly contributed to National Science and Research Priorities 1 and 2. Further, the RD&E investment is likely to contribute indirectly to all four Agricultural Innovation Priorities because of increased industry knowledge and leadership capacity of SRL conference attendees.

Table 5: Australian R&amp;D Priorities

<b>Australian Government</b>	
<b>National Science and Research Priorities<sup>1</sup></b>	<b>National Agricultural Innovation Priorities<sup>2</sup></b>
<ol style="list-style-type: none"> <li><b>1. Food</b> – optimising food and fibre production and processing; agricultural productivity and supply chains within Australia and global markets.</li> <li><b>2. Soil and Water</b> – improving the use of soils and water resources, both terrestrial and marine.</li> <li><b>3. Transport</b> – boosting Australian transportation: securing capability and capacity to move essential commodities; alternative fuels; lowering emissions.</li> <li><b>4. Cybersecurity</b> – improving cybersecurity for individuals, businesses, government, and national infrastructure.</li> <li><b>5. Energy and Resources</b> – supporting the development of reliable, low cost, sustainable energy supplies and enhancing the long-term viability of Australia’s resources industries.</li> <li><b>6. Manufacturing</b> – supporting the development of high value and innovative manufacturing industries in Australia.</li> <li><b>7. Environmental Change</b> – mitigating, managing, or adapting to changes in the environment.</li> <li><b>8. Health</b> – improving the health outcomes for all Australians.</li> </ol>	<p>On 11 October 2021, the National Agricultural Innovation Policy Statement was released. It highlights four long-term priorities for Australia’s agricultural innovation system to address by 2030. These priorities replace the Australian Government’s Rural Research, Development and Extension Priorities which were published in the 2015 Agricultural Competitiveness White Paper.</p> <ol style="list-style-type: none"> <li><b>1.</b> Australia is a trusted exporter of premium food and agricultural products by 2030.</li> <li><b>2.</b> Australia will champion climate resilience to increase the productivity, profitability, and sustainability of the agricultural sector by 2030.</li> <li><b>3.</b> Australia is a world leader in preventing and rapidly responding to significant incursions of pests and diseases through futureproofing our biosecurity system by 2030.</li> <li><b>4.</b> Australia is a mature adopter, developer, and exporter of digital agriculture by 2030.</li> </ol>

### FRDC National RD&E Priorities

Through extensive consultation, the FRDC 2015-2020 RD&E Plan identified three national RD&E priorities to focus and direct FRDC investments. The three FRDC national RD&E priorities were:

1. Ensuring that Australian fishing and aquaculture products are sustainable and acknowledged to be so.
2. Improving productivity and profitability of fishing and aquaculture.
3. Developing new and emerging aquaculture growth opportunities.

Project 2018-207 indirectly addressed all three FRDC national RD&E priorities by building capability and capacity through knowledge sharing and developing leadership skills for SRL 2019 conference attendees.

<sup>1</sup> Source: 2015 Australian Government *Science and Research Priorities*. <https://www.industry.gov.au/data-and-publications/science-and-research-priorities>.

<sup>2</sup> Source: 2021 National Agriculture Innovation Policy Statement. [https://www.awe.gov.au/agriculture-land/farm-food-drought/innovation/research\\_and\\_development\\_corporations\\_and\\_companies#government-priorities-for-investment](https://www.awe.gov.au/agriculture-land/farm-food-drought/innovation/research_and_development_corporations_and_companies#government-priorities-for-investment).



# Valuation of Impacts

## Impacts Valued

One impact was valued in the assessment of FRDC Project 2018-207. The impact valued is:

- An increased effectiveness of management of some SRL industries in Australia leading to a potential contribution to a more cost efficient and profitable industry.

### **Valuation of Impact 1: Increased management effectiveness of some Australian SRL industries**

The total annual contribution of SRL industries has been reported as \$250 million in landed seafood value to the Australian economy (Southern Rock Lobster Ltd, 2021). Recreational fishers also catch rock lobsters but the value of their catch is assumed not to have been included in the above estimate.

