



**ECONOMIC AND SOCIAL INDICATORS
FOR THE SOUTH AUSTRALIAN
SOUTHERN ZONE ROCK LOBSTER
FISHERY, 2021/22**

**A Report for the Department of
Primary Industries and Regions**

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ABBREVIATIONS

ABS	Australian Bureau of Statistics
CPI	Consumer Price Index
FRDC	Fisheries Research and Development Corporation
fte	full time equivalent
GOS	gross operating surplus
GRP	gross regional product
GSP	gross state product
GVP	gross value of production
NER	net economic rent
PIRSA	Department of Primary Industries and Regions
R&M	repairs and maintenance
RBA	Reserve Bank of Australia
SA	South Australia
SARDI	South Australian Research and Development Institute
SZRL	Southern Zone Rock Lobster
TACC	total allowable commercial catch

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EXECUTIVE SUMMARY

The objective of this report is to present a set of economic and social performance indicators for the Southern Zone Rock Lobster (SZRL) Fishery for 2021/22 as well as to develop a consistent time series of economic and social information to aid management of the fishery in future years. The economic and social indicators detailed in this report are summarised below.

This analysis was carried out for the 2021/22 financial year. In November 2020, trade disputes between China and Australia resulted in an unofficial ban on Rock Lobster exports into China. With processors not being able to move Rock Lobster to China, the domestic market was flooded, and prices dropped significantly. The ongoing trade disputes with China, accounting for up to 95 per cent of Rock Lobster exports in previous years, have had a significant impact on the performance of the SZRL Fishery. Whilst these disputes show signs of improving and the fishery has diversified their exports, the unofficial ban remains and continues to impact the SZRL Fishery.

Economic Performance Indicators

Specific strategies and performance indicators relating to economic and social objectives outlined in the management plan (PIRSA 2020) are detailed in Table ES-1. These performance indicators are presented against the reference points, also outlined in the management plan, and the five-year trend in results. A summary of key economic indicators is presented in Table ES-2.

Table ES-1 SA SZRL Fishery performance indicators and trends

Performance indicator	Reference points	Change between 2017/18 and 2021/22
Economic Indicator reports	Economic indicators report is published regularly	Reports published annually between 2017/18 and 2021/22
Price information is available regularly	As above	As above
Catch and effort information is available	As above	As above
Net economic return (NER) ^a	Economic rent (net economic return) is > zero in 90% of years covered in this management plan	Reference point reached Real NER was negative in 2021/22 (-\$370,000). This management plan came into effect in 2020, meaning one third of years were less than zero.
Licence fee % of Gross Value of Product (GVP)	Commercial licence fees less than 10% of GVP in at least 3 years of the past five	Reference point not reached Fees/GVP was 5.2% in 2021/22 and has been below 10 per cent for the entire period of analysis.

^a Net economic return is referred to as economic rent in the management plan.

Table ES-2 Summary of key economic indicators, 2017/18 to 2021/22 ^a

Indicator	2017/18	2018/19	2019/20	2020/21	2021/22
Catch	1,246t	1,245t	1,203t	1,275t	1,328t
GVP	\$109.7m	\$122.0m	\$113.2m	\$75.8m	\$65.9m
Fee/licence	\$20,556	\$20,618	\$20,589	\$20,350	\$19,071
Fee/GVP	3.4%	3.0%	3.3%	4.8%	5.2%
Return on fishing gear and equip	61.8%	91.1%	57.6%	17.2%	9.6%
Return on total capital	4.9%	6.2%	4.4%	1.5%	0.8%
Licence Value	\$5.9m	\$6.5m	\$6.8m	\$5.6m	\$5.2m
Gross state product	\$183.1m	\$218.7m	\$206.9m	\$146.1m	\$131.0m
Employment	1,189 fte	1,461 fte	1,306 fte	1,105 fte	1,068 fte
Economic Rent	\$42.0m	\$62.5m	\$43.9m	\$6.3m	-\$0.4m
Economic Rent/GVP	38.3%	51.2%	38.8%	8.4%	-0.6%

^a Dollar values in this table are in real 2021/22 dollars.

Catch and Gross Value of Production

Catch was relatively steady between 2010/11 and 2018/19, averaging around 1,240t. Total catch decreased in 2019/20 to 1,203t as a result of international market closures during early 2020, resulting in a halt to fishing in the SZRL Fishery during its peak harvest and sales period. However, catch increased in the following years, up to 1,328t in 2021/22, the highest total catch since 2008/09.

The real value of the Southern Zone catch in 2021/22 (\$65.9 million) was 35 per cent below that in 2002/03 (\$101.8 million). The decreasing trend in value over the 20-year period resulted from reduced catch since 2008/09 and a significant decrease in price between 2019/20 and 2021/22.

Between 2002/03 and 2021/22 the price of Southern Zone Rock Lobster decreased by 14 per cent in real terms. In 2021/22, the real price (\$49.59/kg) was 17 per cent lower than the previous year (\$59.48/kg) and 53 per cent below the peak average annual real price in 2015/16 (\$105.67/kg), indicating real price has been declining since 2015/16.

Management Costs

Licence fees as a percentage of GVP were between 3 and 4 per cent in most years from 2002/03 to 2019/20 but increased in 2020/21 and 2021/22 (4.8 per cent and 5.2 per cent, respectively) principally as a result of the decrease in GVP. Licence fees per kilogram of landed Rock Lobster increased from \$1.95/kg in

2002/03 to \$2.58/kg in 2021/22. The fee per licence peaked at \$23,599 in 2006/07 but has since fallen and was \$19,071 in 2021/22.

As aggregate licence fees remained steady in real terms and the number of licences fell by less than 1 per cent over the period, the increase in fees as a proportion of GVP between 2002/03 and 2021/22 was mainly attributable to the decrease in catch and GVP. Catch in 2021/22 was approximately 25 per cent below that achieved in 2002/03, while the price was approximately 14 per cent lower in real terms (resulting in the value of catch decreasing by 35 per cent in real terms over the 20 year period).

As the Southern Zone Rock Lobster Fishery remains impacted by the disruption to the Chinese market, fishers will receive a temporary 50 per cent licence fee waiver for the 2022/23 fishing season.

Financial Performance Indicators

Over the period between 2002/03 and 2021/22, the average real income per boat has declined overall, despite being significantly higher in between years. In 2002/03, the average real income per boat was \$565,000 (real) while in 2021/22 average income was approximately \$408,000.

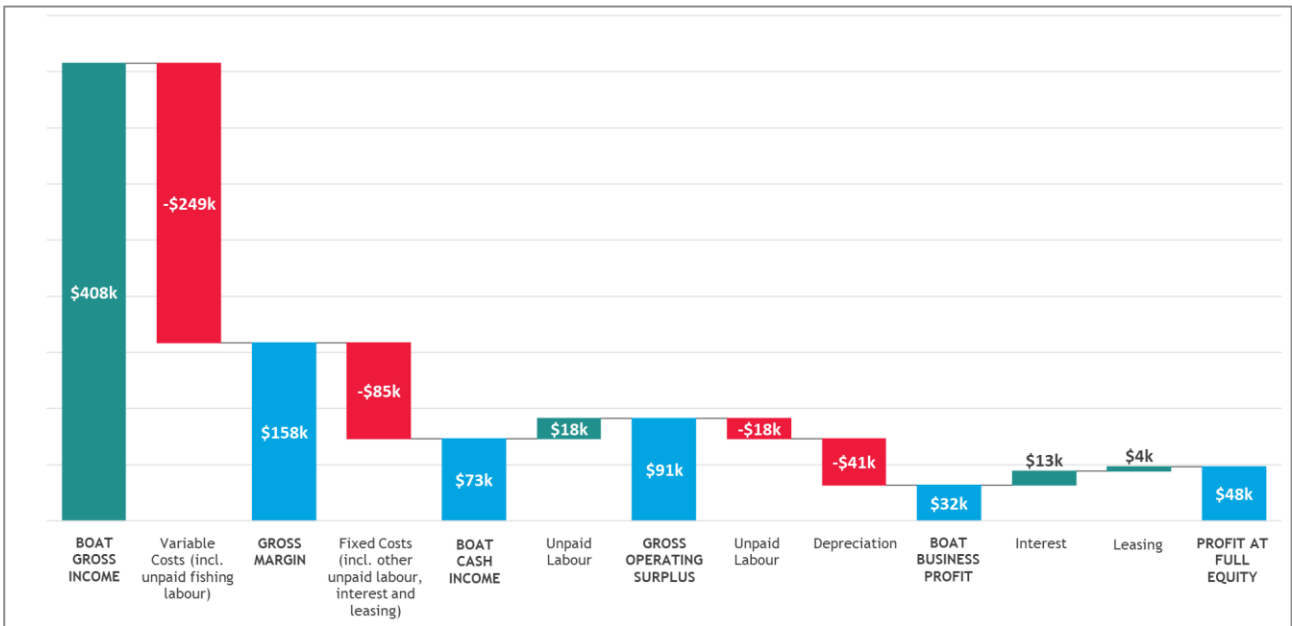
As a result of the fall in gross income per pot lift and rise in overall costs, average gross margin per pot lift decreased from \$74 in 2019/20, to \$29 in 2021/22.

Between 2002/03 and 2021/22, the average price of Rock Lobster decreased by 14 per cent in real terms. The average costs of catching Rock Lobster fluctuated between years but generally increased. In 2021/22, average real cash costs per kilogram were 26 per cent more than in 2002/03.

Changes in each of the profitability measures for the fishery were closely related to the average income earned. Profitability fluctuated between 2002/03 and 2021/22 but generally increased between 2002/03 and 2015/16 and then declined until 2021/22. A summary of boat level financial performance is illustrated in Figure ES-1 for 2021/22.

Despite fluctuations, the estimated rate of return to total capital for the fishery decreased overall between 2002/03 (3.1 per cent) and 2021/22 (0.8 per cent). The rate of return to fishing gear and equipment also decreased, from 36.2 per cent in 2002/03 to 9.6 per cent in 2021/22 reflecting a rise in the value of fishing gear and equipment and a decrease in profitability relating to decreased income.

Figure ES-1 Summary of boat level financial performance in the SZRL Fishery, 2021/22



Contribution to SA Economy

The change in total output and gross state product (GSP) contributions are closely related to changes in price and fishery GVP. In 2021/22, the fishery’s contribution to GSP was estimated to be \$131 million, a decrease from 2002/03 (\$163 million).

There was a decrease in the employment contribution of the fishery between 2002/03 (1,199 fte jobs) and 2021/22 (1,068 fte jobs). This is expected due to the reduction in the total number of active vessels in the fishery (direct employment) and productivity improvements across all related industries.

Net Economic Return (NER)

In 2002/03, the estimated real NER in the fishery was \$21 million which, despite fluctuations and a general increase in between years, decreased to -\$370,000 in 2021/22. This was the lowest recorded level and the first time NER has been negative over the 20 year period. This decrease occurred principally in 2021/22 through a reduction in gross income associated with trade disputes between China and Australia leading to an unofficial ban on Rock Lobster exports and the associated fall in price.

NER expressed as a percentage of GVP is a useful indicator for analysing a fishery over time and for comparing different fisheries. NER expressed as a percentage of GVP has decreased overall and was estimated to be -1 per cent in 2021/22. This was significantly lower than the average between 2002/03 and 2021/22 (26 per cent) and was the lowest value for the 20 year period.

1. INTRODUCTION

Under the *Fisheries Management Act 2007*, all the major fisheries in South Australia (SA) operate in accordance with fishery management plans that determine the primary management objectives of the fishery. Economic performance indicators are a feature of these plans and annual reports on them are required for the Minister for the Department of Primary Industries and Regions to meet the obligations of Section 7 of the *Fisheries Management Act 2007*.

This report is the twenty-fifth annual economic indicators report for the SA Southern Zone Rock Lobster (SZRL) Fishery. The objective of this report, *Economic Indicators for the South Australian Southern Zone Rock Lobster Fishery 2021/22*, is to provide an update of the fishery's most recent economic performance based on the sixth licence holder survey undertaken in 2020.

This analysis was carried out for the 2021/22 financial year. In November 2020, trade disputes between China and Australia resulted in an unofficial ban on Rock Lobster exports into China. For the SZRL Fishery, these effects are summarised in Section 4.1.2. Whilst these disputes show signs of improving, the unofficial ban remains.

The aim of all the studies is to present a set of economic performance indicators for the fishery as well as to develop a consistent time series of economic information to aid management of the fishery in future years. The economic indicators detailed in this report include:

- gross value of production (GVP) (catch and price)
- the cost of management of the fishery
- factors affecting costs in the fishery
- financial performance indicators (income, costs, profit, and return to capital)
- economic contribution of the fishery, both local and state
- net economic return
- external factors that influence the economic condition of the fishery
- Rock Lobster exports (quantity and value).

For purposes of comparison, summary economic indicators for all South Australian commercial fisheries, up to 2020/21, are presented in Appendix 3.

In 2015, 2018 and 2020, the economic indicators survey of commercial fisheries was extended to include the collection of social indicators. The results of the social indicators component of the survey are detailed in BDO EconSearch (2022a).

2. METHOD OF ANALYSIS AND DEFINITION OF TERMS

2.1. Survey of Licence Holders, 2019/20

The questionnaire for the survey of licence holders for 2020 was based on previous economic indicator surveys. The questionnaire for the survey was drafted and subsequently modified after consultation with the South Eastern Professional Fishermen's Association.

In September 2020, all licence holders in the fishery were sent an introductory letter and a copy of the survey. Licence holders were then contacted and a number of methods were used to undertake the surveys including, telephone interviews, face-to-face interviews, by post and online.

The completed responses from licence holders in the fishery represented approximately 51 per cent of the total quota of the fishery covering 81 of the 160 active licences. Of the 160 active licence holders in the fishery, 79 did not provide a response to the survey for the following reasons:

- could not be contacted
- too busy
- not interested in participating in the survey.

2.2. Updating the Indicators, 2021/22

The 2020/21 economic indicators for the SA SZRL Fishery were derived using a range of primary and secondary data and survey-based 2019/20 indicators. The same method was utilised for 2021/22 with the following information used to adjust 2020/21 indicators to reflect fisheries' performance in 2021/22.

- SARDI data were used to reflect changes in catch and its value between 2020/21 and 2021/22. Catch and value data were used to estimate the average total boat income in the fisheries.
- Information on change in fishing effort (number of days fished) between 2020/21 and 2021/22 was used to adjust the cost of inputs that were assumed to vary with fishing effort. These inputs included fuel, repairs and maintenance, ice and provisions.
- The consumer price index (CPI) for Adelaide and components of the CPI were used to adjust the cost of inputs to reflect local levels of inflation (ABS 2022a).

2.3. Definition of Terms¹

Beach price: refers to the price received by commercial fishers at the "port level" for their catch, and is generally expressed in terms of \$/kg. Some processing costs are included in the beach price, as some processing occurs on the boat. Other processing costs are not included in the beach price, as processing operations are assumed to occur further along the value chain. The use of beach prices also removes the effect of transfer pricing by the firm if it is vertically integrated into the value chain.

Boat Business Profit: is defined as *GOS less Depreciation less Owner-operator and Unpaid Family Labour*. Boat Business Profit represents a more complete picture of the actual financial status of an individual firm, compared with GOS, which represents the cash in-cash out situation only.

¹ Where possible definitions have been kept consistent with those used by Brown (1997) in ABARE's *Australian Fisheries Surveys Report*.

Boat Capital: includes capital items that are required by the licence holder to earn the boat income. It includes boat hull, engine, electronics and other permanent fixtures and tender boats. Other capital items such as motor vehicles, sheds, cold-rooms, and jetty/moorings can be included to the extent that they are used in the fishing business. The fishing licence/permit value is included in total boat capital.

Boat Cash Income: is defined as Gross Operating Surplus less imputed wages for owner- operator and unpaid family labour.

Boat Gross Margin: is defined as *Total Boat Income* less *Total Boat Variable Costs*. This is a basic measure of profit which assumes that capital has no alternative use and that as fishing activity (days fished) varies there is no change in capital or fixed costs.

Cost of management services: in a commercial fishery management services will generally include biological monitoring and reporting; policy, regulation and legislation development; compliance and enforcement services; licensing services; and research. Where a commercial fishery operates under full cost recovery, licence fees will be set to cover the cost of managing the fishery or at least the commercial sector's share of the resource.

In fisheries where there is full cost recovery, it can be assumed that the cost of providing these management services to the commercial sector will be equal to the gross receipts from licence fees in the fishery. With information on licence fee receipts, GVP, catch and the number of commercial fishers in the fishery, the following indicators can be readily calculated:

- aggregate licence fee receipts for the fishery (\$)
- licence fee/GVP (%)
- licence fee/catch (\$/kg)
- licence fee/licence holder (\$/licence holder).

Depreciation: Depreciation refers to the annual reduction in the value of boat capital due to general wear and tear or the reduction in value of an item over time.

Gross Operating Surplus: (GOS) is defined as *Total Boat Income* less *Total Boat Cash Costs* and is expressed in current dollar terms. GOS may be used interchangeably with the term Gross Boat Profit. A GOS value of zero represents a breakeven position for the business, where TBCC equals TBCR. If GOS is a negative value the firm is operating at a cash loss and if positive the firm is making a cash profit. GOS does not include a value for owner/operator wages, unpaid family work, or depreciation.

Gross Value of Production (GVP): refers to the value of the total annual catch for individual fisheries, fishing sectors or the fishing industry as a whole, and is measured in dollar terms. GVP, generally reported on an annual basis, is the quantity of catch for the year multiplied by the average monthly landed beach prices.

Owner-operator and Unpaid Family Labour: in many fishing businesses there is a component of labour that does not draw a direct wage or salary from the business. This will generally include owner/operator labour and often also include some unpaid family labour. The value of this labour needs to be accounted for which involves imputing a labour cost based on the amount of time and equivalent wages rate. In the above calculations this labour cost can be included simply as another cost so that Gross Operating Surplus takes account of this cost. Alternatively, it can be deducted from GOS to give a separate indicator called Boat Cash Income. Owner-operator and unpaid family labour is separated into variable labour (fishing and repairs and maintenance) and overhead labour (management and administration).

Profit at Full Equity: is calculated as *Boat Business Profit* plus *rent, interest and lease* payments. Profit at Full Equity represents the profitability of an individual licence holder, assuming the licence holder has full equity in the operation, i.e. there is no outstanding debt associated with the investment in boat capital. Profit at Full Equity is a useful absolute measure of the economic performance of fishing firms.

Rate of Return to Capital: is calculated as *Profit at Full Equity* divided by *Boat Capital* multiplied by 100. This measure is expressed in percentage terms and is calculated for an individual licence holder. It refers to the economic return to the total investment in capital items, and is a useful relative measure of the performance of individual firms. Rate of return to capital is useful to compare the performance of various licence holders, and to compare the performance of other types of operators, and with other industries.

Total Boat Cash Costs (TBCC): defined as *Total Boat Variable Costs* plus *Total Boat Fixed Costs*.

Total Boat Fixed Costs: are costs that remain fixed regardless of the level of catch or the amount of time spent fishing. As such these costs, measured in current dollar terms, are likely to remain relatively constant from one year to the next. Examples of fixed costs include:

- insurance
- licence and industry fees
- office & business administration (communication, stationery, accountancy fees)
- interest on loan repayments and overdraft
- leasing.

Total Boat Income (TBI): refers to the cash receipts received by an individual firm and is expressed in dollar terms. Total boat income is calculated as catch (kg) multiplied by 'beach price' (\$/kg). Total boat income is the contribution of an individual licence holder to the GVP of a fishing sector or fishery.

Total Boat Variable Costs: are costs which are dependent upon the level of catch or, more commonly, the amount of time spent fishing. As catch or fishing time increases, variable costs also increase. Variable costs are measured in current dollar terms and include the following individual cost items:

- fuel, oil and grease for the boat (net of diesel fuel rebate)
- bait
- ice
- provisions
- crew payments
- fishing equipment, purchase and repairs (nets, lines, etc.).

3. ECONOMIC INDICATORS FOR THE SA SOUTHERN ZONE ROCK LOBSTER FISHERY

3.1. Economic Objectives of the SA Southern Zone Rock Lobster Fishery

According to the *Management Plan for the South Australian Commercial Southern Zone Rock Lobster Fishery* (PIRSA 2020), management of the fishery has five key goals:

1. Southern Rock Lobster stocks in South Australia are sustainable
2. Southern Zone Rock Lobster Fishery businesses operate efficiently and are viable
3. South Australian Rock Lobster Fishery minimises impacts on the ecosystem
4. economic and social benefits of the South Australian Rock Lobster Fishery are equitably distributed
5. management of the fishery is cost effective and participatory.

In order to achieve these goals the management plan sets out specific biological, ecological, social and economic objectives for the fishery. The economic objectives of the SZRL Fishery and related performance indicators, as described in the management plan for the fishery, are summarised in Table 3-1. These performance indicators are presented in the following sections.

Table 3-1 Economic objectives of the South Australian Southern Zone Rock Lobster Fishery

Goal	Objectives	Strategies	Performance indicators	Trigger points
2. Southern Zone Rock Lobster Fishery businesses operate efficiently and are viable	2c. There is sufficient economic information to make informed management decisions	2c. Maintain a flow of economic benefit from the fishery to the broader community	Economic performance reports Price information is available regularly Catch and effort information is available	Economic performance reports for fishery published regularly
4. Economic and social benefits of the South Australian Rock Lobster Fishery are equitably distributed	4a. Economic and social benefits from the fishery flow to the broader community and are maintained	4ai. Develop and implement management arrangements that allow commercial operators to maximise operational flexibility, economic efficiency, value and returns 4aiii. Communicate the sustainability and economic outcomes of the fishery to the wider community 4aiv. Where there is demonstrable, and measurable disruption to fishing operations that are not related to stock abundance, and fish stocks are classified as ‘sustainable’ that emergency arrangements for management of the fishery may be considered	Net economic return (Economic rent)	Net economic return is > zero in 90% of years covered in this management plan
5. Management of the fishery is cost effective and participatory	5a. Promote cost-effective and efficient management of the fishery, in line with government’s cost-recovery policy	5ai. Develop and implement management arrangements that are effective at achieving management objectives whilst minimising costs	Licence fee% of GVP	Commercial licence fees > than 10 per cent of GVP in at least 3 years of past 5

Indicators reported in economic reports.

Trigger points that can be calculated from reported economic indicators

Source: PIRSA (2020)

3.2. Catch and Gross Value of Production

Quota management was introduced into the Southern Zone Rock Lobster (SZRL) Fishery in 1993/94. In 2002/03 a total allowable commercial catch (TACC) of 1,770t resulted in a catch of 1,766. In 2003/04 TACC was increased to 1,900t which resulted in relatively stable level of catch of around 1,900t between 2003/04 and 2007/08. Total catch fell in 2008/09 (1,407t) and 2009/10 (1,243t). In an effort to increase catch rates the TACC was reduced to 1,250t in 2010/11 and 1,246t in 2014/15. As a result, catch was constant between 2010/11 and 2018/19 averaging around 1,240t. Total catch decreased in 2019/20 to 1,203t as a result of international market closures during early 2020, resulting in a halt to fishing in the SZRL Fishery during its peak harvest and sales period. However, catch increased in the following years, up to 1,275t in 2020/21 and 1,328t in 2021/22, the highest total catch since 2008/09.

Table 3-2 TACC in the SA SZRL Fishery, 2002/03 to 2021/22

Year	Total Allowable Commercial Catch (t)
2002/03	1,770
2003/04	1,900
2004/05	1,900
2005/06	1,900
2006/07	1,900
2007/08	1,900
2008/09	1,770
2009/10	1,400
2010/11	1,250
2011/12	1,250
2012/13	1,250
2013/14	1,250
2014/15	1,246
2015/16	1,246
2016/17	1,246
2017/18	1,246
2018/19	1,246
2019/20	1,246
2020/21	1,289
2021/22 ^a	1,327

^a 7 tonnes of uncaught quota was carried over from 2020/21 into 2021/22.

Source: Linnane et al. 2016 and previous editions and PIRSA, pers. comm.

Table 3-3 Catch and value of catch of the SZRL Fishery^a and combined South Australian Rock Lobster Fisheries, 2002/03 to 2021/22

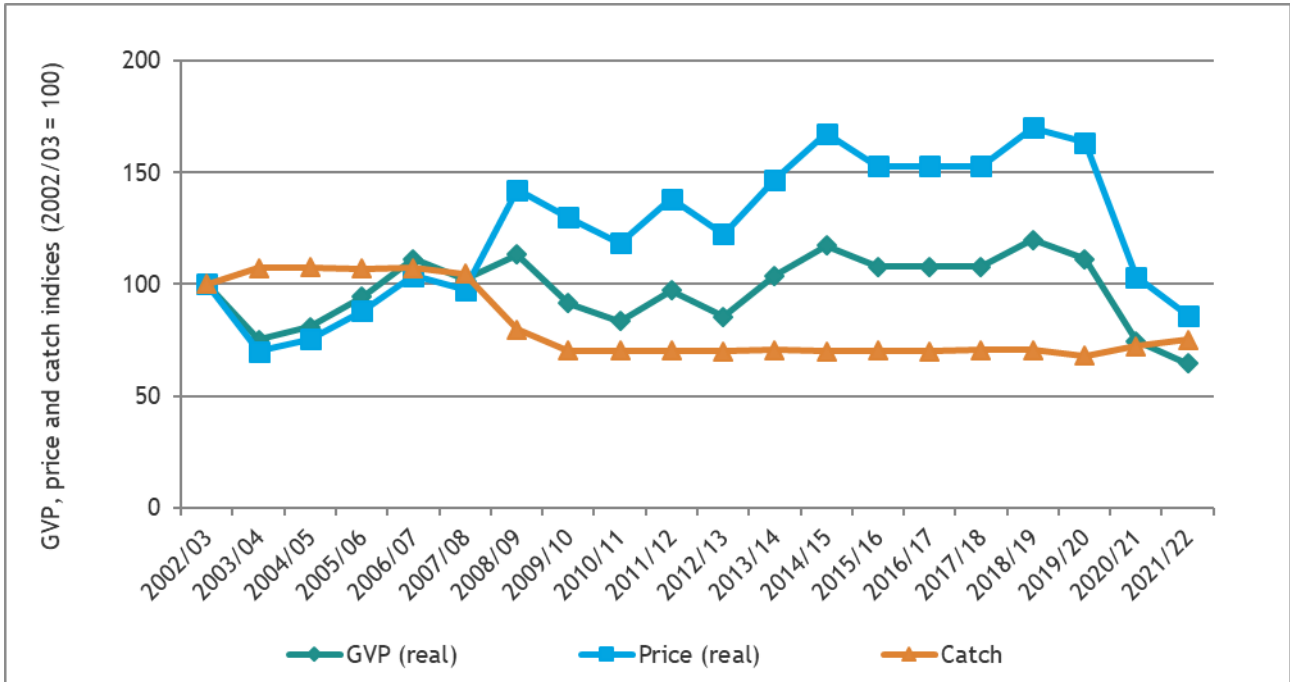
Year	Southern Zone			South Australia		
	Catch (tonnes)	Nominal Value of Catch (\$m)	Real Value of Catch (2021/22 \$m)	Catch	Nominal Value of Catch (tonnes)	Real Value of Catch (2021/22 \$m)
2002/03	1,766	63.8	101.8	2,361	82.7	131.8
2003/04	1,896	49.3	76.4	2,400	61.4	95.0
2004/05	1,897	54.4	82.4	2,343	66.0	100.1
2005/06	1,889	65.7	96.0	2,365	81.2	118.5
2006/07	1,895	78.9	113.3	2,532	97.7	140.2
2007/08	1,850	75.7	103.9	2,411	92.2	126.6
2008/09	1,407	85.4	115.4	1,925	105.4	142.5
2009/10	1,243	70.7	93.0	1,642	86.4	113.6
2010/11	1,244	67.0	84.8	1,695	82.4	104.3
2011/12	1,242	79.1	98.9	1,636	96.7	120.9
2012/13	1,234	71.0	87.0	1,630	87.1	106.7
2013/14	1,247	88.9	105.6	1,622	108.8	129.2
2014/15	1,238	101.8	119.5	1,631	125.0	146.6
2015/16	1,244	112.8	131.5	1,659	138.2	161.1
2016/17	1,238	99.7	114.4	1,671	120.9	138.8
2017/18	1,246	98.2	109.7	1,575	122.8	137.2
2018/19	1,245	110.7	122.0	1,565	136.5	150.5
2019/20	1,203	103.5	113.2	1,470	122.5	133.9
2020/21	1,275	71.3	75.8	1,575	83.4	88.7
2021/22	1,328	65.9	65.9	1,684	79.8	79.8

^a Rock Lobster only and does not include Octopus catch taken by SZRL licence holders.

Source: SARDI Aquatic Sciences

Due to the relatively constant catch between 2002/03 to 2007/08 the nominal value of the fishery gradually increased due mainly, to an increase in price. Even in 2008/09 the decline in catch was offset by a steep price increase. Peaking in the years between 2013/14 and 2019/20, nominal value has declined sharply in the years since. Overall, between 2002/03 and 2021/22 real GVP decreased by 35 per cent while catch declined by 25 per cent, highlighting the fall in real price (14 per cent). The 14 per cent real price decrease was equivalent to a 37 per cent nominal price increase between 2002/03 and 2021/22 (Figure 3-1 and Figure 3-2).

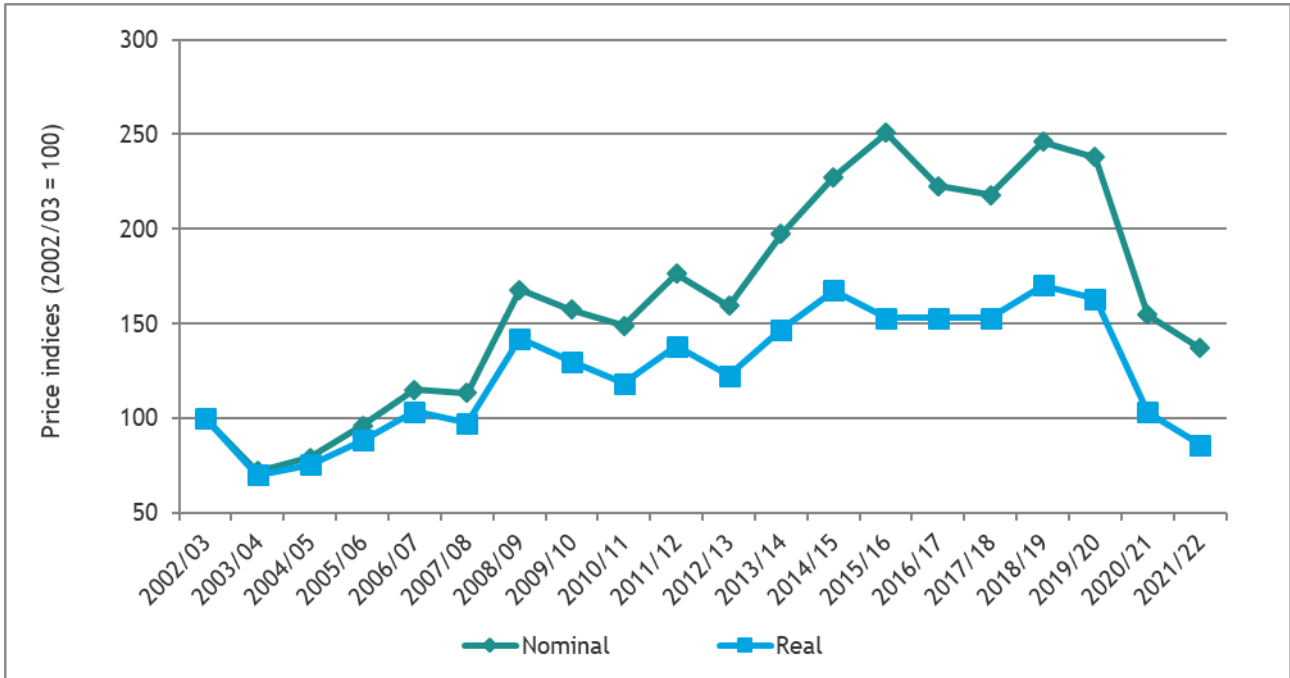
Figure 3-1 GVP, price and catch indices for the SA SZRL Fishery ^a



^a 2002/03 is the reference year against which all other years are compared.

Source: SARDI Aquatic Sciences

Figure 3-2 Price indices for the SA SZRL Fishery ^a



^a Nominal price refers to the beach price in the current year's dollars. Real price is the nominal price adjusted for the purchasing power of money. The Adelaide CPI (consumer price index) has been used to make this adjustment (ABS 2022a). It enables meaningful comparisons of prices to be made between years.

Source: SARDI Aquatic Sciences

3.3. Summary of Factors Affecting Costs in the SA Southern Zone Rock Lobster Fishery

The information in Table 3-4 was used to adjust the 2020/21 financial performance indicators to reflect the costs incurred in the fishery in 2021/22. The following data were used and adjustments made.

- Information from SARDI on the change in fishing effort (total days fished) was used to adjust costs that vary depending on the amount of time spent fishing. These costs include the cost of fuel, repairs and maintenance and provisions.
- The ABS Transportation Index for Adelaide was used to adjust the cost of fuel.
- Interest charges were adjusted in accordance with the Reserve Bank of Australia indicator lending rate (i.e. weighted average interest rate for small businesses with outstanding credit).
- The CPI for Adelaide was used to adjust other costs. Other costs associated with operating in the fishery include, legal and accounting costs, office and administration, telephone expenses and other incidental costs.
- The Wage Price index was used to adjust the cost of labour.

Table 3-4 Factors affecting costs in the SA SZRL Fishery, 2020/21 to 2021/22

	2020/21	2021/22	Change
Total Days Fished ^a	10,489	10,250	-2.3%
Price of Fuel - Transportation Index ^b	105.7	119.7	13.2%
Price of Bait (c/kg) ^a	0.69	0.78	12.7%
Interest Charges (%/annum) ^c	6.5%	6.6%	1.4%
CPI Adelaide ^d	117.8	125.3	6.4%
Wage Price Index ^e	136.4	139.3	2.1%

^a SARDI Aquatic Sciences

^b Transportation index (component of CPI) for Adelaide (ABS 2022a)

^c RBA indicator lending rate for small business (RBA 2022b)

^d Consumer price index (CPI) for Adelaide (ABS 2022a)

^e Wage price index for SA (ABS 2022b)

3.4. Cost of Management

Licence fees from SZRLF licence holders are collected in accordance with the PIRSA Cost Recovery Policy and the Australian Government's Cost Recovery Guidelines (July 2014). Accordingly, licence fees are set to cover the cost of managing the SZRL fishery. For the purpose of this analysis, the cost of providing these management services has been assumed to be equal to the gross receipts from licence fees in the fishery (PIRSA, pers. comm.), although this excludes some known small subsidies, such as federal government grants for research and stock status assessments.

Management services include:

- annual reports on biological and economic indicators
- policy and management services
- regulatory/legislation and licensing services
- compliance services

- directorate services
- observer services (specifically observer coverage)
- research services (including the FRDC levy).

For the purpose of this analysis, the cost of providing these management services has been assumed to be equal to the gross receipts from licence fees in the fishery (PIRSA, pers. comm.)². Table 3-5 shows licence fee receipts for the SA SZRL Fishery for the period 2002/03 to 2022/23. Licence fee values shown are in real 2021/22 dollars.

Table 3-5 shows that aggregate licence fees have been relatively steady in real terms between 2002/03 and 2021/22, averaging around \$3.6 million. Licence fees as a proportion of GVP averaged 3.6 per cent between 2002/03 and 2019/20 but increased in 2020/21 (4.8 per cent) and once again in 2021/22 (5.2 per cent) with the decrease in GVP.

As catch has fallen significantly since 2002/03 licence fees per kilogram have increased from \$1.95/kg in 2002/03 to \$2.58 in 2021/22.

In 2022/23 aggregate licence fees have been set at half of the 2021/22 level in to assist with ongoing trade disputes with China, the predominant market destination for Rock Lobster.

² It is worth noting that the gross receipts from licence fees exclude some known subsidy of the fishery such as FRDC and CRC leverage of research funding. However, in order to enable tracking of performance across years, subsidies have been omitted.

Table 3-5 Costs of management in the SA SZRL Fishery, 2002/03 to 2022/23 ^a

	Licence Fees	GVP	Fees/GVP	Catch	Fee/Catch	No. Licences	Fee/Licence ^b
	(\$,000)	(\$,000)	(%)	(t)	(\$/kg)	(no.)	(\$/licence)
2002/03	3,436	101,767	3.4%	1,766	\$1.95	181	\$18,985
2003/04	3,903	76,387	5.0%	1,896	\$2.00	181	\$20,898
2004/05	3,783	82,418	4.6%	1,897	\$1.99	181	\$20,898
2005/06	3,662	96,001	3.8%	1,889	\$1.94	181	\$20,233
2006/07	4,271	113,271	3.8%	1,895	\$2.25	181	\$23,599
2007/08	3,606	103,933	3.5%	1,850	\$1.95	181	\$19,925
2008/09	3,411	115,394	3.0%	1,407	\$2.42	181	\$18,844
2009/10	3,411	92,982	3.7%	1,243	\$2.74	181	\$18,844
2010/11	3,411	84,824	4.0%	1,244	\$2.74	181	\$18,846
2011/12	3,257	98,928	3.3%	1,242	\$2.62	181	\$17,997
2012/13	3,414	87,022	3.9%	1,234	\$2.77	181	\$18,860
2013/14	3,389	105,564	3.2%	1,247	\$2.72	181	\$18,723
2014/15	3,815	119,483	3.2%	1,238	\$3.08	180	\$21,192
2015/16	3,766	131,457	2.9%	1,244	\$3.03	180	\$20,922
2016/17	3,707	114,426	3.2%	1,238	\$2.99	180	\$20,597
2017/18	3,700	109,739	3.4%	1,246	\$2.97	180	\$20,556
2018/19	3,711	122,035	3.0%	1,245	\$2.98	180	\$20,618
2019/20	3,706	113,205	3.3%	1,203	\$3.08	180	\$20,589
2020/21	3,663	75,838	4.8%	1,275	\$2.87	180	\$20,350
2021/22	3,433	65,859	5.2%	1,328	\$2.58	180	\$19,071
2022/23 ^c	1,741	n.a.	-	n.a.	-	180	\$9,671

^a This table presents management costs in real 2021/22 dollars. Nominal management costs are presented in Appendix 5.

^b The fee per licence holder comprises the SZRL unit fee and the SZRL base fee.

^c 2022/23 values have not been adjusted. The aggregate licence fee for 2022/23 has been reduced by 50 per cent to assist with ongoing trade disputes with China, the predominant market destination for Rock Lobster.

Source: PIRSA Fisheries and Aquaculture and SARDI Aquatic Sciences

3.5. Financial Performance Indicators

The major measures of financial performance of the surveyed boats in the SA SZRL Fishery for the years 2019/20 to 2021/22 are shown in Table 3-6. Estimates for 2019/20 to 2021/22 are based on the most recent survey conducted during October 2020. Financial performance estimates for 2002/03 to 2018/19 are provided in Appendix 4. Financial performance estimates for the years 2019/20 to 2021/22 are also provided as an average per pot lift in Table 3-7.

As a result of the large sample size it was possible to divide the survey responses into four groups (quartiles) according to rate of return to capital. The first quartile comprises the 25 per cent of boats with the lowest rate of return and fourth quartile includes the 25 per cent with the highest rate of return to capital. The financial performance measures for 'return to capital' quartiles for 2021/22 are provided in Table 3-8.

In addition, the survey responses were divided into three groups according to the number of licensed pots held. The first group includes those licence holders with 65 pots or fewer (approximately 33 per cent of survey respondents), the second group includes licence holders with 66 to 84 pots (approximately 36 per cent of survey respondents) and the third group includes licence holders with 85 pots or more (approximately 31 per cent of survey respondents). The financial performance estimates for the pot groups for 2021/22 are provided in Table 3-9 as an average per boat and in Table 3-10 as an average per pot.

Income

Total gross income per boat was almost \$408,000 in 2021/22, a 7 per cent decrease from 2020/21 (\$440,000) and a 36 per cent decrease from 2019/20 (\$638,000) (Table 3-6). The fall in income was driven by a decrease in average nominal prices (from \$86.07/kg in 2019/20, \$55.92/kg in 2020/21 and \$49.59/kg in 2021/22), despite catch levels increasing over the same period. Average gross income per pot lift was almost \$74 in 2021/22 down from \$80 in 2020/21 and \$116 in 2019/20, similarly as a result of the fall in price (Table 3-7).

In 2021/22, the average gross income for boats in the first quartile was approximately 15 per cent below the fishery average, while in the fourth quartile, average gross income was approximately 8 per cent above average (Table 3-8).

As expected, the average gross income per boat was positively correlated with the number of pots per boat (Table 3-9). However, the gross income per pot was relatively consistent across all three groups, with boats working less than 65 pots earning slightly more income per pot (Table 3-10).