The contribution of FRDC project 2018-207 to the SRL industry is valued through a small increase in efficiency of catching SRL. This small efficiency increase has been assumed due to the attendance of influential SRL fishers at the 2019 Congress and associated exchange of ideas that may have been implemented, or at least, influenced subsequent rate of uptake either at an individual or group level. Specific assumptions are provided in Table 6.

## Impacts Not Valued

Not all of the five impacts identified in Table 4 could be valued in the assessment. The potential environmental and social impacts were hard to value because of the difficulty in quantifying the causal relationships and pathways between the development of future leadership capability for SRL management and the specific future environmental and social impacts likely to be delivered. These difficulties in credible valuations were exacerbated by the lack of available evidence and appropriate data.

The environmental impact identified but not valued included:

- Potential contribution to a retention or improvement in environmental management of some Australian SRL fisheries. While this impact was not valued specifically, it was effectively taken into account in the management effectiveness benefit where policy and management decision making, using economic principles, inherently accommodates environmental considerations in order to maintain the biodiversity, ecology and profitability of the marine lobster resource.

The social impacts identified but not valued included:

- Effective succession planning directly influencing the maintenance of capable leadership of some Australian SRL industries.
- Increased social license to operate, which could impact premium market access, increased and or resilient market access
- Sustained or increased access to a secure, healthy food resource

## Summary of Assumptions

Table 6 presents the specific assumptions used in the impact valuation.

Table 6: Summary of Assumptions

Variable	Assumption	Source
<b>Current value of SRL caught commercially in Australia</b>		
Value of SRL landed catch per annum	\$250 million in landed seafood value to the Australian economy each year	Southern Rocklobster Ltd (2021)
Profit as a percentage of landed catch value	10%	Sala et al. (2018)
Estimate of profit as percentage of landed value after project	10.5%	Agtrans Research
Proportion of SRL industry achieving a gain in profit due to information gained from Congress	5%	
Year in which profit gains commence	Year ended June 2021	
<b>Risk factors and counterfactual</b>		
Probability of outcomes occurring	25%	Agtrans Research
Probability of impacts occurring given successful outcomes	25%	
Counterfactual	Impact assumed would not have occurred without the project	

# Results

All past costs and benefits were expressed in 2020/21 dollar terms. All costs and benefits were discounted to 2021/22 using a discount rate of 5%. A reinvestment rate of 5% was used for estimating the Modified Internal Rate of Return (MIRR). The base analysis used the best available estimates for each variable, notwithstanding a level of uncertainty for many of the estimates. All analyses ran for the length of the investment period plus 30 years from the last year of investment (2018/19) to the final year of benefits assumed.

## Investment Criteria

Tables 7 and 8 show the investment criteria estimated for different periods of benefits for the total investment and FRDC investment respectively. As FRDC contributed all funding for the project, the investment criteria for the total investment and the FRDC investment (Tables 7 and 8) are the same.