Table 3-6 Financial performance in the SA SZRL Fishery, 2019/20 to 2021/22 (average per licence)^a

	2019/20		2020/21		2021/22	
	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b
(1) Total Boat Gross Income	\$638,269		\$440,222		\$407,626	
Variable Costs						
Fuel	\$24,299	8%	\$24,940	8%	\$27,588	8%
Repairs & Maintenance ^c	\$33,665	11%	\$35,796	11%	\$37,207	11%
Bait/Ice	\$14,098	4%	\$14,584	4%	\$16,067	5%
Provisions	\$1,004	0%	\$1,067	0%	\$1,109	0%
Labour - paid	\$151,342	48%	\$158,999	49%	\$158,680	47%
(2) Labour - unpaid ^d	\$6,930	2%	\$7,280	2%	\$7,266	2%
Other	\$1,234	0%	\$1,312	0%	\$1,394	0%
(3) Total Variable Costs	\$232,571	73%	\$243,978	75%	\$249,310	75%
Fixed Costs						
Licence Fee	\$22,758	7%	\$23,122	7%	\$23,048	7%
Insurance	\$8,496	3%	\$8,734	3%	\$9,290	3%
(4) Interest	\$14,016	4%	\$12,378	4%	\$12,547	4%
(5) Labour - unpaid ^d	\$10,529	3%	\$10,693	3%	\$10,921	3%
(6) Leasing	\$6,456	2%	\$4,452	1%	\$4,123	1%
Legal & Accounting	\$6,580	2%	\$6,764	2%	\$7,195	2%
Telephone etc.	\$2,449	1%	\$2,518	1%	\$2,678	1%
Slipping & Mooring	\$6,003	2%	\$6,383	2%	\$6,634	2%
Travel	\$1,326	0%	\$1,363	0%	\$1,450	0%
Office & Admin	\$6,682	2%	\$6,869	2%	\$7,306	2%
(7) Total Fixed Costs	\$85,296	27%	\$83,275	25%	\$85,191	25%
(8) Total Boat Cash Costs (3+7)	\$317,867	100%	\$327,254	100%	\$334,501	100%
Boat Gross Margin (1-3)	\$405,697		\$196,243		\$158,316	
(9) Total Unpaid Labour (2+5)	\$17,458		\$17,973		\$18,186	
Gross Operating Surplus (1-8+9)	\$337,860		\$130,942		\$91,311	
(10) Boat Cash Income (1-8)	\$320,402		\$112,968		\$73,125	
(11) Depreciation	\$42,470		\$41,973		\$41,472	
(12) Boat Business Profit (10-11)	\$277,932		\$70,995		\$31,653	
(13) Profit at Full Equity (12+4+6)	\$298,403		\$87,825		\$48,323	
Boat Capital						
(14) Fishing Gear & Equip	\$518,118		\$512,056		\$505,940	
Licence Value	\$6,219,743		\$5,257,050		\$5,216,901	
(15) Total Boat Capital	\$6,737,862		\$5,769,107		\$5,722,841	
Rate of Return on Fishing Gear & Equip (13/14*100)	57.6%		17.2%		9.6%	
Rate of Return on Total Boat Capital (13/15*100)	4.4%		1.5%		0.8%	

^a Financial performance estimates for 2019/20 to 2021/22 are based on the 2020 survey. All figures are in nominal terms.

^b Total boat cash costs.

^c Repairs and maintenance costs have been classified as a variable cost although it is noted that some of these costs may be fixed (e.g. regulated maintenance).

^d Unpaid labour was divided between variable (time spent fishing and on repairs and maintenance) and fixed (management and administrative duties) based on survey responses.

Source: BDO EconSearch analysis

Table 3-7 Financial performance in the SA SZRL Fishery, 2019/20 to 2021/22 (average per pot lift)^a

	2019/20		2020/21		2021/22	
	Average per Pot Lift	Share of TBCC ^b	Average per Pot Lift	Share of TBCC ^b	Average per Pot Lift	Share of TBCC ^b
(1) Total Boat Gross Income	\$115.84		\$79.89		\$73.98	
Variable Costs						
Fuel	\$4.41	8%	\$4.53	8%	\$5.01	8%
Repairs & Maintenance ^c	\$6.11	11%	\$6.50	11%	\$6.75	11%
Bait/Ice	\$2.56	4%	\$2.65	4%	\$2.92	5%
Provisions	\$0.18	0%	\$0.19	0%	\$0.20	0%
Labour - paid	\$27.47	48%	\$28.86	49%	\$28.80	47%
(2) Labour - unpaid ^d	\$1.26	2%	\$1.32	2%	\$1.32	2%
Other	\$0.22	0%	\$0.24	0%	\$0.25	0%
(3) Total Variable Costs	\$42.21	73%	\$44.28	75%	\$45.25	75%
Fixed Costs						
Licence Fee	\$4.13	7%	\$4.20	7%	\$4.18	7%
Insurance	\$1.54	3%	\$1.59	3%	\$1.69	3%
(4) Interest	\$2.54	4%	\$2.25	4%	\$2.28	4%
(5) Labour - unpaid ^d	\$1.91	3%	\$1.94	3%	\$1.98	3%
(6) Leasing	\$1.17	2%	\$0.81	1%	\$0.75	1%
Legal & Accounting	\$1.19	2%	\$1.23	2%	\$1.31	2%
Telephone etc.	\$0.44	1%	\$0.46	1%	\$0.49	1%
Slipping & Mooring	\$1.09	2%	\$1.16	2%	\$1.20	2%
Travel	\$0.24	0%	\$0.25	0%	\$0.26	0%
Office & Admin	\$1.21	2%	\$1.25	2%	\$1.33	2%
(7) Total Fixed Costs	\$15.48	27%	\$15.11	25%	\$15.46	25%
(8) Total Boat Cash Costs (3+7)	\$57.69	100%	\$59.39	100%	\$60.71	100%
Boat Gross Margin (1-3)	\$73.63		\$35.62		\$28.73	
(9) Total Unpaid Labour (2+5)	\$3.17		\$3.26		\$3.30	
Gross Operating Surplus (1-8+9)	\$61.32		\$23.76		\$16.57	
(10) Boat Cash Income (1-8)	\$58.15		\$20.50		\$13.27	
(11) Depreciation	\$7.71		\$7.62		\$7.53	
(12) Boat Business Profit (10-11)	\$50.44		\$12.88		\$5.74	
(13) Profit at Full Equity (12+4+6)	\$54.16		\$15.94		\$8.77	
Boat Capital						
(14) Fishing Gear & Equip	\$94.03		\$92.93		\$91.82	
Licence Value	\$1,128.79		\$954.08		\$946.79	
(15) Total Boat Capital	\$1,222.83		\$1,047.01		\$1,038.61	
Rate of Return on Fishing Gear & Equip (13/14*100)	57.6%		17.2%		9.6%	
Rate of Return on Total Boat Capital (13/15*100)	4.4%		1.5%		0.8%	

^{a-d} See footnotes from Table 3-6.

Source: BDO EconSearch analysis

Table 3-8 Financial performance in the SA SZRL Fishery by return to capital quartile, 2021/22 (average per boat)

	Average per boat				
	Lowest 25%	Second Quartile	Third Quartile	Highest 25%	All Boats
(1) Total Boat Gross Income	\$348,124	\$369,376	\$471,683	\$439,717	\$407,626
Variable Costs					
Fuel	\$26,074	\$28,293	\$30,584	\$25,505	\$27,588
Repairs & Maintenance ^a	\$58,892	\$36,180	\$29,068	\$25,285	\$37,207
Bait/Ice	\$17,917	\$20,001	\$13,119	\$13,367	\$16,067
Provisions	\$1,575	\$962	\$967	\$941	\$1,109
Labour - paid	\$154,621	\$151,163	\$177,139	\$152,124	\$158,680
(2) Labour - unpaid ^b	\$11,064	\$6,102	\$5,908	\$6,050	\$7,266
Other	\$1,592	\$903	\$2,171	\$931	\$1,394
(3) Total Variable Costs	\$271,734	\$243,603	\$258,955	\$224,202	\$249,310
Fixed Costs					
Licence Fee	\$25,090	\$20,710	\$25,216	\$21,265	\$23,048
Insurance	\$9,471	\$11,675	\$8,190	\$7,893	\$9,290
(4) Interest	\$9,735	\$11,100	\$23,149	\$6,505	\$12,547
(5) Labour - unpaid ^b	\$15,430	\$11,817	\$8,027	\$8,528	\$10,921
(6) Leasing	\$3,864	\$2,347	\$4,981	\$5,243	\$4,123
Legal & Accounting	\$13,979	\$5,686	\$4,958	\$4,301	\$7,195
Telephone etc.	\$2,568	\$3,071	\$3,496	\$1,630	\$2,678
Slipping & Mooring	\$7,615	\$7,325	\$5,823	\$5,816	\$6,634
Travel	\$1,968	\$1,749	\$1,662	\$469	\$1,450
Office & Admin	\$10,347	\$6,239	\$7,255	\$5,476	\$7,306
(7) Total Fixed Costs	\$100,067	\$81,718	\$92,757	\$67,124	\$85,191
(8) Total Boat Cash Costs (3+7)	\$371,802	\$325,322	\$351,712	\$291,326	\$334,501
Boat Gross Margin (1-3)	\$76,389	\$125,772	\$212,728	\$215,514	\$158,316
(9) Total Unpaid Labour (2+5)	\$26,494	\$17,918	\$13,935	\$14,578	\$18,186
Gross Operating Surplus (1-8+9)	\$2,816	\$61,972	\$133,906	\$162,968	\$91,311
(10) Boat Cash Income (1-8)	-\$23,678	\$44,054	\$119,971	\$148,390	\$73,125
(11) Depreciation	\$49,520	\$40,486	\$39,464	\$36,658	\$41,472
(12) Boat Business Profit (10-11)	-\$73,198	\$3,568	\$80,507	\$111,732	\$31,653
(13) Profit at Full Equity (12+4+6)	-\$59,600	\$17,015	\$108,637	\$123,480	\$48,323
Boat Capital					
(14) Fishing Gear & Equip	\$743,507	\$390,346	\$553,565	\$344,418	\$505,940
Licence Value	\$5,817,672	\$4,892,212	\$6,061,092	\$4,149,973	\$5,216,901
(15) Total Boat Capital	\$6,561,179	\$5,282,558	\$6,614,657	\$4,494,392	\$5,722,841
Rate of Return on Fishing Gear & Equip (13/14*100)	-8.0%	4.4%	19.6%	35.9%	9.6%
Rate of Return on Total Boat Capital (13/15*100)	-0.9%	0.3%	1.6%	2.7%	0.8%
Average Number of Pots ^c	71	69	90	80	77

^a Repairs and maintenance costs have been classified as a variable cost although it is noted that some of these costs may be fixed (e.g. regulated maintenance).

^b Unpaid labour was divided between variable (time spent fishing and on repairs and maintenance) and fixed (management and administrative duties) based on survey responses.

^c Average number of pots owned and leased by licence holders in each quartile.

Source: BDO EconSearch analysis

Table 3-9 Financial performance in the SA SZRL Fishery by number of pots, 2021/22 (average per boat)

	Average per boat			
	65 Pots or less	66 - 84 Pots	85 Pots or more	All Boats
(1) Total Boat Gross Income	\$300,950	\$383,854	\$550,411	\$407,626
Variable Costs				
Fuel	\$20,842	\$22,012	\$41,341	\$27,588
Repairs & Maintenance ^a	\$28,438	\$40,646	\$42,688	\$37,207
Bait/Ice	\$14,588	\$12,706	\$21,563	\$16,067
Provisions	\$1,690	\$1,258	\$309	\$1,109
Labour - paid	\$98,256	\$151,977	\$231,713	\$158,680
(2) Labour - unpaid ^b	\$7,124	\$5,234	\$9,776	\$7,266
Other	\$1,388	\$829	\$2,055	\$1,394
(3) Total Variable Costs	\$172,325	\$234,662	\$349,446	\$249,310
Fixed Costs				
Licence Fee	\$19,687	\$23,027	\$26,703	\$23,048
Insurance	\$7,703	\$11,146	\$8,850	\$9,290
(4) Interest	\$5,314	\$3,797	\$30,507	\$12,547
(5) Labour - unpaid ^b	\$9,073	\$8,403	\$15,836	\$10,921
(6) Leasing	\$1,760	\$3,068	\$7,899	\$4,123
Legal & Accounting	\$4,422	\$10,892	\$5,900	\$7,195
Telephone etc.	\$2,631	\$2,214	\$3,267	\$2,678
Slipping & Mooring	\$5,751	\$7,154	\$6,985	\$6,634
Travel	\$1,231	\$886	\$2,340	\$1,450
Office & Admin	\$6,706	\$8,248	\$6,862	\$7,306
(7) Total Fixed Costs	\$64,278	\$78,835	\$115,150	\$85,191
(8) Total Boat Cash Costs (3+7)	\$236,603	\$313,497	\$464,595	\$334,501
Boat Gross Margin (1-3)	\$128,625	\$149,193	\$200,965	\$158,316
(9) Total Unpaid Labour (2+5)	\$16,197	\$13,637	\$25,612	\$18,186
Gross Operating Surplus (1-8+9)	\$80,544	\$83,994	\$111,428	\$91,311
(10) Boat Cash Income (1-8)	\$64,347	\$70,358	\$85,816	\$73,125
(11) Depreciation	\$28,681	\$40,513	\$56,398	\$41,472
(12) Boat Business Profit (10-11)	\$35,666	\$29,845	\$29,418	\$31,653
(13) Profit at Full Equity (12+4+6)	\$42,740	\$36,710	\$67,823	\$48,323
Boat Capital				
(14) Fishing Gear & Equip	\$554,245	\$447,389	\$521,690	\$505,940
Licence Value	\$3,999,996	\$5,269,590	\$6,470,038	\$5,216,901
(15) Total Boat Capital	\$4,554,241	\$5,716,979	\$6,991,728	\$5,722,841
Rate of Return on Fishing Gear & Equip (13/14*100)	7.7%	8.2%	13.0%	9.6%
Rate of Return on Total Boat Capital (13/15*100)	0.9%	0.6%	1.0%	0.8%
Average Number of Pots ^c	54	75	105	77

^{a-c} See footnotes from Table 3-8.

Source: BDO EconSearch analysis

Table 3-10 Financial performance in the SA SZRL Fishery by number of pots, 2021/22 (average per pot) ^a

		Average per pot			
		65 Pots or less	66 - 84 Pots	85 Pots or more	All Boats
(1)	Total Boat Gross Income	\$5,535	\$5,142	\$5,220	\$5,267
Variable Costs					
	Fuel	\$383	\$295	\$392	\$356
	Repairs & Maintenance ^b	\$523	\$544	\$405	\$481
	Bait/Ice	\$268	\$170	\$205	\$208
	Provisions	\$31.08	\$17	\$3	\$14
	Labour - paid	\$1,807.15	\$2,036	\$2,198	\$2,050
(2)	Labour - unpaid ^c	\$131	\$70.10	\$92.71	\$93.88
	Other	\$26	\$11	\$19	\$18
(3)	Total Variable Costs	\$3,169	\$3,143	\$3,314	\$3,221
Fixed Costs					
	Licence Fee	\$362	\$308	\$253	\$298
	Insurance	\$142	\$149	\$84	\$120
(4)	Interest	\$98	\$51	\$289	\$162
(5)	Labour - unpaid ^c	\$167	\$113	\$150	\$141
(6)	Leasing	\$32	\$41	\$75	\$53
	Legal & Accounting	\$81	\$146	\$56	\$93
	Telephone etc.	\$48	\$30	\$31	\$35
	Slipping & Mooring	\$106	\$96	\$66	\$86
	Travel	\$23	\$12	\$22	\$19
	Office & Admin	\$123	\$110	\$65	\$94
(7)	Total Fixed Costs	\$1,182	\$1,056	\$1,092	\$1,101
(8)	Total Boat Cash Costs (3+7)	\$4,352	\$4,199	\$4,406	\$4,322
	Boat Gross Margin (1-3)	\$2,366	\$1,998	\$1,906	\$2,046
(9)	Total Unpaid Labour (2+5)	\$298	\$183	\$243	\$235
	Gross Operating Surplus (1-8+9)	\$1,481	\$1,125	\$1,057	\$1,180
(10)	Boat Cash Income (1-8)	\$1,183	\$942	\$814	\$945
(11)	Depreciation	\$528	\$543	\$535	\$536
(12)	Boat Business Profit (10-11)	\$656	\$400	\$279	\$409
(13)	Profit at Full Equity (12+4+6)	\$786	\$492	\$643	\$624
Boat Capital					
(14)	Fishing Gear & Equip	\$10,194	\$5,993	\$4,948	\$6,537
	Licence Value	\$73,569	\$70,586	\$61,362	\$67,406
(15)	Total Boat Capital	\$83,763	\$76,578	\$66,310	\$73,943
	Rate of Return on Fishing Gear & Equip (13/14*100)	7.7%	8.2%	13.0%	9.6%
	Rate of Return on Total Boat Capital (13/15*100)	0.9%	0.6%	1.0%	0.8%

^a Calculated based on the average number of pots owned and leased by licence holders in each group.

^b Repairs and maintenance costs have been classified as a variable cost although it is noted that some of these costs may be fixed (e.g. regulated maintenance).

^c Unpaid labour was divided between variable (time spent fishing and on repairs and maintenance) and fixed (management and administrative duties) based on survey responses.

Source: BDO EconSearch analysis

Costs

Total costs are separated into variable and fixed costs in Table 3-6. Variable costs (75 per cent of total boat cash costs in 2021/22) represented a significantly greater proportion of total boat cash costs than fixed costs (25 per cent). Variable costs as a proportion of total boat cash costs were similar in comparison to 2020/21.

Average total boat cash costs increased by 2 per cent between 2020/21 and 2021/22, a result of a 2 per cent rise in variable costs and fixed costs, respectively (Table 3-6). Total average cash costs per pot lift increased slightly from around \$59 in 2020/21 to \$61 in 2021/22 as a result of the rise in total boat cash costs (Table 3-7).

In 2021/22, for the fishery as a whole, around 53 per cent of the total boat cash costs were attributable to labour costs (both paid and unpaid), by far the biggest cost item. Imputed unpaid labour (more than \$18,000 in 2021/22) was divided into variable (fishing and repairs and maintenance) (\$7,000) and fixed (management and administration) (\$11,000) components based on the 2020 licence holder survey (Table 3-6).

Cash Income and Profit

The separation of variable and fixed costs from total cash costs enables the calculation of boat gross margin (total boat income less total boat variable costs) as a basic measure of profit (assuming that capital has no alternative use and that as fishing activity varies there is no change in capital or fixed costs).

There was a decrease in boat gross margin in 2021/22 (\$158,000) compared to the previous year (\$196,000), due to the fall in gross boat income (driven by a significant decrease in price for the second consecutive year) and a slight rise in variable and fixed costs (Table 3-6). Average gross margin per pot lift decreased from around \$36 in 2020/21 to \$29 in 2021/22 as a result of the fall in gross income per pot lift (Table 3-7).

Gross operating surplus (GOS) was calculated excluding imputed wages for operator and family members. The average GOS of all boats in 2021/22 was estimated to be \$91,000, 30 per cent less than in 2020/21 (\$131,000) and 73 per cent less than in 2019/20 (\$338,000). Boat cash income is measured as gross operating surplus with imputed wages (unpaid labour) included as cash costs. The estimated average boat cash income in 2021/22 was approximately \$73,000 per boat, a 35 per cent decline from \$113,000 in 2020/21 (Table 3-6).

Gross operating surplus and boat business profit give an indication of the capacity of the operator to remain in the fishery in the short to medium term. Average boat business profit was estimated to be almost \$32,000 per boat in 2021/22, down 55 per cent from \$71,000 in 2020/21. In 2021/22, the average boat business profit for boats in the first quartile was -\$73,000 while boats in the fourth quartile made a significantly larger profit, nearly \$112,000 (Table 3-8).

Boats with a small number of pots tended to be slightly more profitable than boats with a medium or large number of pots, on a per boat basis. The average boat business profit for licence holders with 65 pots or less was almost \$36,000 in 2021/22. This is greater than that for licence holders with 66 to 84 pots (\$30,000), or 85 or more pots (\$29,000). This is reflected in average boat business profit on a per pot basis. Licence holders with 65 or less pots (\$656 per pot) enjoyed greater profits in comparison to those with 66 to 84 pots (\$400 per pot) and 85 pots or more (\$279 per pot) (Table 3-9 and Table 3-10).

Profit at full equity is a measure of the profitability of an individual licence holder, assuming the licence holder has full equity in the operation. It is a useful absolute measure of the economic performance of fishing firms. Average profit at full equity per licence across all categories in 2021/22 (\$48,000) was significantly lower in comparison to the previous year (\$88,000) as well as 2019/20 (\$298,000) (Table 3-6).

Return to capital

There are a number of interpretations of the concept of rate of return to total capital. For the purpose of this analysis it is appropriate to consider the capital as the investment employed by an average licence holder in the fishery. Capital includes boats, licence/quota, fishing gear, sheds, vehicles and other capital items used as part of the fishing enterprise. It does not include working capital or capital associated with other businesses operated by the licence holder. The return to total capital has been calculated as the profit at full equity as a percentage of the total capital employed.

The rate of return to boat capital (i.e. fishing gear and equipment) for all boats was 9.6 per cent in 2021/22, significantly lower than 2020/21 (17.2 per cent) and 2019/20 (57.6 per cent). The rate of return to total capital is lower still, estimated to average 0.8 per cent in 2021/22, declining from 1.5 per cent in the previous year and 4.4 per cent in 2019/20 (Table 3-6).

This low rate of return to total capital is a function of the valuation of licences by licence holders. It does not fully reflect profitability of fishing firms or performance of the fishery.

The rate of return to total capital is calculated using the profit at full equity and the average investment in all capital (i.e. fishing gear and equipment and licence value). The average profit at full equity per boat in the first quartile was almost -\$60,000, compared to \$123,000 in the fourth quartile. This difference is due to lower average gross income in the first quartile compared to the fourth quartile but with higher depreciation and significantly higher total cash costs. In 2021/22, the average rate of return to total capital was -0.9 per cent in the first quartile and 2.7 per cent in the fourth quartile (Table 3-8).

For licence holders with 85 or more pots the average rate of return to total capital was at 1.0 per cent, slightly higher than licence holders with 65 or less pots (0.9 per cent). Licence holders with 66 to 84 pots earned an average rate of return to total capital of 0.6 per cent, the lowest of all groups (Table 3-9).

Licence values

The value of licences, which are determined by current earning capacity and expectations about future earnings, represent a significant proportion of the capital used by each licence holder in the fishery. Based on the 2020 survey and updated for changes in profit at full equity, the average licence value per boat in 2021/22 was estimated to be almost \$5.2 million, a 1 per cent decrease from 2020/21 (\$5.3 million) and an 16 per cent decrease from 2019/20 (\$6.2 million) (Table 3-6).

The number of quota transfers between licence holders and total number of quota units transferred over the period 2002/03 to 2021/22 are detailed in Figure 3-3 and Figure 3-4, respectively. Since 2002/03, the average number of quota transfers between licence holders has been 138 per annum, comprising of 23 permanent transfers and 116 temporary transfers. In 2021/22 there were 266 quota transfers between licence holders, although the majority (216) were temporary transfers (Figure 3-3).

The number of quota units of permanently transferred was 810, a 260 per cent increase from 2020/21. Perhaps a result of rising costs, falling income and market volatility that fishers have experienced in recent years.

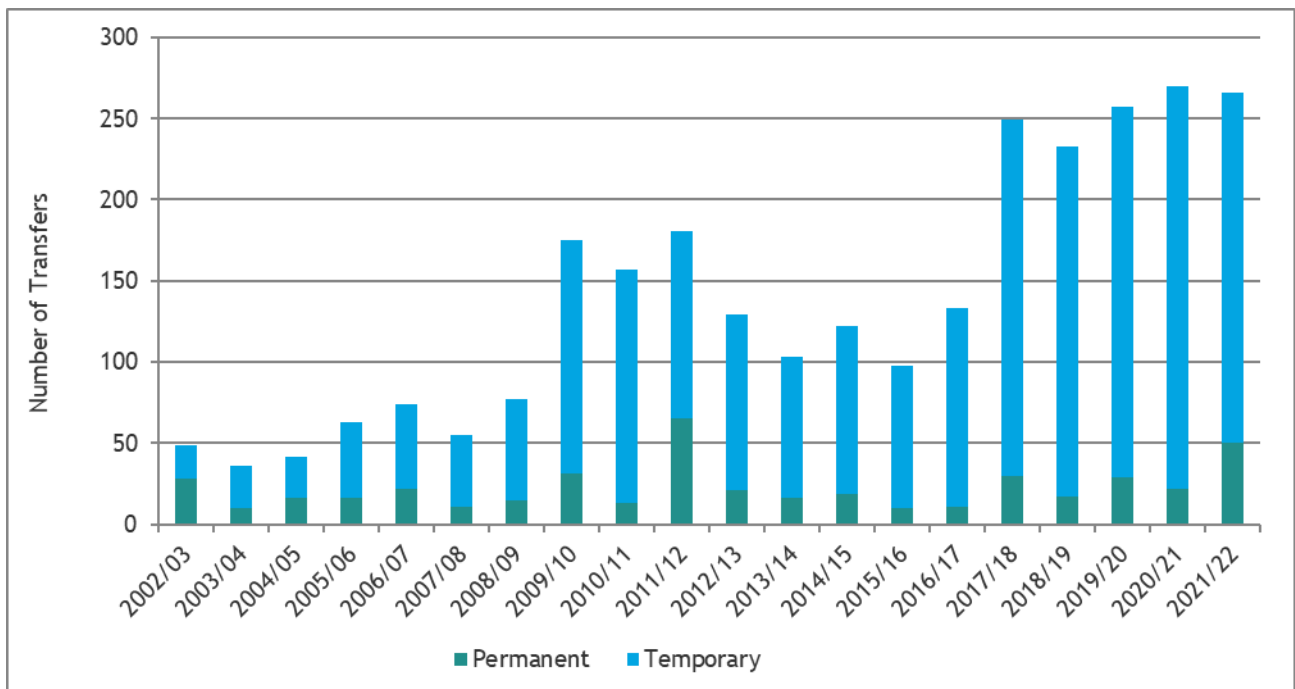
Between 2012/13 and 2016/17 more than 2,000 quota units were traded each year. However, between 2017/18 and 2021/22 the number of quota units traded has risen to over 7,000, highlighting an increasing trend in the number of quota units traded. Over the period 2002/03 to 2021/22, an average of 2,838 quota units have been traded each year (245 permanent and 2,593 temporary). This average annual trade represents 22 per cent of the total quota units in the fishery. In 2021/22 the number of quota units

temporarily transferred was 6,537 which comprised approximately 52 per cent of the total quota units in the fishery (Figure 3-4).

The increased number of temporary transfers from the previous decade shows the trend of increasing proportion of the catch taken with leased quota. This possibly signals rationalisation of the fishery which would be positive for efficiency but also potentially results in a decoupling of ownership versus fishing. From the perspective of the state this is an issue because it means that economic rents may flow to owners who are not resident in the region or even the state, which reduces the regional benefit of the fishery (Section 3.6).

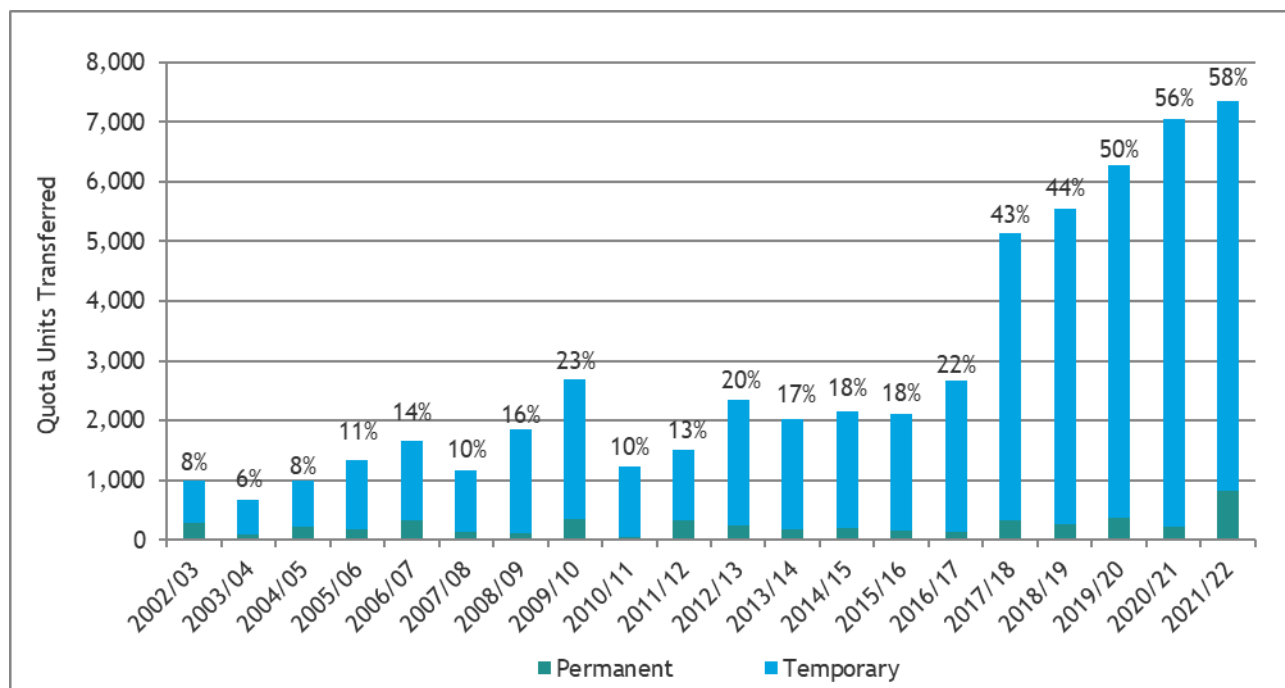
The growth in transfers also signifies an increase in the number of lessee fisherman, albeit at a slower rate to other fisheries in Australia. The slower rate suggests that fishermen continue to remain owner-operators within the SZRL Fishery. This may be related to two factors. Firstly, there may be other employment opportunities in the region so fishers are less compelled to rationalise. And secondly, shorter fishing seasons in SA (compared to the rest of Australia) limit the number of fishing days and thus put a floor on the vessels needed to take the TACC.

Figure 3-3 Number of quota transfers, 2002/03 to 2021/22



Source: PIRSA Fisheries Licensing Section

Figure 3-4 Number of quota units transferred and percentage of total quota units ^a, 2002/03 to 2021/22



^a There were 11,923 quota units (pots) in the SZRL Fishery in total between 2002/03 and 2011/12 but since 2012/13 the total number of quota units was reduced to 11,882.

Source: PIRSA Fisheries Licensing Section

3.6. State and Regional Economic Contribution

Estimates of the economic contribution of the SA SZRL fishing industry in the South Australian economy in 2021/22 are outlined below.

Estimates of the direct economic contribution of the SA SZRL Fishery are consistent with the method employed in PIRSA's Value-added ScoreCard, 2021/22. The following stages in the marketing chain have, therefore, been included in the quantifiable economic contribution:

- the landed beach value of production
- downstream contributions, including the:
 - net value of local (state and regional) processing
 - value of local transport services at all stages of the marketing chain
 - net value of local retail and food service (e.g. hotels & restaurants) trade.

Each of these activities generates flow-on effects to other sectors through purchases of inputs and the employment of labour. These flow-on effects have been estimated using input-output analysis. Input-output analysis is widely used in economic impact analysis and is a practical method for measuring economic contributions at regional and state levels.

Economic contributions at the state and regional levels were based on models for the state as a whole and for the Limestone Coast State Government region, prepared for the Department of Premier and Cabinet (BDO EconSearch 2021c).

In order to compile a representative cost structure for the fishing sector, costs per licence were derived from data provided by operators in the fishery in the financial survey. On an item-by-item basis, the expenditures were allocated between those occurring in the Limestone Coast region, those occurring in South Australia and those goods and services imported from outside the state.

Estimates of the net value of local (i.e. regional and state) processing margins and retail and food service trade margins were derived from PIRSA's value-added ScoreCard (Seafood Scorecard, 2021/22) (PIRSA, pers. comm.). Estimates of the net value of local transport margins and capital expenditure per licence holder were derived from the survey of licence holders.

Economic contributions have been specified in terms of the following economic indicators:

- value of output
- employment
- household income
- contribution to gross state or regional product.

Value of output is a measure of the gross revenue of goods and services produced by commercial organisations plus gross expenditure by government agencies. This indicator needs to be used with care as it includes elements of double counting.

Employment is a measure of the number of working proprietors, managers, directors and other employees, in terms of the number of full-time equivalent jobs.

Household income is a component of Gross State Product (GSP) and Gross Regional Product (GRP) and is a measure of wages and salaries, drawings by owner operators and other payments to labour including overtime payments and income tax, but excluding payroll tax.

Contribution to GSP or GRP is a measure of the net contribution of an activity to the state/regional economy. Contribution to GSP or GRP is measured as value of output less the cost of goods and services (including imports) used in producing the output. It can also be measured as household income plus other value added (gross operating surplus and all taxes, less subsidies). It represents payments to the primary inputs of production (labour, capital and land). Using contribution to GSP or GRP as a measure of economic contribution avoids the problem of double counting that may arise from using value of output for this purpose.

3.6.1. Economic contributions at the state and regional levels

Estimates of the economic contribution generated in 2021/22 by the SA SZRL fishing industry in South Australia and the Limestone Coast region are outlined in Table 3-11 and Table 3-12, respectively.

For each measure of economic activity, the total contributions at the state level are greater than the sum of the regional level contributions. This is to be expected, as the regional contribution is simply a component, albeit a significant one, of the total state contribution.

The direct contribution measures fishing and downstream activities (i.e. processing, transport, retail/food services and capital expenditure). The flow-on contribution measures the economic effects in other sectors of the economy (trade, manufacturing, etc.) generated by the fishing industry activities, that is, the multiplier effects.

Table 3-11 The economic contribution of the SA SZRL fishing industry in SA, 2021/22

Sector	Output		Employment ^a		Household Income		Contribution to GSP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing ^b	66.4	30%	335	31%	28.7	35%	44.1	34%
Processing	3.7	2%	10	1%	0.6	1%	1.2	1%
Transport	8.3	4%	37	3%	2.9	4%	3.5	3%
Retail	11.8	5%	88	8%	5.2	6%	6.9	5%
Food services	3.2	1%	30	3%	1.3	2%	1.8	1%
Capital expenditure ^c	1.7	1%	6	1%	0.5	1%	0.7	1%
Total Direct ^d	95.0	43%	507	48%	39.1	48%	58.2	44%
Flow-on effects								
Trade	15.8	7%	98	9%	6.4	8%	9.2	7%
Manufacturing	14.5	7%	38	4%	2.8	3%	4.4	3%
Business Services	20.0	9%	120	11%	9.6	12%	11.0	8%
Transport	8.1	4%	30	3%	2.3	3%	3.5	3%
Other Sectors	69.3	31%	274	26%	20.9	26%	44.7	34%
Total Flow-on ^d	127.7	57%	560	52%	42.0	52%	72.8	56%
Total ^d	222.7	100%	1,068	100%	81.1	100%	131.0	100%
Total/Direct	2.3	-	2.1	-	2.1	-	2.2	-
Total/Tonne	\$161,200	-	0.8	-	\$58,700	-	\$94,800	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 328 full-time and 101 part-time jobs, that is, 405 jobs in aggregate, which was estimated to be equal to 335 fte jobs.

^b The direct fishing contribution includes Octopus caught by SZRL Fishery licences holders (\$0.5m).

^c Capital expenditure includes fishing related expenditure (boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment) and processing relating expenditure (sheds, buildings and freezers).

^d Totals may not sum due to rounding.

Source: BDO EconSearch analysis

Table 3-12 The economic contribution of the SA SZRL fishing industry in the Limestone Coast region, 2021/22

Sector	Output		Employment ^a		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing ^b	66.4	49%	335	52%	28.7	57%	44.1	54%
Processing	3.7	3%	9	1%	0.5	1%	1.2	2%
Transport	1.7	1%	8	1%	0.6	1%	0.7	1%
Retail	2.1	2%	16	2%	0.9	2%	1.2	1%
Food services	0.3	0%	3	0%	0.1	0%	0.2	0%
Capital expenditure ^c	0.3	0%	1	0%	0.1	0%	0.1	0%
Total Direct ^d	74.4	55%	372	57%	30.9	61%	47.6	58%
Flow-on effects								
Trade	9.4	7%	60	9%	3.9	8%	5.5	7%
Manufacturing	3.8	3%	13	2%	0.8	2%	1.1	1%
Business Services	7.2	5%	46	7%	3.5	7%	4.0	5%
Transport	3.5	3%	14	2%	1.1	2%	1.5	2%
Other Sectors	36.5	27%	145	22%	10.4	21%	22.3	27%
Total Flow-on ^d	60.5	45%	278	43%	19.7	39%	34.4	42%
Total ^d	134.9	100%	651	100%	50.6	100%	81.9	100%
Total/Direct	1.8	-	1.7	-	1.6	-	1.7	-
Total/Tonne	\$97,600	-	0.5	-	\$36,600	-	\$59,300	-

^{a-d} See footnotes from Table 3-11.

Source: BDO EconSearch analysis

Value of output

The value of output generated directly in SA and the Limestone Coast region by SZRL fishing enterprises was \$66.4 million in 2021/22 (Table 3-11 and Table 3-12), while output generated in SA by associated downstream activities (processing, transport, retail/food services and capital expenditure) summed to \$28.6 million (\$8.1 million in the Limestone Coast region, Table 3-12).

Flow-on effects to other sectors of the state economy added another \$127.7 million in output (\$60.5 million in the regional economy). The sectors most affected were the business services, trade, manufacturing and retail sectors. The total output contribution in SA (direct plus indirect) was estimated to be \$222.7 million in 2021/22 (\$134.9 million in the Limestone Coast region).

Employment and household income

In 2021/22, the SA SZRL Fishery was responsible for the direct employment of an estimated 335 full-time equivalents (fte) while downstream activities created employment of around 172 fte jobs state-wide (37 jobs regionally). Flow-on business activity was estimated to generate a further 560 fte jobs state-wide (278

jobs regionally). These state-wide jobs were concentrated in the business services (120), trade (98), manufacturing (38) and transport (30) sectors. The total employment contribution in SA was estimated to be 1,068 fte jobs (651 fte jobs regionally).

Personal income of \$28.7 million was earned in the fishing sector (wages of employees and estimated drawings by owner/operators) and \$10.5 million in downstream activities in SA. An additional \$42 million was earned by wage earners in other businesses in the state as a result of fishing and associated downstream activities. The total household income contribution was \$81.1 million in SA (\$50.6 million in the Limestone Coast region).

Contribution to GSP and GRP

As noted above, contribution to GSP or GRP is measured as value of output less the cost of goods and services (including imports) used in producing the output. In 2021/22, total SA SZRL Fishery related contribution to GSP in SA was \$131.0 million (\$81.9 million in the Limestone Coast region), \$44.1 million generated by fishing directly, \$14.1 million generated by downstream activities (\$3.4 million in the Limestone Coast region) and \$72.8 million generated in other sectors of the state economy (\$34.4 million in the Limestone Coast region).

Total contributions over time

Figure 3-5 and Figure 3-6 illustrate the total economic contribution (direct plus flow-on effects) of the fishery on the SA economy for the 20 years, 2002/03 to 2021/22. Estimates of economic contribution are expressed in 2021/22 dollars. The Adelaide Consumer Price Index was used to adjust for inflation (ABS 2022a).

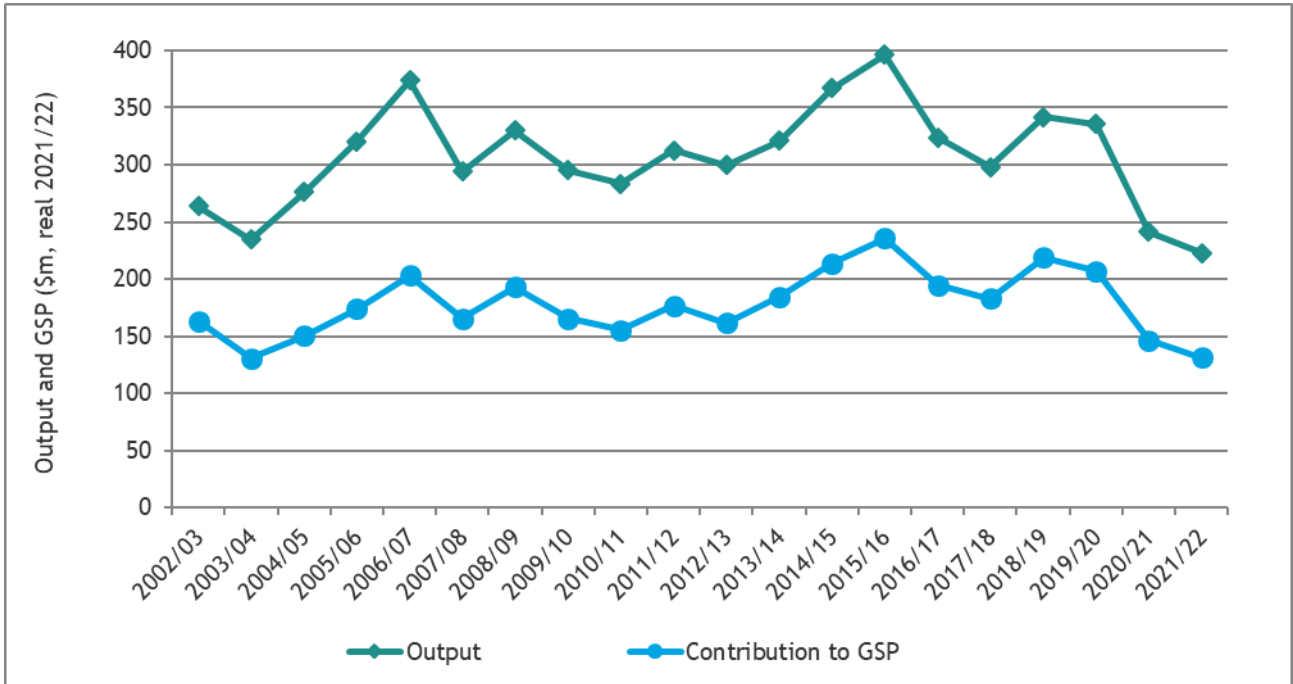
Estimates of economic contribution for 2002/03 does not include the contribution of local retail and food service trade, this effect has been included in subsequent years. As economic contribution estimates for the years 2002/03 to 2021/22 are based on different survey samples and techniques, some of the differences between years are, therefore, attributable to sampling variability.

Care should be taken when using value of output as a measure of economic contribution as it includes elements of double counting. Contribution to GSP is the preferred measure of net contribution to the SA economy.

Despite fluctuations, there has been an overall decrease in the output and GSP contribution of the fishery between 2002/03 and 2021/22, with GSP contribution is at its lowest level since 2003/04 and output contribution at its lowest level since 2002/03 (Figure 3-5). This overall decrease can be attributed to the significant decrease in the value of catch over the period. This decrease is also a reflection of the decreased margins earned by associated downstream sectors (processing, retail trade and food services) as the price charged for SZRL has decreased.