Table 7: Investment Criteria for Total Investment in Project 2018-207

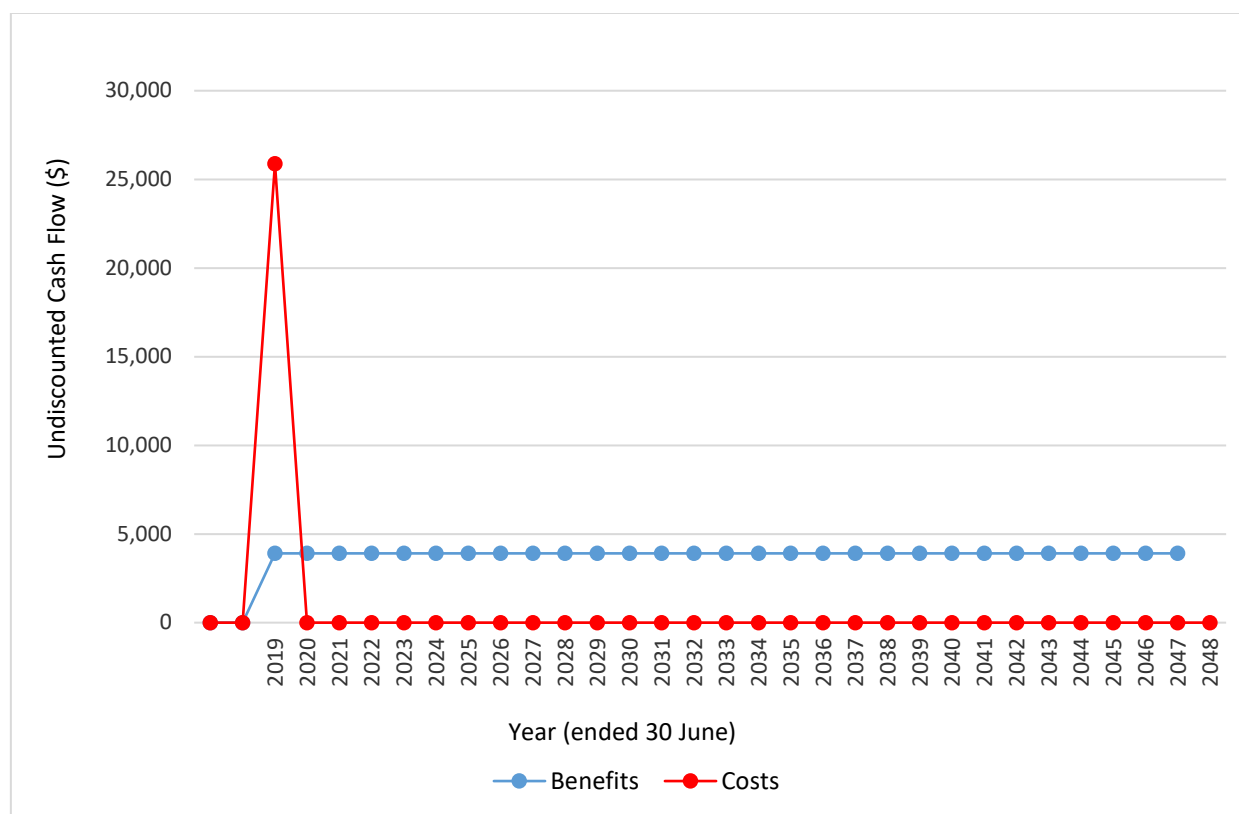
Investment criteria	Number of years from year of last investment						
	0	5	10	15	20	25	30
Present value of benefits (\$m)	0.00	0.02	0.03	0.04	0.05	0.06	0.07
Present value of costs (\$m)	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Net present value (\$m)	-0.03	-0.01	0.00	0.01	0.02	0.03	0.04
Benefit-cost ratio	0.00	0.51	1.02	1.42	1.74	1.98	2.18
Internal rate of return (%)	negative	negative	5.0	10.1	11.9	12.5	12.8
MIRR (%)	negative	negative	5.3	8.1	8.5	8.3	8.1

Table 8: Investment Criteria for FRDC Investment in Project 2018-207

Investment criteria	Number of years from year of last investment						
	0	5	10	15	20	25	30
Present value of benefits (\$m)	0.00	0.02	0.03	0.04	0.05	0.06	0.07
Present value of costs (\$m)	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Net present value (\$m)	-0.03	-0.01	0.00	0.01	0.02	0.03	0.04
Benefit-cost ratio	0.00	0.51	1.02	1.42	1.74	1.98	2.18
Internal rate of return (%)	negative	negative	5.0	10.1	11.9	12.5	12.8
MIRR (%)	negative	negative	5.3	8.1	8.5	8.3	8.1

The annual undiscounted benefit and cost cash flows for the total investment for the duration of investment period plus 30 years from the last year of investment are shown in Figure 2.

Figure 2: Annual Cash Flow of Undiscounted Total Benefits and Total Costs



## Sensitivity Analyses

A sensitivity analysis was carried out on the discount rate. The analysis was performed for the total investment and with benefits taken over the life of the investment plus 30 years from the last year of investment. All other parameters were held at their base values. Table 9 presents the results. The results showed a moderately low sensitivity to the discount rate, largely due to the benefit period assumed to commence reasonably soon after the project was completed.

Table 9: Sensitivity to Discount Rate  
(Total investment, 30 years)

Investment Criteria	Discount rate		
	0%	5% (base)	10%
Present value of benefits (\$m)	0.11	0.07	0.04
Present value of costs (\$m)	0.03	0.03	0.03
Net present value (\$m)	0.09	0.04	0.01
Benefit-cost ratio	4.38	2.18	1.29

A sensitivity analysis also was undertaken also on the proportion of the SRL industry gaining from the bursary support. Results are shown in Table 10. For the project investment to break even, there would need to be at least 2.3% of the industry receiving the assumed benefit.