The total employment contribution has decreased slightly overall since 2002/03 (Figure 3-6). This is expected due to the reduction in the total number of active vessels in the fishery (direct employment) and productivity improvements across all related industries. This has also been affected by the decrease in activity of associated downstream sectors (processing, retail trade and food service sectors). Decreased labour in these sectors is a response to decreased earnings from worsened margins. The decrease in employment in 2021/22 since 2019/20 was likely a result of ongoing trade disputes between China and Australia resulting in an unofficial ban on Rock Lobster exports into China.

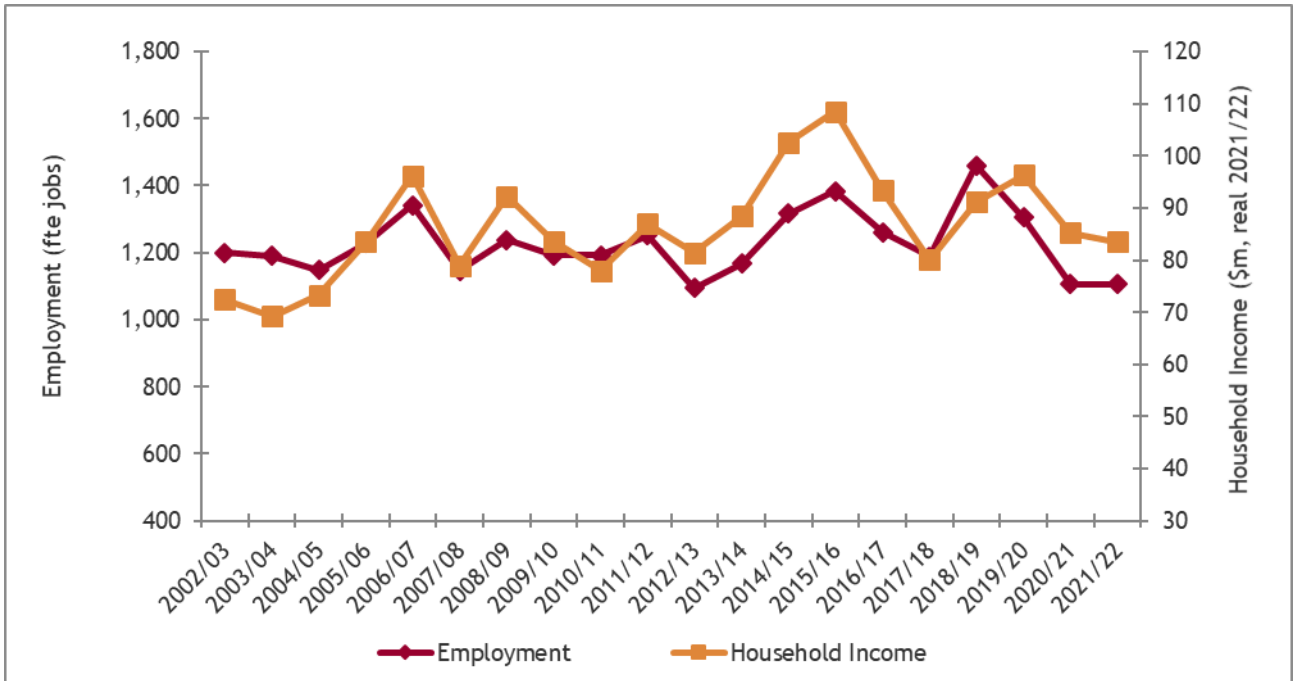
Figure 3-5 Total gross state product and output contribution of the SA SZRL fishing industry in SA, 2002/03 to 2021/22 ^a



^a Monetary values have been converted to 2021/22 dollars using the Adelaide CPI (ABS 2022a and previous editions).

Source: BDO EconSearch (2022b) and BDO EconSearch analysis

Figure 3-6 Total employment and household income contribution of the SA SZRL fishing industry in SA, 2002/03 to 2021/22 ^a



^a See footnote from Figure 3-5.

Source: BDO EconSearch (2022b) and BDO EconSearch analysis

3.7. Net Economic Return

Net economic return (NER) is the return from a fishery after all costs have been met. It is equal to fishing revenue less fishing costs (cost of labour, capital including depreciation, materials and an allowance for “normal” profit). NER is maximised when economic efficiency is maximised. NER³ can also be defined as the difference between the price of a good produced using a natural resource and the unit cost of turning that natural resource into the good. It is worth noting that zero NER is the usual situation for firms in a market without limited or restricted entry and that this rent is the income received by ownership of a licence. In this case the natural resource is the SA SZRL Fishery and the good produced is the landed Rock Lobster.

The unit costs or long-term costs all need to be covered if the licence holder is to remain in the fishery. These long-term costs include direct operating costs such as fuel, labour (including the opportunity cost of a self-employed fisher’s own labour), ice, overheads such as administration and licences and the cost of capital invested in the boat and gear (excluding licence). Capital cost includes depreciation and the opportunity cost of the capital applied to the fishery. The opportunity cost is equivalent to what the fisher’s investment could have earned in the next best alternative use.

Determining the opportunity cost of capital involves an assessment of the degree of financial risk involved in the activity. For a risk-free operation, an appropriate opportunity cost of capital might be the long-term real rate of return on government bonds. The greater the risks involved, the greater is the necessary return on capital to justify the investment in that particular activity. For this analysis the long term (10 year) real rate of return on government (treasury) bonds of 5 per cent has been used and a risk premium of 5 per cent has been applied. It is important to keep in mind that rates applied have a strong influence on estimated rent and is subjective.

What remains after the value of these inputs (labour, capital, materials, and services) has been netted out is the value of the natural resource itself. The NER generated in the SA SZRL Fishery over the period 2002/03 to 2021/22 is outlined in Table 3-13. In 2002/03, the estimated real NER in the fishery was \$21 million which, despite fluctuations and a general increase in between years, decreased to -\$370,000 in 2021/22, the lowest recorded level and the first time NER has been negative over the 20 year period.

However, it is important to note that not all fishers will experience the benefit of this rent because it often flows to quota owners rather than fishers as a result of lease payments. When an NER is generated in a fishery and there are transferable licences, the rent represents a return to the value of the licences.

The 2021/22 aggregate value of licences was estimated to be \$939 million (180 licences with an average value of \$5.2 million). An annual NER of -\$370,000 represents a return of -0.04 per cent to the aggregate value of the licenses in the fishery.

³ Net economic return or economic rent is comprised of three types of rent: entrepreneurial rent, quasi-rent and resource rent. As in any business some operators are more skilful than others and will therefore earn more profit. These profits, which are one component of economic rent, are *entrepreneurial rents*. In the short-term fishers may earn large surpluses over costs, which may provide prima facie evidence of substantial resource rents. However, there are some circumstances where such surpluses can occur but they are not true rents. These are referred to as *quasi-rents*. One example is where a fishery is developing or recovering and there may be under-investment in the fishery. Another example is where there is a short-term but unsustainable increase in price due to, for example, exchange rate fluctuations. However, some profits will be obtained because the natural resource being used (i.e. the fishery) has a value. These profits are described as *resource rents* and are also a component of economic rent.

Table 3-13 Net economic return (NER) ^a in the SA Commercial SA Southern Zone Rock Lobster Fishery, 2002/03 to 2021/22 (\$'000) ^b

	Gross Income	Less Labour	Less Cash Costs	Less Depreciation	Less Opportunity Cost of Capital (@10%)	NER
2002/03	101,767	38,309	20,393	12,781	9,238	21,046
2003/04	76,387	30,197	21,527	12,353	8,929	3,381
2004/05	82,418	22,817	20,180	12,580	9,228	17,613
2005/06	96,001	27,192	21,688	11,399	8,362	27,359
2006/07	113,271	32,968	23,574	11,517	8,448	36,763
2007/08	103,933	29,274	28,423	9,048	8,940	28,248
2008/09	115,394	33,723	29,881	9,013	8,906	33,871
2009/10	92,982	28,216	28,871	8,884	8,778	18,235
2010/11	84,824	23,977	29,108	11,093	8,860	11,787
2011/12	98,928	27,223	28,003	11,009	8,599	24,094
2012/13	86,474	24,589	29,603	10,057	7,855	14,370
2013/14	105,564	29,819	27,903	10,480	7,630	29,733
2014/15	120,063	29,170	24,900	9,742	7,093	49,159
2015/16	131,956	29,910	23,775	9,085	6,614	62,572
2016/17	115,331	32,620	28,903	9,946	8,620	35,242
2017/18	109,913	25,793	24,629	9,359	8,111	42,021
2018/19	122,286	21,458	21,747	8,893	7,707	62,481
2019/20	113,617	30,048	22,891	7,560	9,223	43,895
2020/21	76,234	30,647	23,110	7,269	8,867	6,342
2021/22	66,364	28,795	22,950	6,752	8,237	-370

^a Adjusted for sample bias.

^b This table presents NER in real 2021/22 dollars. Nominal NER is presented in 0. Values have been converted to 2021/22 dollars using the Adelaide CPI (ABS 2022a).

Source: BDO EconSearch analysis

4. OTHER INDICATORS

4.1. External Factors Influencing the Economic Contribution of the Southern Zone Rock Lobster Fishery

There are a number of factors in 2021/22 that have impacted on the economic performance of the fishery. Most of these are likely to continue to affect economic outcomes in the future.

4.1.1. Stock Assessment

The priority of the management of the fishery is to ensure the sustainability of Rock Lobster stock in SA. In order to achieve this, biological indicators have been developed with targets and reference points used as a benchmark of performance against objectives. Reference points can be used to trigger a management response when required (PIRSA 2020). Full details of the stock assessments can be found in Linnane et al. (2021).

In 2021, SARDI published a fishery status report on the fishery biological performance indicators for the SZRL commercial fishery (Linnane et al. 2021). The SZRL fishery biological performance indicators for the years 2004/05 to 2020/21 are summarised in Table 4-1. Since 2004/05, catch rates have steadily declined from 1.8 kg per pot lift to 0.6 kg per pot lift in 2009/10. The catch rate has since increased to 1.64kg per pot lift in 2020/21.

Table 4-1 CPUE and Pre-recruit Index of in the SA SZRL Fishery, 2004/05 to 2020/21^a

Performance Indicator	CPUE (kg/pot lift)	Pre-recruit Index ^b
Trigger Point	< 0.6 kg/ pot lift	< 1.3 undersize/ pot lift
2004/05	1.80	1.31
2005/06	1.60	1.03
2006/07	1.40	1.44
2007/08	1.10	0.69
2008/09	0.70	0.88
2009/10	0.60	1.09
2010/11	0.90	1.47
2011/12	0.90	0.99
2012/13	0.90	0.96
2013/14	1.00	1.12
2014/15	1.03	0.92
2015/16	1.02	0.74
2016/17	0.96	1.00
2017/18	1.22	1.28
2018/19	1.48	1.31
2019/20	1.59	1.76
2020/21	1.64	1.58

^a Latest available publication year.

^b The pre-recruitment index reflects the mean number of undersize lobsters per pot lift. From 2009/10 the pre recruit index is based on voluntary sampling of a smaller sample of pots.

Source: Linnane et al. 2016 and previous editions

4.1.2. Export Markets

The volume and value of Rock Lobster exports from SA have decreased significantly since 2002/03 (72 per cent decrease in volume and 57 per cent decrease in nominal value). However, these data only include exports direct from SA and not product that is shipped interstate and then exported (i.e. more product seems to be shipped via Melbourne or Sydney rather than directly from Adelaide). Hong Kong, Vietnam and until recently China are the main export destinations for SA Rock Lobster exports, as outlined in Section 4.2.

In November 2020, trade disputes between China and Australia resulted in an unofficial ban on Rock Lobster exports into China, historically the largest market for Southern Rock Lobster and the market where the best prices could be achieved. With processors not being able to move Rock Lobster to China, supply in the domestic market increased significantly and prices fell. The ongoing trade disputes with China, accounting for up to 95 per cent of Rock Lobster exports in previous years, have had a significant impact on the performance of the SZRL Fishery.

Factors that will continue to impact exports to these markets include ongoing trade disputes between China and Australia, the value of the Australian dollar (Section 4.1.3), economic growth rates in China and surrounding Asian regions, import tariffs and competition from lower-cost alternative product (Rock Lobster from South Africa and tropical Rock Lobster from Cuba and Vietnam), and the prices within other Australian states due to the co-integration of the Rock Lobster market.

4.1.3. Exchange Rates

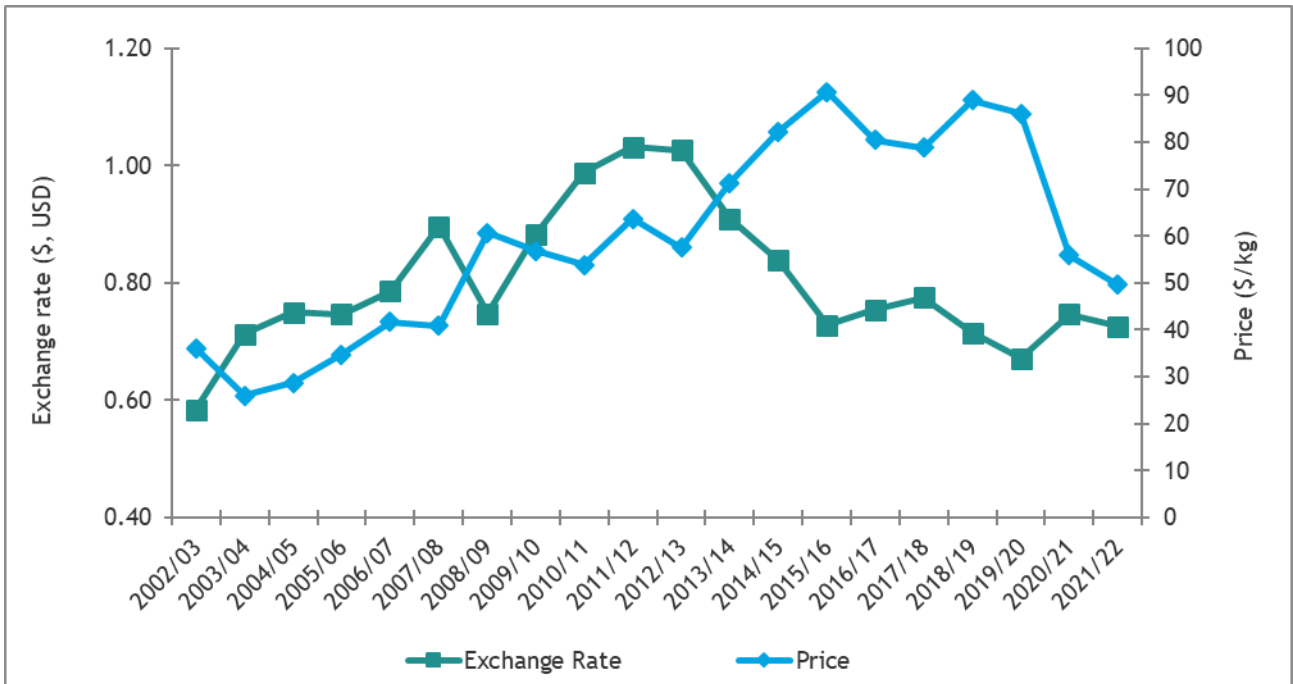
A significant proportion of the South Australian Rock Lobster catch is exported overseas. Accordingly, the value of the Australian dollar can have a significant impact on the economic performance of the fishery as it influences the cost of Australian exports overseas. Significant changes in the value of the Australian dollar (AUD) have the potential to influence the demand for Australian Rock Lobster exports. The Australian dollar appreciated against the US dollar (USD) between 2002/03 and 2012/13 with the dollar reaching parity in 2011/12 and 2012/13. Since then, the Australian dollar has depreciated against the US dollar (USD).

Historically, the most significant export destination for South Australian Rock Lobster has been Hong Kong (Figure 4-6 and Figure 4-7). As the Hong Kong Dollar (HKD) is pegged to the USD, the relationship between the USD and AUD can be expected to affect the price of Rock Lobster. The average exchange rate in 2021/22 was US \$0.73, down 3 per cent from the average from the previous year (US \$0.75). The relationship between the average price in the SZRL Fishery and the exchange rate between 2002/03 and 2021/22 is illustrated in Figure 4-1.

A widely used measure of the relationship between two variables, such as price and exchange rate, is the coefficient of correlation. The coefficient of correlation can range in value from +1.0 for a positive perfect correlation to -1.0 for a perfect inverse correlation. The coefficient of correlation between the USD and AUD exchange rate and price is 0.04⁴. This indicates that there is no inverse correlation between the two variables that covers the whole period of analysis, although year to year movements can be observed (Figure 4-1). This implies price growth for Rock Lobster over the whole period has been from market changes rather than exchange rate volatility.

⁴ Because the HKD is pegged to the USD, the coefficient of correlation between the (HKD) exchange rate and the price for SA Rock Lobster for the period 2002/03 to 2021/22 is similar (0.05).

Figure 4-1 Exchange rate (USD) and average price for SA SZRL, 2002/03 to 2021/22



Source: SARDI Aquatic Sciences and RBA (2022a)

Figure 4-2 De-trended exchange rate (USD) and average price for SA SZRL, 2002/03 to 2021/22



Source: SARDI Aquatic Sciences and RBA (2022a)

De-trending the exchange rate and price data removes the long-run increasing trends, clear in Figure 4-1, and reveals the relationship between the variables in terms of short-run changes. The de-trended data are illustrated with dashed lines in Figure 4-2 for the years 2002/03 to 2021/22. The coefficient of correlation between the de-trended price and exchange rate is 0.08 over this period, indicating a very slight positive correlation between price and exchange only over the short-term.

In the long-run, price trends seen in the SZRL Fishery are not simply a function of exchange rate but shifts in the market supply and demand. Numerous factors have contributed to dynamics of this market over the time period shown, including tariff barriers, increasing affluence, and changes in the supply of products. Due to the slight positive correlation, short-run fluctuations in price cannot be explained by short-run fluctuations in the exchange rate.

4.2. Rock Lobster Exports from SA

Rock Lobster Exports from SA in Figure 4-3 to Figure 4-7 and the associated data in Appendix 2 provide a historical breakdown of total international exports of Rock Lobster directly from SA, by category and country of destination, for the period 2002/03 to 2021/22⁵.

As a proportion of total Rock Lobster catch, Rock Lobster exports from SA declined between 2002/03 (92 per cent) and 2005/06 (74 per cent) but increased between 2005/06 and 2007/08 (90 per cent). Since 2007/08, the proportion of catch exported has decreased significantly, with only 37 per cent of the catch exported directly from SA in 2021/22. The increase in exports between 2015/16 and 2016/17 could be attributed to the Chinese free trade agreement (Figure 4-3).

Anecdotal evidence suggests that Rock Lobster processors have been increasing sales to domestic markets in order to provide additional financial security which may account for some of the drop in the proportion of Rock Lobster exported. As the data only includes product exported directly from SA, it is also possible that the decrease in exports has been caused by a change in export pathways (i.e. product being shipped overseas via Victoria and NSW). The decline in 2020/21 and 2021/22 is also attributable to the trade disputes between Australia and China leading to an unofficial ban on Rock Lobster exports into China. Whilst trade disputes between Australia and China show signs of improvement, the unofficial ban remains. The increase in the quantity of exports in 2021/22 (19 per cent increase from 2020/21) and decrease in the value of exports in 2021/22 (3 per cent decrease from 2020/21) is most likely attributable to another change in export pathways since Vietnam and Hong Kong are once again crucial export destinations.

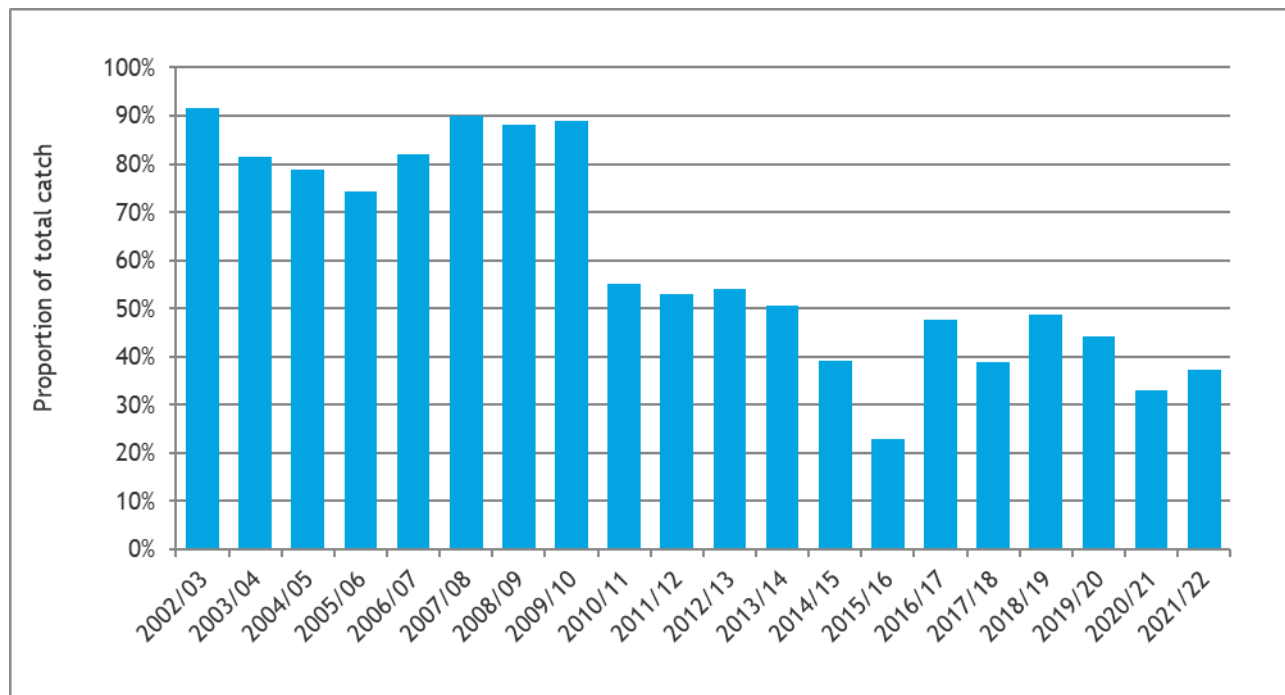
Between 2002/03 and 2005/06, the volume of Rock Lobster exports decreased by 19 per cent, before increasing by 18 per cent to reach a peak of 2,077t in 2007/08. Since 2007/08, the total quantity of exports of Rock Lobster has decreased significantly, primarily the result of a reduction in catch. After reaching a low of 505t in 2020/21, export quantity increased by 19 per cent in 2021/22 (602t).

Between 2002/03 and 2004/05, the value of Rock Lobster exports decreased by 25 per cent before increasing by 67 per cent through to 2008/09 where it reached a peak of \$114 million. Since then, the total value of Rock Lobster export from SA has fallen significantly. In 2021/22 the total value of Rock Lobster exports was \$39 million, down 57 per cent since 2002/03 (Figure 4-5 and Figure 4-7).

⁵ That is, exports from the Northern and Southern Zone Rock Lobster fisheries in aggregate. These data only include exports direct from SA, not product that is shipped interstate and then exported. They could also include product that is shipped from interstate and exported from SA.

Whole Rock Lobster (live, fresh or chilled) was the most significant category of export in all years reported, accounting for almost all of total exports by quantity and by value over the period of analysis (Figure 4-4 and Figure 4-5). For a full breakdown of exports by category refer to Appendix Table 2-1 to Appendix Table 2-4.

Figure 4-3 Rock Lobster exports from SA as a proportion of total catch, 2002/03 to 2021/22



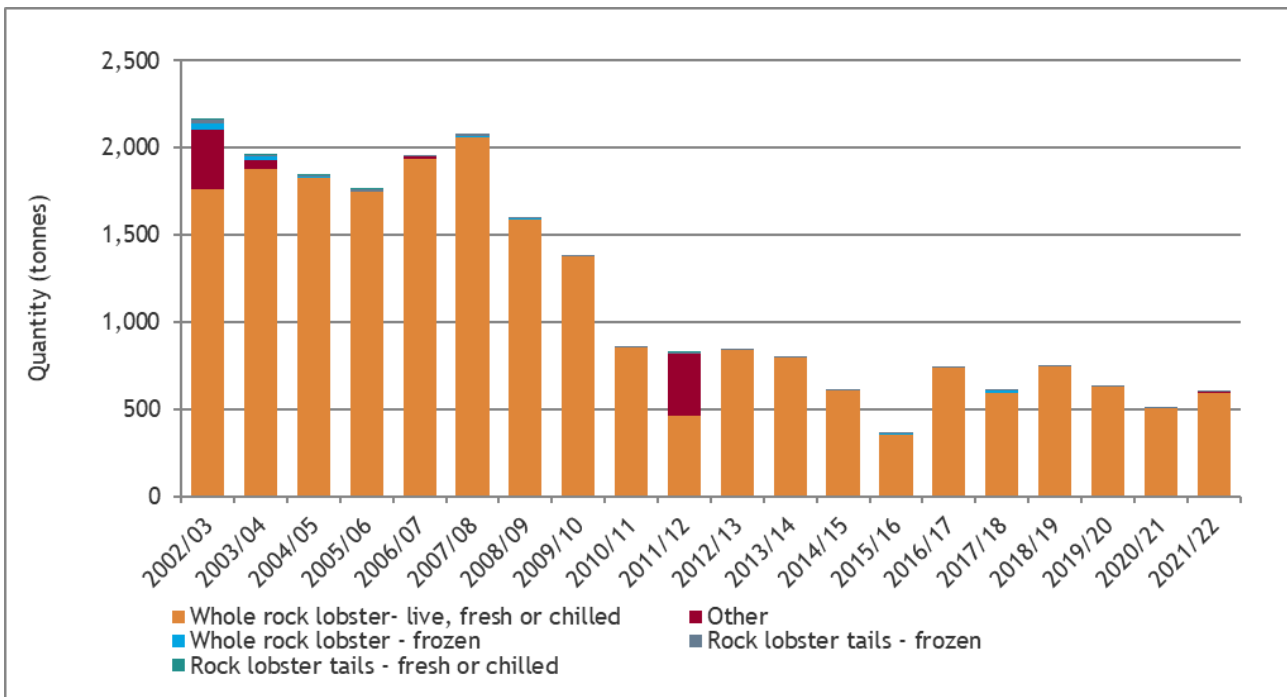
Source: Appendix Table 2-1, Appendix Table 2-2 and Table 3-3

The most significant export destination over the period 2002/03 to 2011/12 was Hong Kong, accounting for an average of 87 per cent of the total quantity and the total value of exports of Rock Lobster over this period (Figure 4-6 and Figure 4-7).

In recent years Vietnam and China have become important export destinations for Rock Lobster with the exports from SA to Vietnam rising significantly since 2010/11 and those to China increasing significantly from 2016/17 to 2019/20. After reaching a high of 95 per cent of exports of SA Rock Lobster going to China in 2019/20, markets have since diversified as a result of ongoing trade disputes between China and Australia, with China now only accounting for 1 per cent of exports of SA Rock Lobster in 2021/22. Hong Kong and Vietnam have once again become important export destinations rising 53 per cent and 32 per cent, respectively, since 2019/20.

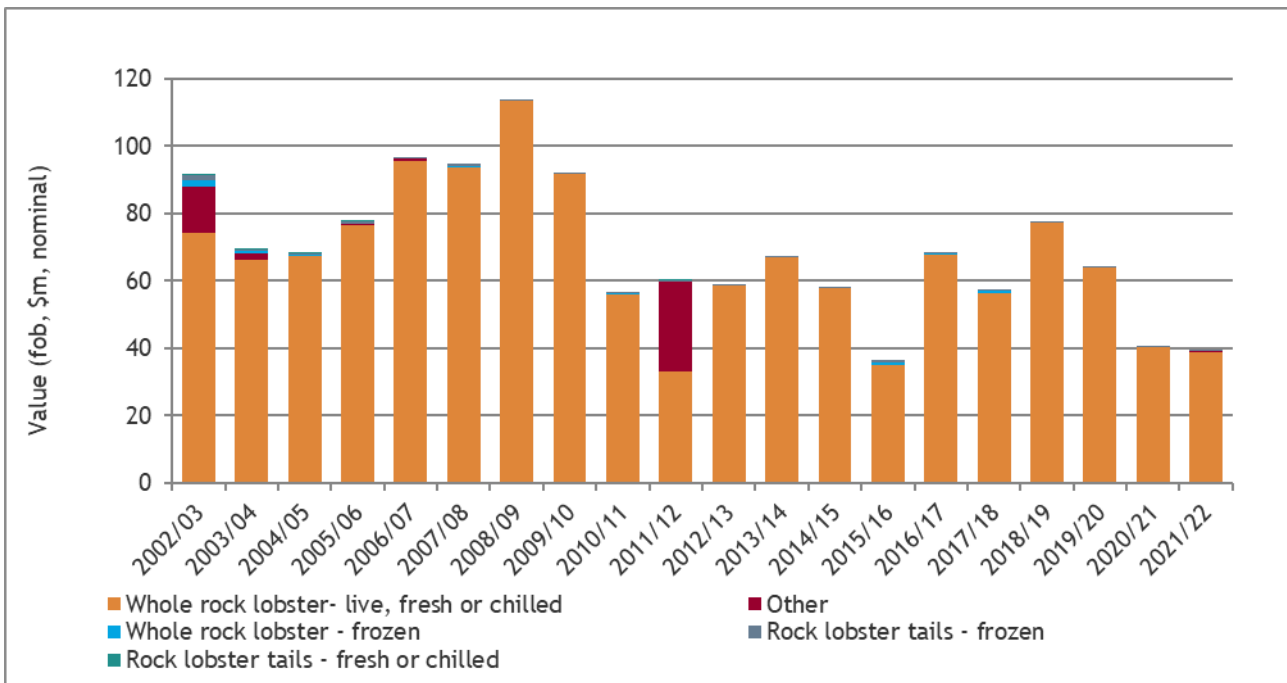
This is reflected to some extent in Figure 4-6 and Figure 4-7, although as some SA product is shipped interstate before being exported overseas, the final destination of all SA Rock Lobster is unknown. For a full breakdown of exports by country of destination refer to and Appendix Table 2-5 and Appendix Table 2-8.

Figure 4-4 Rock Lobster exports from SA, quantity (t) by category, 2002/03 to 2021/22



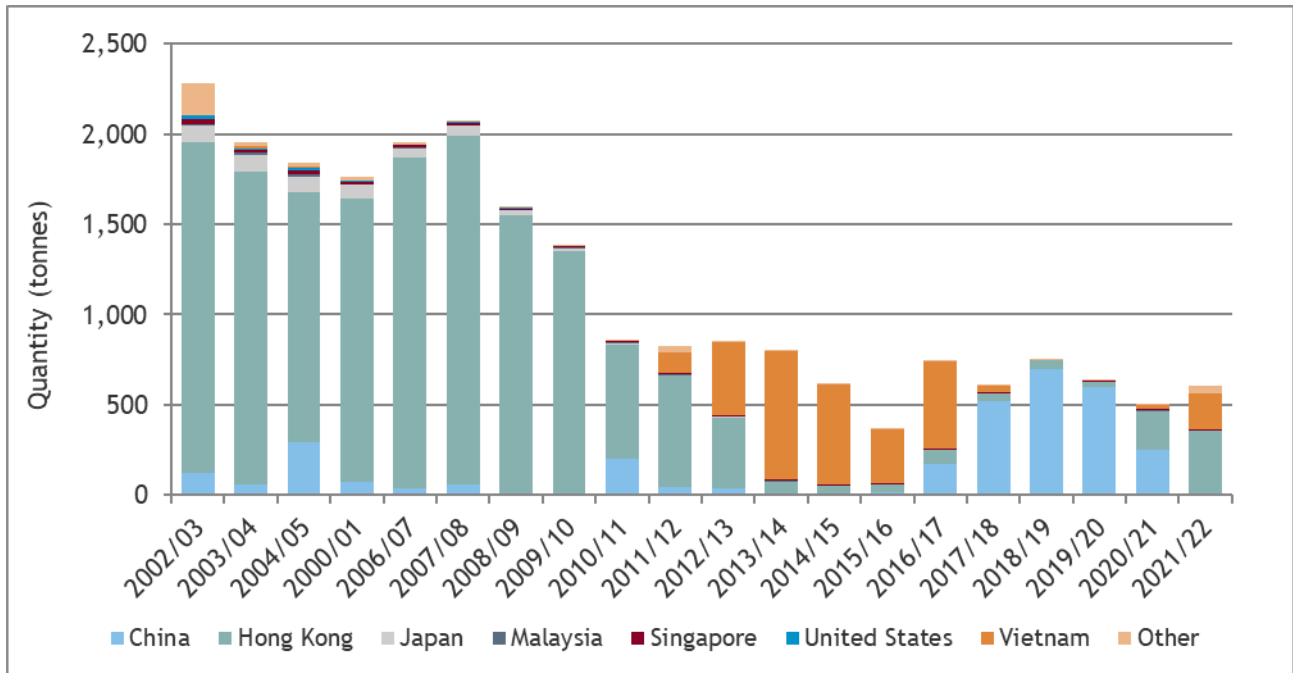
Source: Appendix Table 2-1 and Appendix Table 2-2

Figure 4-5 Rock Lobster exports from SA, value (\$m fob) by category, 2002/03 to 2021/22



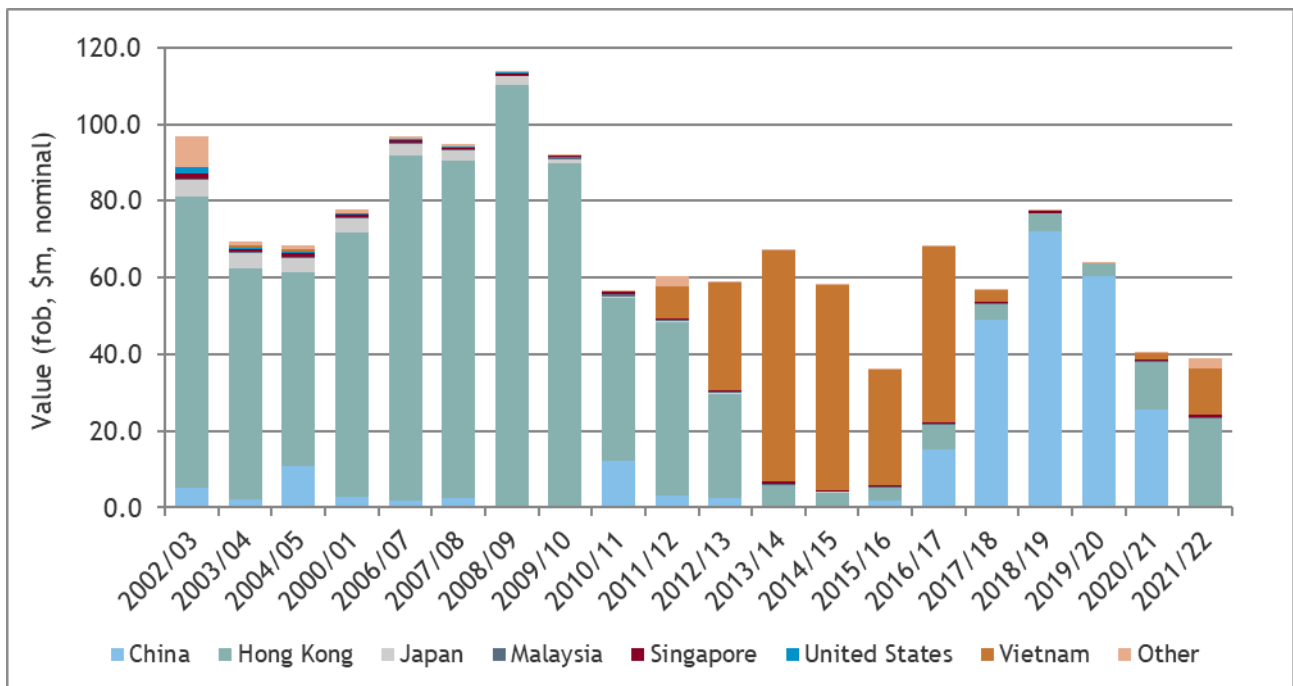
Source: Appendix Table 2-3 and Appendix Table 2-4

Figure 4-6 Rock Lobster exports from SA, quantity (t) by country of destination, 2002/03 to 2021/22



Source: Appendix Table 2-5 and Appendix Table 2-6

Figure 4-7 Rock Lobster exports from SA, value (\$m fob) by country of destination, 2002/03 to 2021/22



Source: Appendix Table 2-7 and Appendix Table 2-8

4.3. Contribution to the Community

The operation of the SA SZRL Fishery (and the employment the fishery generates and the households it maintains) either directly or indirectly contributes to keeping families in regional communities.

As a part of the 2020 survey, licence holders were asked to provide information relating to the ways in which they contribute to their local community. Their responses are summarised in BDO EconSearch (2022a).

4.4. Social Indicators

In 2014, 2018 and 2020 the economic indicators survey of commercial fisheries was extended to include the collection of social indicators. The results of the social indicators component of the survey are detailed in BDO EconSearch (2022a).

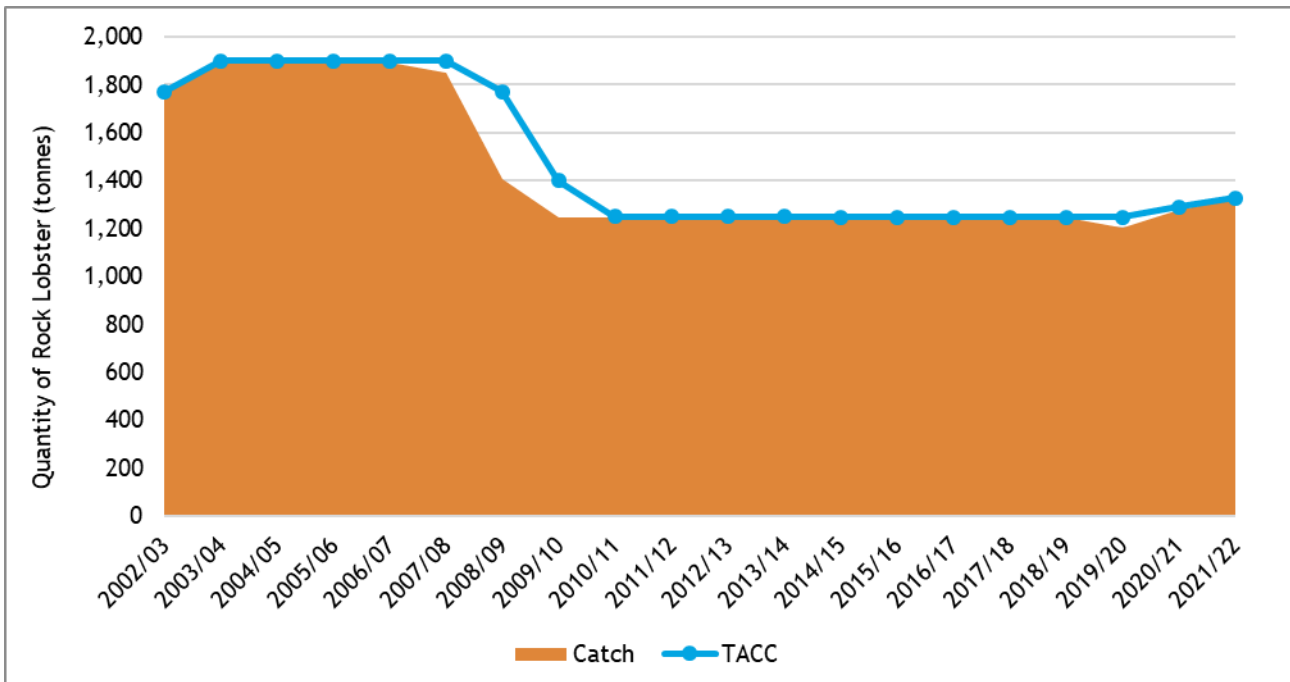
5. ECONOMIC TRENDS IN THE FISHERY

5.1. Catch and Gross Value of Production

Figure 5-1 presents time series for catch and TACC in the SA SZRL Fishery. The figure illustrates that total catch followed the TACC set for the fishery closely until 2007/08 when catch fell below the TACC for three years, 2007/08 to 2009/10. This triggered three subsequent annual reductions of the TACC between 2008/09 and 2010/11 before catch stabilised very close to the TACC until 2019/20 which saw catch fall away from the TACC again to around 1,203t. This reduction in catch in 2019/20 is a result of international market closures during early 2020, resulting in fishing in the SZRL Fishery coming to a halt during its peak harvest and sales period. The TACC was then increased to 1,289 in 2020/21 and again in 2021/22, to 1,327t with 7 tonnes of uncaught quota carried over from 2020/21.

The value of catch, in real 2021/22 dollars, in the SZRL Fishery fluctuated between years, but decreased by 35 per cent overall (Figure 5-2) resulting from a real price decrease of 14 per cent. The third consecutive decrease brings GVP to the lowest level over the 20-year period.