Table 10: Sensitivity to Assumption of the Proportion of the SRL Industry Gaining from the Project Investment (Total investment, 30 years, 5% discount rate)

Investment Criteria	Proportion of SRL Industry Gaining		
	2.5% (pessimistic)	5% (base)	7.5% (optimistic)
Present value of benefits (\$m)	0.03	0.07	0.10
Present value of costs (\$m)	0.03	0.03	0.03
Net present value (\$m)	0.00	0.04	0.07
Benefit-cost ratio	1.09	2.18	3.27

## Confidence Ratings and other Findings

The results produced are highly dependent on the assumptions made, some of which are uncertain. There are two factors that warrant recognition. The first factor is the coverage of benefits. Where there are multiple types of benefits it is often not possible to quantify all the benefits that may be linked to the investment. The second factor involves uncertainty regarding the assumptions made, including the linkage between the research and the assumed outcomes.

A confidence rating based on these two factors has been given to the results of the investment analysis (Table 11). The rating categories used are High, Medium and Low, where:

- High: denotes a good coverage of benefits or reasonable confidence in the assumptions made
- Medium: denotes only a reasonable coverage of benefits or some uncertainties in assumptions made
- Low: denotes a poor coverage of benefits or many uncertainties in assumptions made

Table 11: Confidence in Analysis of Project

Coverage of Benefits	Confidence in Assumptions
Medium-Low	Low

The coverage of benefits was assessed as Medium-Low. Although only one of the five impacts identified in Table 4 was valued, the value of each of the four impacts not valued were considered minor relative to the impact valued.

For the impact valued, the assumptions associated with the increase in profit as a percentage of landed value due to the project, as well as the proportion of SRL industry achieving a gain in profit due to Congress attendance, were not well supported by evidence. Hence, the overall rating of confidence in the assumptions was considered Low.

# Conclusions

The overall finding of the evaluation of the investment in Project 2018-207 was that the travel bursaries supported effective capacity building for the Australian southern rock lobster industry. This has resulted in some bursary recipients experiencing information exchange and networking opportunities, and is likely to result in future efficiency gains to the industry. In addition, the project investment has enhanced future industry leadership potential for the various southern rock lobster regional industries. Overall, the investment in the project will likely lead to a range of economic, environmental, and social impacts in the future.

Funding for this small project over the one year totalled \$0.03 million (present value terms). A single impact was valued and produced estimated total net benefits of \$0.07 million (present value terms). This gave a net present value of \$0.04 million, a benefit-cost ratio of 2.18 to 1, an internal rate of return of 12.8% and a modified internal rate of return of 8.1%.

The set of investment criteria estimated are uncertain due to the lack of evidence supporting the single impact valued. On the other hand, several other potential impacts were identified but not valued in monetary terms. Hence, the investment criteria as provided by the valued benefit are likely to be an underestimate of the total value of the project investment.

# Glossary of Economic Terms

Cost-benefit analysis:	A conceptual framework for the economic evaluation of projects and programs in the public sector. It differs from a financial appraisal or evaluation in that it considers all gains (benefits) and losses (costs), regardless of to whom they accrue.
Benefit-cost ratio:	The ratio of the present value of investment benefits to the present value of investment costs.
Discounting:	The process of relating the costs and benefits of an investment to a base year using a stated discount rate.
Internal rate of return:	The discount rate at which an investment has a net present value of zero, i.e., where present value of benefits = present value of costs.
Investment criteria:	Measures of the economic worth of an investment such as Net Present Value, Benefit-Cost Ratio, and Internal Rate of Return.
Modified internal rate of return:	The internal rate of return of an investment that is modified so that the cash inflows from an investment are re-invested at the rate of the cost of capital (the re-investment rate).
Net present value:	The discounted value of the benefits of an investment less the discounted value of the costs, i.e., present value of benefits - present value of costs.
Present value of benefits:	The discounted value of benefits.
Present value of costs:	The discounted value of investment costs.

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