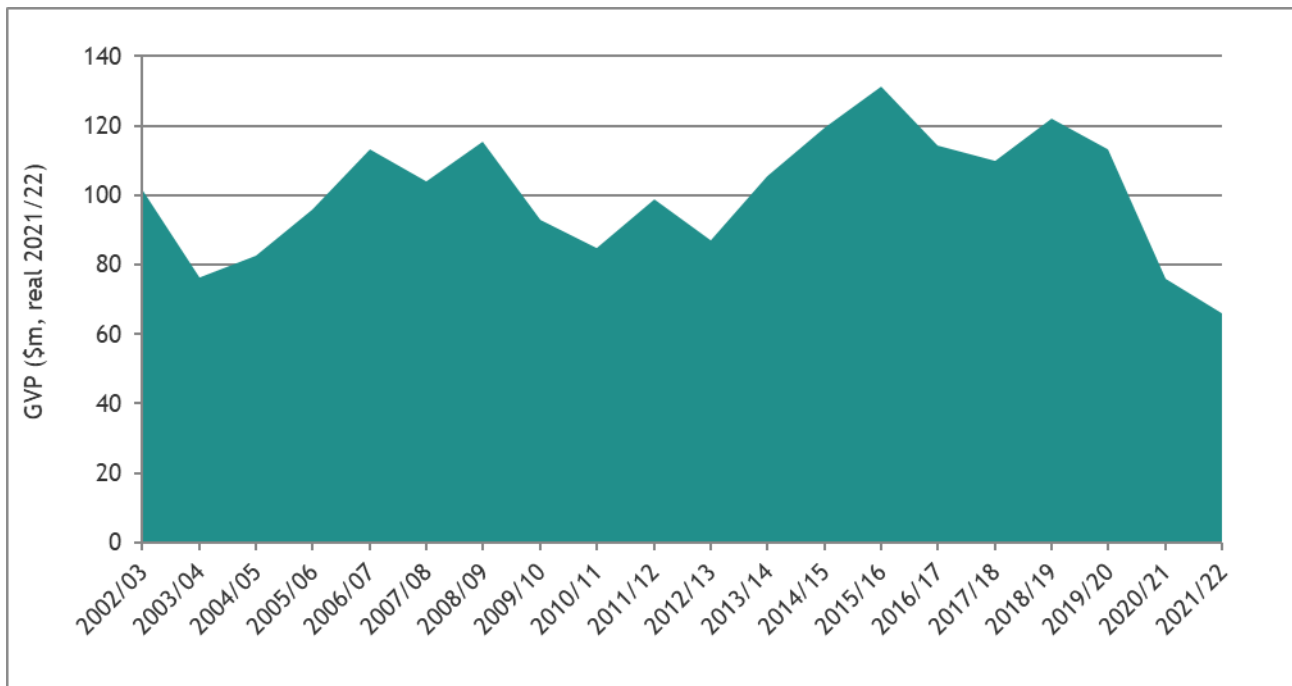
Figure 5-1 SA SZRL Fishery catch and TACC, 2002/03 to 2021/22^a



^a 7 tonnes of uncaught quota was carried over from 2020/21 into 2021/22.

Source: Table 3-3

Figure 5-2 SA SZRL Fishery GVP, 2002/03 to 2021/22 ^a



^a Estimates of GVP are expressed in real 2021/22 terms.

Source: Table 3-3

5.2. Management Costs

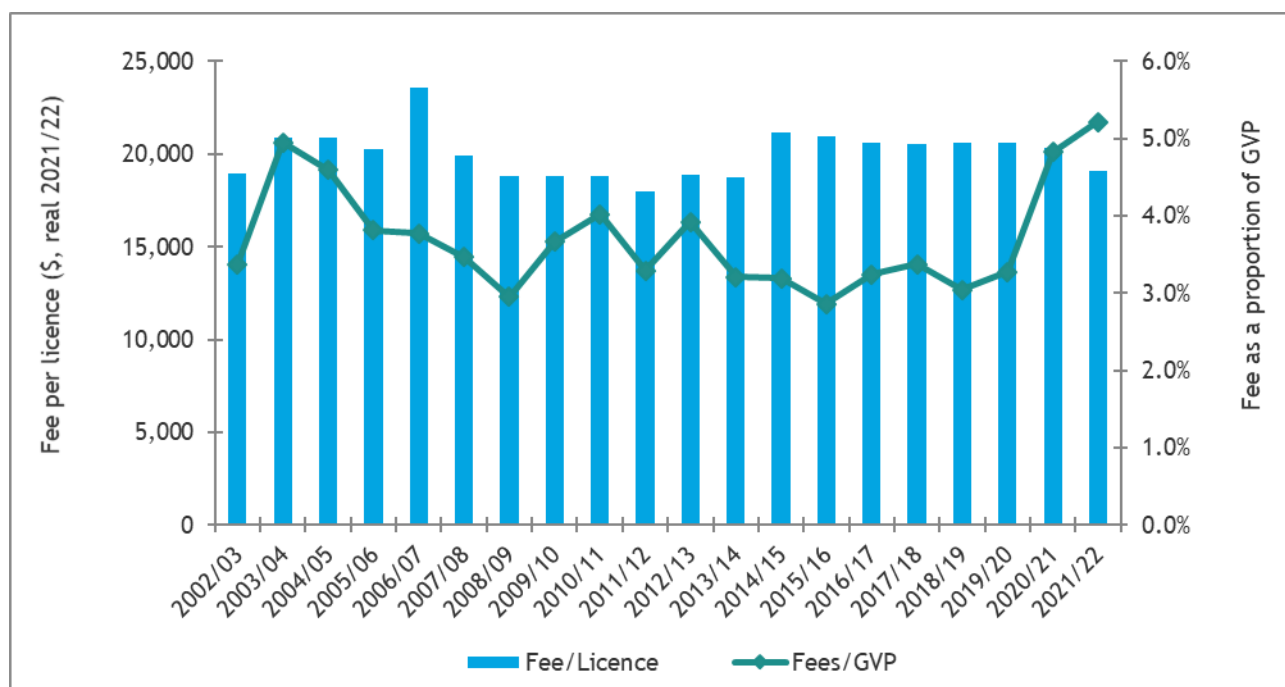
The average management fee per licence and the licence fee as a proportion of GVP are illustrated in Figure 5-3. Since 2002/03 the following trends have emerged (all values in real 2021/22 dollars).

- Licence fees as a percentage of GVP increased between 2002/03 (3.4 per cent) and 2021/22 (5.2 per cent).
- The licence fees per kilogram of landed Rock Lobster increased from \$1.95 in 2002/03 to \$2.58 in 2021/22. However, the estimate for 2021/22 (\$2.58) is the lowest since 2008/09 (\$2.42).
- The fee per licence peaked at \$23,599 in 2006/07 but has since fallen and was \$19,071 in 2021/22.
- The total number of licences fell from 181 in 2002/03 to 180 in 2014/15 and has remained at 180 since.

As aggregate licence fees remained steady in real terms and the number of licences fell by less than 1 per cent over the period, the increase in fees as a proportion of GVP between 2002/03 and 2021/22 was mainly attributable to the decrease in catch and GVP. Catch in 2021/22 was approximately 25 per cent below that achieved in 2002/03, while the price was approximately 14 per cent lower in real terms (resulting in the value of catch decreasing by 35 per cent in real terms over the 20 year period).

As the Southern Zone Rock Lobster Fishery remains impacted by the disruption to the Chinese market, fishers will receive a temporary 50 per cent licence fee waiver for the 2022/23 fishing season.

Figure 5-3 Management fee per licence and as a proportion of GVP, 2002/03 to 2021/22 ^a



^a Estimates of the fee per licence are expressed in real 2021/22 terms.

Source: Table 3-5

5.3. Exchange Rate

A proportion of the South Australian Rock Lobster catch is exported overseas (37 per cent in 2021/22) and so the value of the Australian Dollar can have an impact on the economic performance of the fishery. However, as explained in Section 4.1.3, a direct relationship between the exchange rate and price is not evident in the data in the long run (Figure 4-1), and year-to-year fluctuations in the exchange rate does not appear to contribute to fluctuations in price compared to numerous other factors (Figure 4-2).

5.4. Financial Performance Indicators

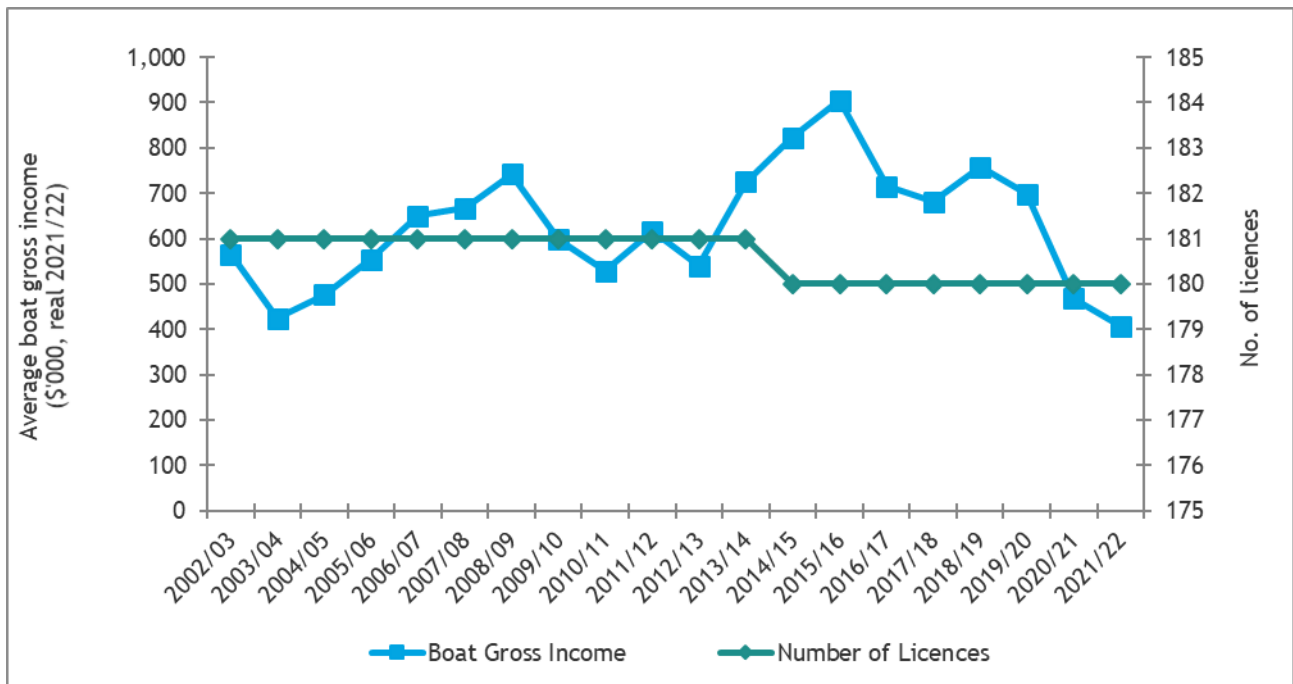
Average income

Average income and total number of licences in the fishery for the period 2002/03 to 2021/22 is illustrated in Figure 5-4. The total number of licences in the fishery declined from 181 to 180 over this period. In real terms, average boat income decreased by 28 per cent over this period. The decrease in real boat income can be explained by the real decrease in price of 14 per cent and a 25 per cent decline in fishery catch over the same period.

Operating cost trends

A breakdown of major cost items as a proportion of total cash costs is illustrated in Figure 5-5. In each year of the analysis labour costs accounted for the largest share of total cash costs. The labour costs are comprised of payments to licence owners and crew as well as an imputed wage to those licence owners and other family members who are not paid a wage directly by the business. Other significant cash costs were fuel, repairs and maintenance and licence fees (Figure 5-5).

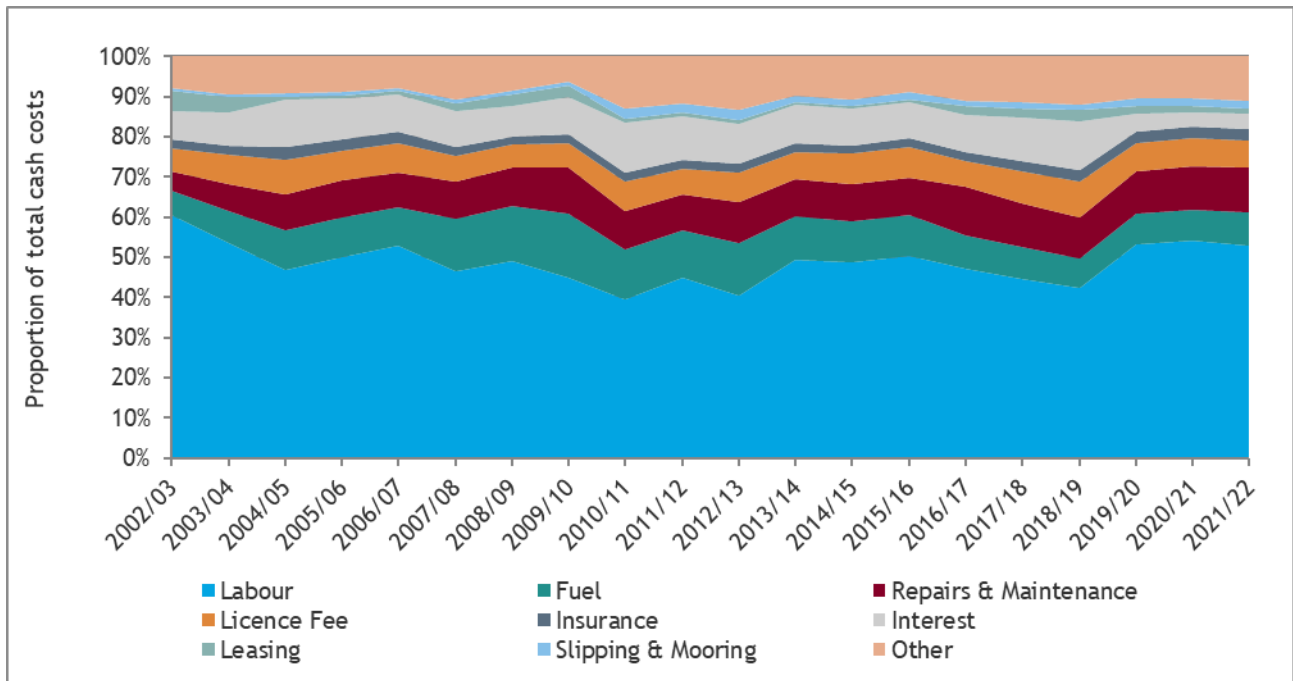
Figure 5-4 Average income per licence in the SA SZRL Fishery, 2002/03 to 2021/22 ^a



^a Estimates of average boat gross income are expressed in real 2021/22 terms.

Source: Table 3-5, Table 3-6 and Appendix 4

Figure 5-5 Cost shares in the SA SZRL Fishery, 2002/03 to 2021/22 ^a

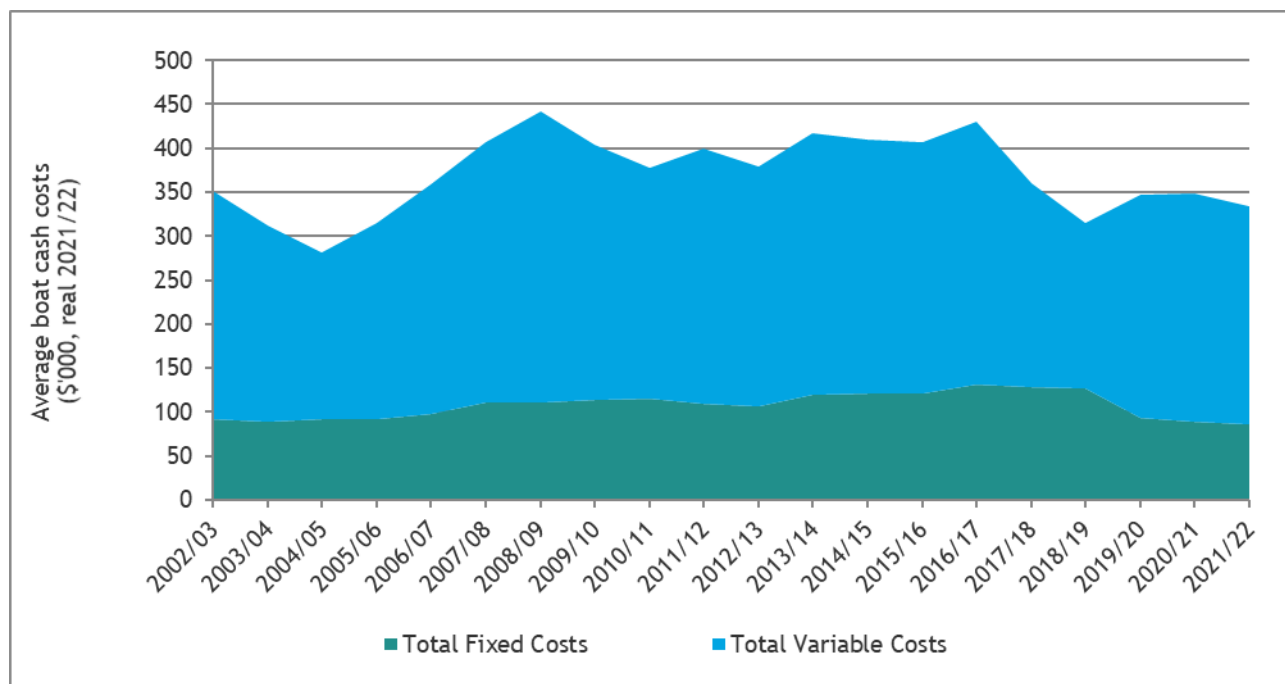


^a Financial performance estimates were based on different survey samples and techniques. Some of the difference between years is, therefore, attributable to sampling variability.

Source: Table 3-6 and Appendix 4

The cash costs detailed in Figure 5-5 can be categorised as either variable or fixed costs. Total variable costs and total fixed costs are illustrated in Figure 5-6 on an average per boat basis. Total variable costs have fluctuated between years but decreased overall between 2002/03 to 2021/22. Total fixed costs have fluctuated much less from year to year but increased from 2002/03 to 2016/17 before declining in each consecutive year since (Figure 5-6).

Figure 5-6 Average total costs in the SA SZRL Fishery, 2002/03 to 2021/22 ^a



^a Estimates of average costs are expressed in real 2021/22 terms.

Source: Table 3-6 and Appendix 4

Cost price squeeze

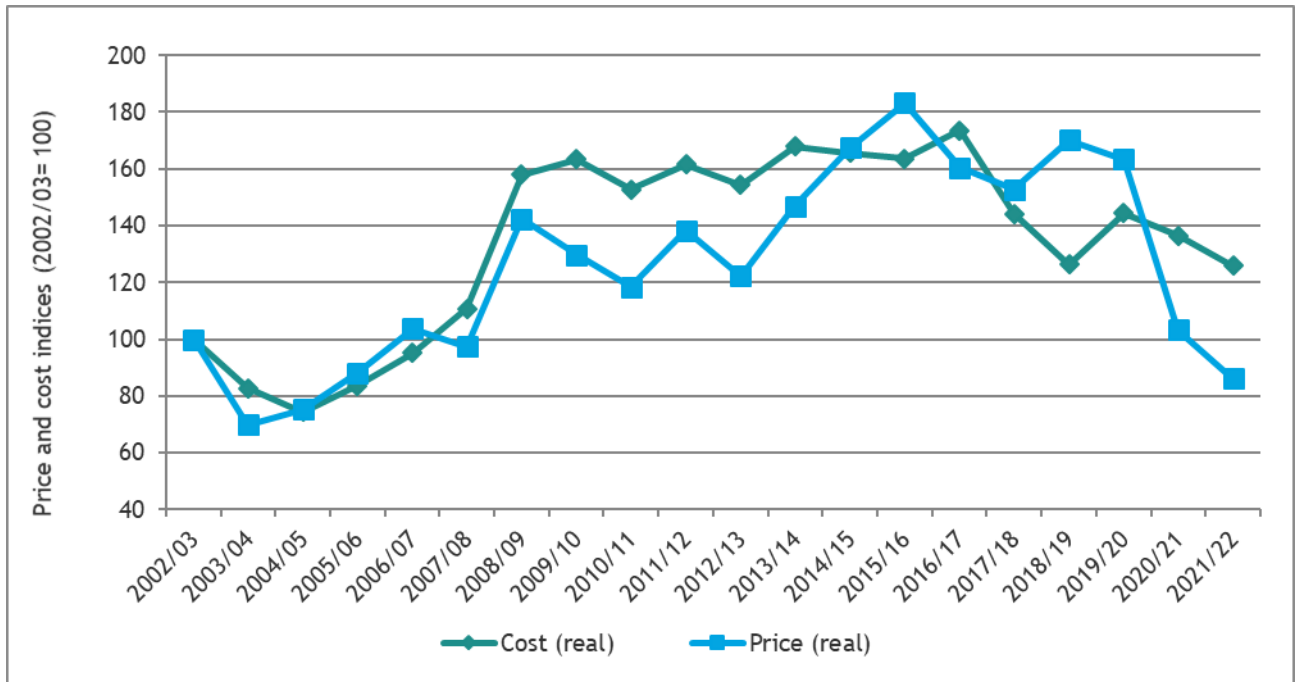
Real price and cost indices (in 2021/22 dollars) for the SZRL Fishery for the years 2002/03 to 2021/22 are summarised in Figure 5-7. These indicators are derived from the average price and average cost per kilogram of catch. Between 2002/03 and 2003/04, the average Rock Lobster price fell by 30 per cent in real terms. Since then, the average price has increased, peaking in 2015/16 at \$105.70/kg before declining significantly until 2021/22. Between 2015/16 and 2021/22 average price declined by 53 per cent as a result of ongoing trade disputes between China and Australia, leading to an unofficial ban on Rock Lobster exports into China. Overall, between 2002/03 and 2021/22, average price decreased by 14 per cent in real terms.

The average costs of catch in the SA SZRL Fishery fluctuated between years but generally increased. In 2021/22, average real cash costs per kilogram were 26 per cent more than in 2002/03 (Figure 5-7).

Profitability

Selected measures of profitability for the average active boat in the SZRL Fishery are summarised in Figure 5-8 for the years 2002/03 to 2021/22. Changes in each of the profitability measures for the fishery were closely related to the average income earned. Profitability fluctuated between 2002/03 and 2021/22 but generally increased between 2002/03 and 2015/16 and then declined until 2021/22 (Figure 5-8).

Figure 5-7 Average boat price and cost indices for the SA SZRL Fishery, 2002/03 to 2021/22 ^{a,b}

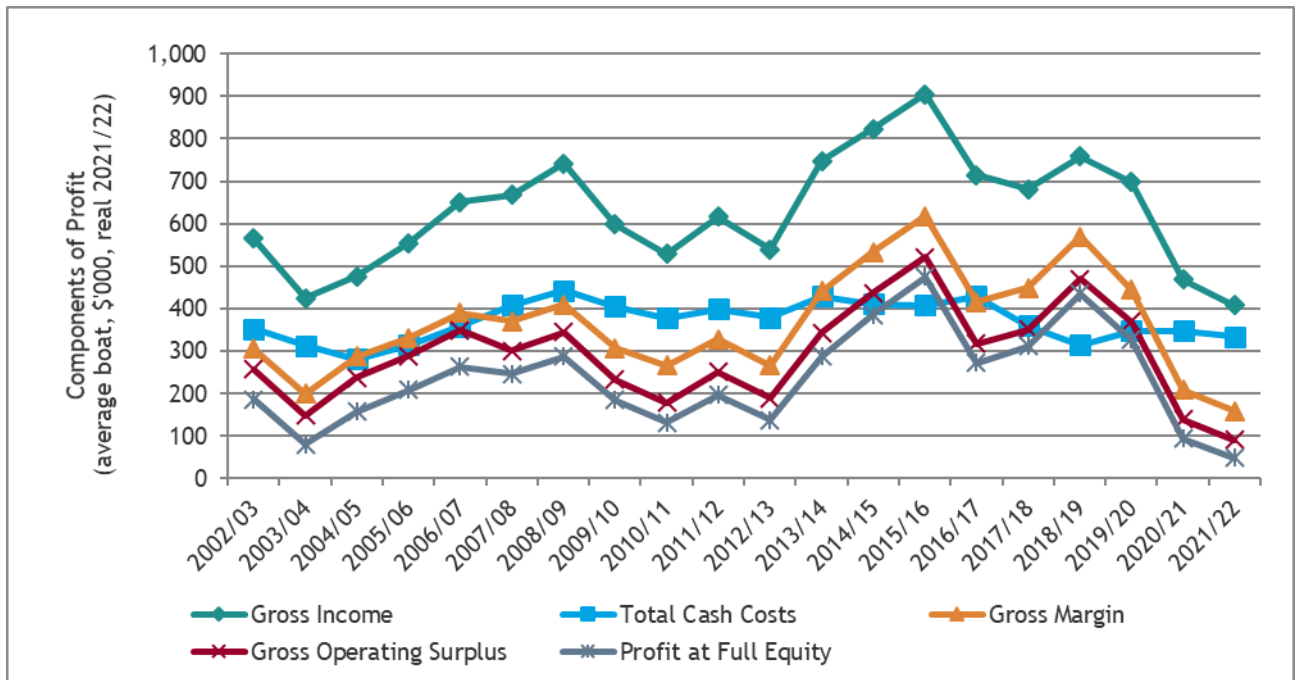


^a Estimates of average costs and price are expressed in real 2021/22 terms.

^b Note, cost estimates include the opportunity cost of labour.

Source: Figure 3-1, Table 3-6 and Appendix 4

Figure 5-8 Average income and profit per boat in the SA SZRL Fishery, 2002/03 to 2021/22 ^a



^a Estimates of income and profitability measures are expressed in real 2021/22 terms.

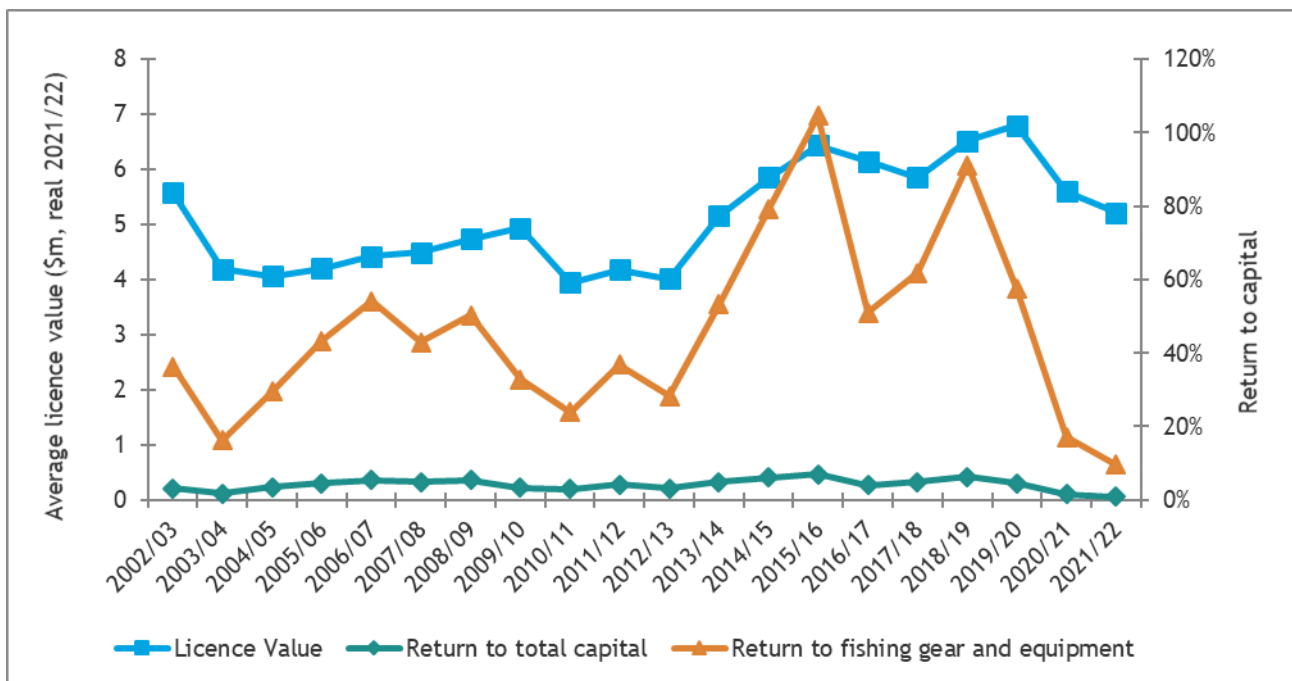
Source: Table 3-6 and Appendix 4

Return to capital

Estimates of the total value of licences and the rate of return to capital are illustrated in Figure 5-9. Total capital includes boats, licence/quota, fishing gear, sheds, vehicles and other capital items used as part of the fishing enterprise. Return to total capital is calculated to be profit at full equity as a percentage of total capital employed.

Despite fluctuations, the estimated rate of return to total capital for the fishery decreased overall between 2002/03 (3.1 per cent) and 2021/22 (0.8 per cent). The rate of return to fishing gear and equipment also declined, from 36 per cent in 2002/03 to 10 per cent in 2021/22 reflecting a fall in the value of catch relating to decreased income (Figure 5-9).

Figure 5-9 Return to capital in the SA SZRL Fishery, 2002/03 to 2021/22 ^a



^a Estimates of licence value are expressed in real 2021/22 terms.

Source: Table 3-6 and Appendix 4

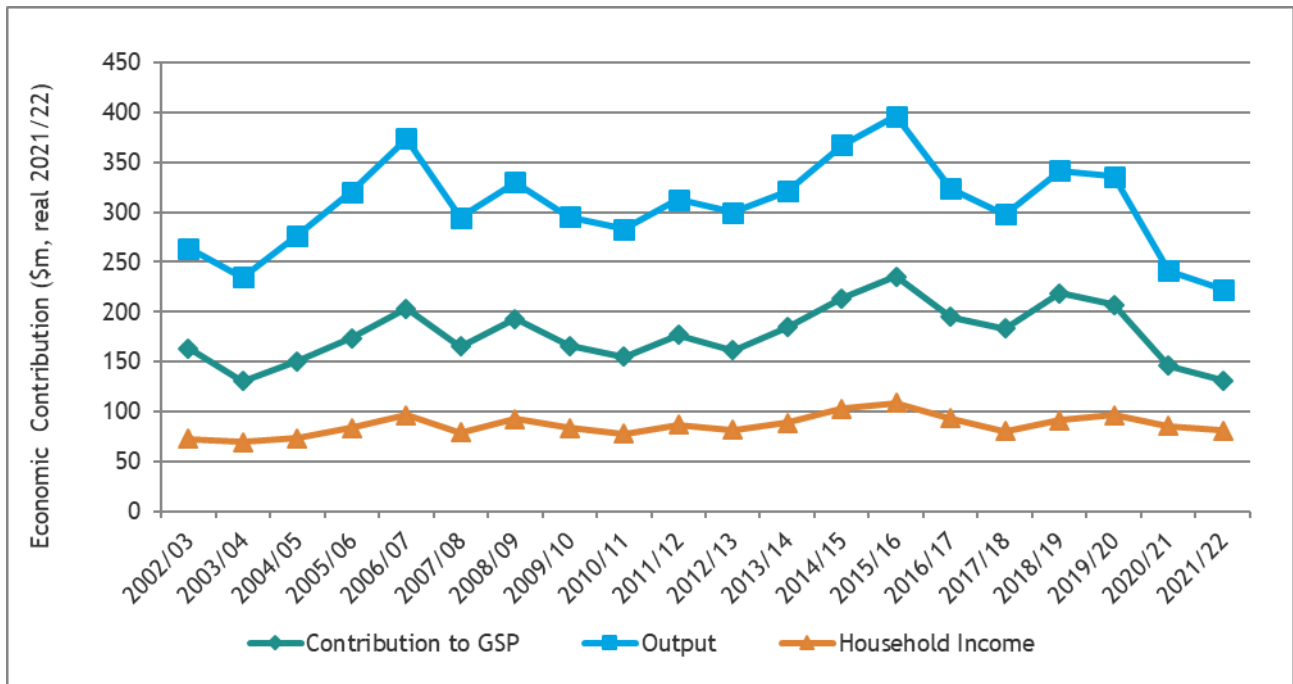
5.5. Contribution to SA Economy

Figure 5-10 and Figure 5-11 illustrate the total economic contribution of the fishery on the SA economy for the past 20 years, 2002/03 to 2021/22. Total economic contribution refers to the direct fishing industry contributions (fishing, processing, etc.) and the indirect contributions on other sectors of the economy.

The change in total output and gross state product (GSP) contributions are closely related to changes in price and fishery GDP. In 2021/22, the fishery’s contribution to GSP was estimated to be \$131 million, a decrease from 2002/03 (\$163 million) (Figure 5-10).

There was a decrease in the employment contribution of the fishery between 2002/03 (1,199 fte jobs) and 2021/22 (1,068 fte jobs). This is expected due to the reduction in the total number of active vessels in the fishery (direct employment) and productivity improvements across all related industries. (Figure 5-11).

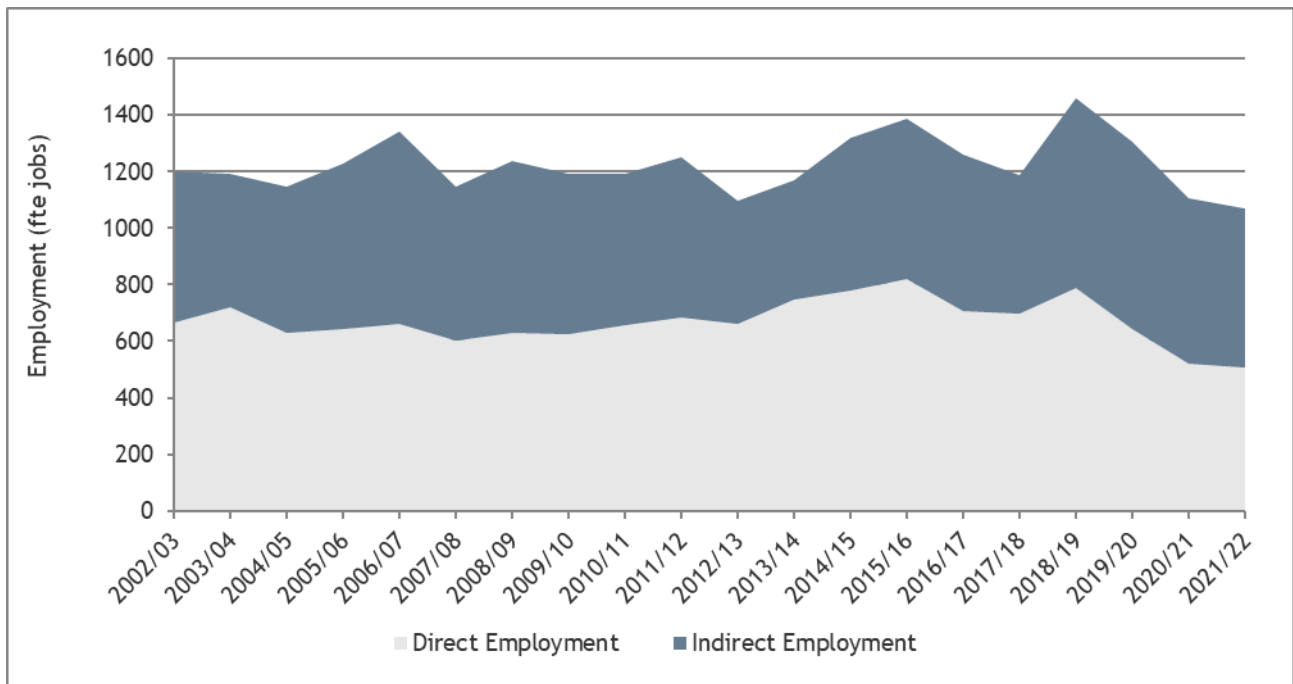
Figure 5-10 Total gross state product, output and household income contribution of the SA SZRL Fishery on the SA economy, 2002/03 to 2021/22 ^a



^a Estimates of output, GSP and household income are expressed in real 2021/22 terms.

Source: Table 3-11 and BDO EconSearch (2022a)

Figure 5-11 Total direct and indirect employment contribution of the SA SZRL Fishery on the SA economy, 2002/03 to 2021/22



Source: Table 3-12 and BDO EconSearch (2022a)

5.6. Net Economic Return

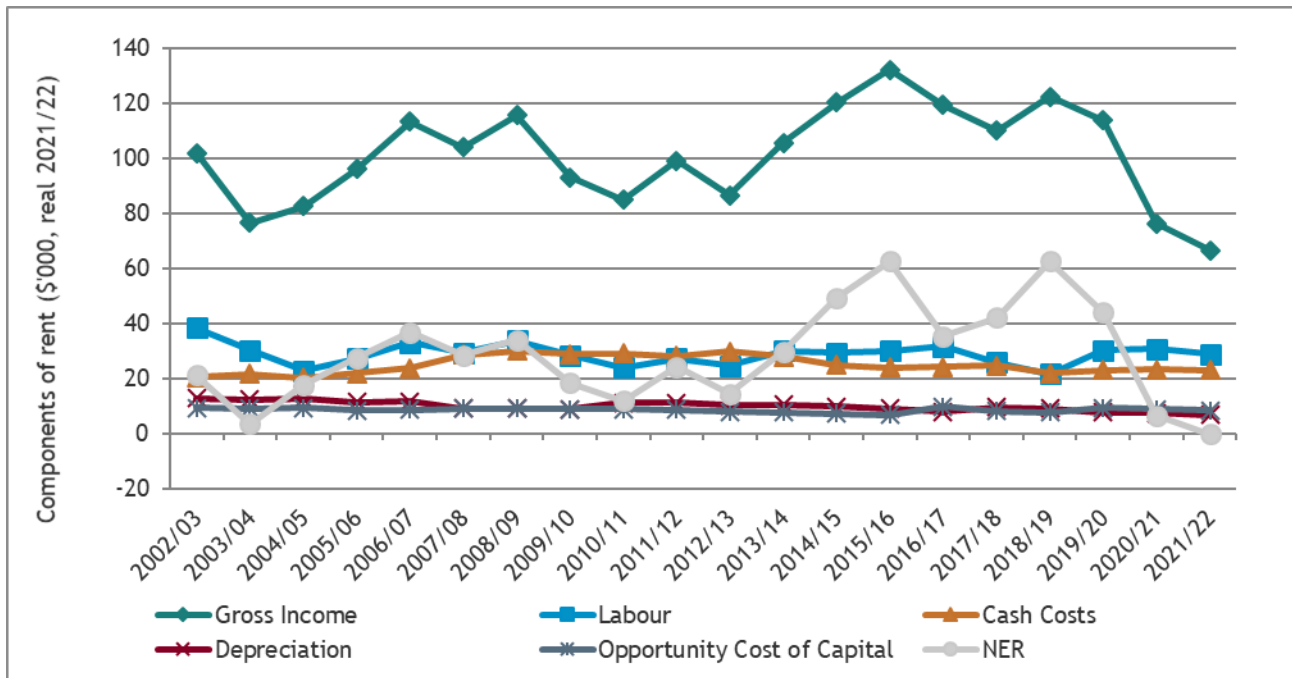
Net economic return (NER) is the return from a fishery after all costs have been met. It is equal to fishing revenue less fishing costs (cost of labour, capital including depreciation, materials and an allowance for “normal” profit). NER is maximised when economic efficiency is maximised. In this case the natural resource is the SZRL Fishery and the good produced is the landed Rock Lobster.

Estimates of the NER generated in the SZRL Fishery are summarised in Figure 5-12 for the period 2002/03 to 2021/22. In 2002/03, the estimated real NER in the fishery was \$21 million which, despite fluctuations and a general increase in between years, decreased to -\$370,000 in 2021/22, the lowest level and the first time NER has been negative over the 20 year period. This decrease occurred principally in 2021/22 through a decrease in gross income associated with trade disputes between China and Australia leading to an unofficial ban on Rock Lobster exports.

NER expressed as a percentage of GVP is a useful indicator for analysing a fishery over time and for comparing different fisheries. NER expressed as a percentage of GVP has decreased overall and was estimated to be -1 per cent in 2021/22. This was significantly lower than the average between 2002/03 and 2021/22 (26 per cent) and was the lowest value for the 20 year period (Figure 5-13).

NER represents a return to the value of licences in the fishery. The aggregate value of licences in the SZRL Fishery and the return to capital value of the fishery are illustrated in Figure 5-14. The return to the aggregate value of licences in the fishery fluctuated between 2002/03 and 2021/22 but has decreased overall.

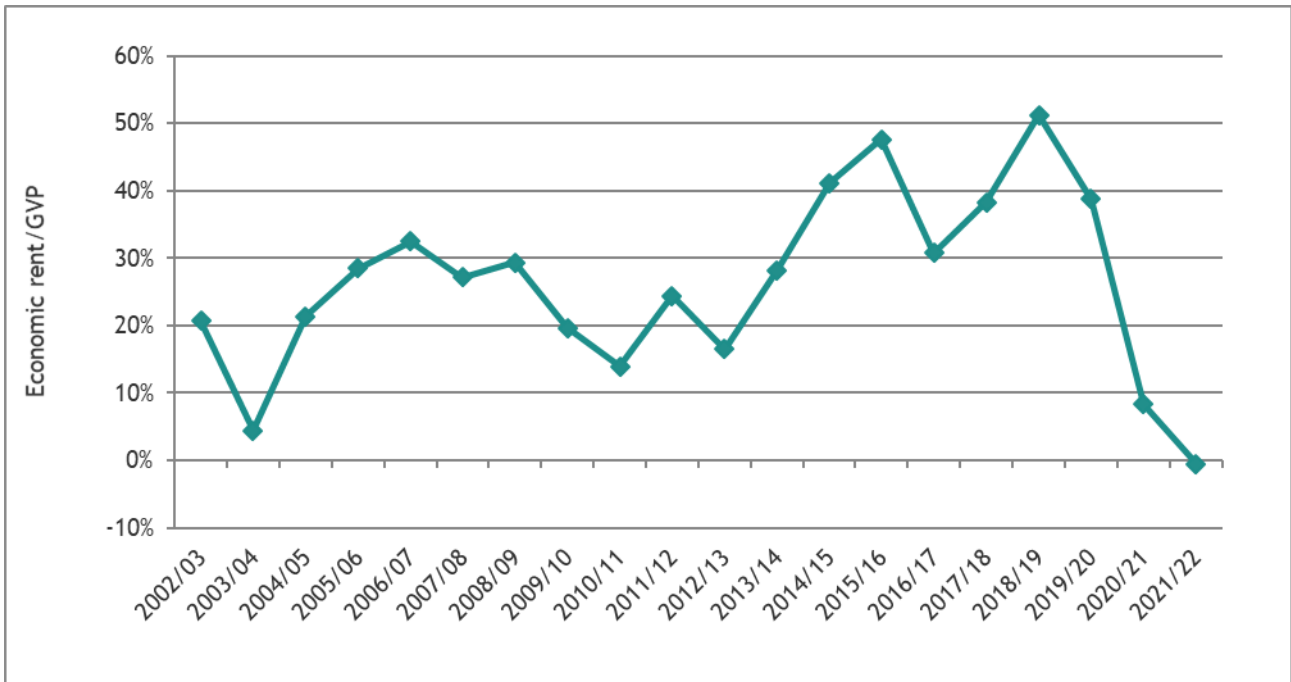
Figure 5-12 NER in the SA SZRL Fishery, 2002/03 to 2021/22 ^a



^a All indicators in real 2021/22 terms.

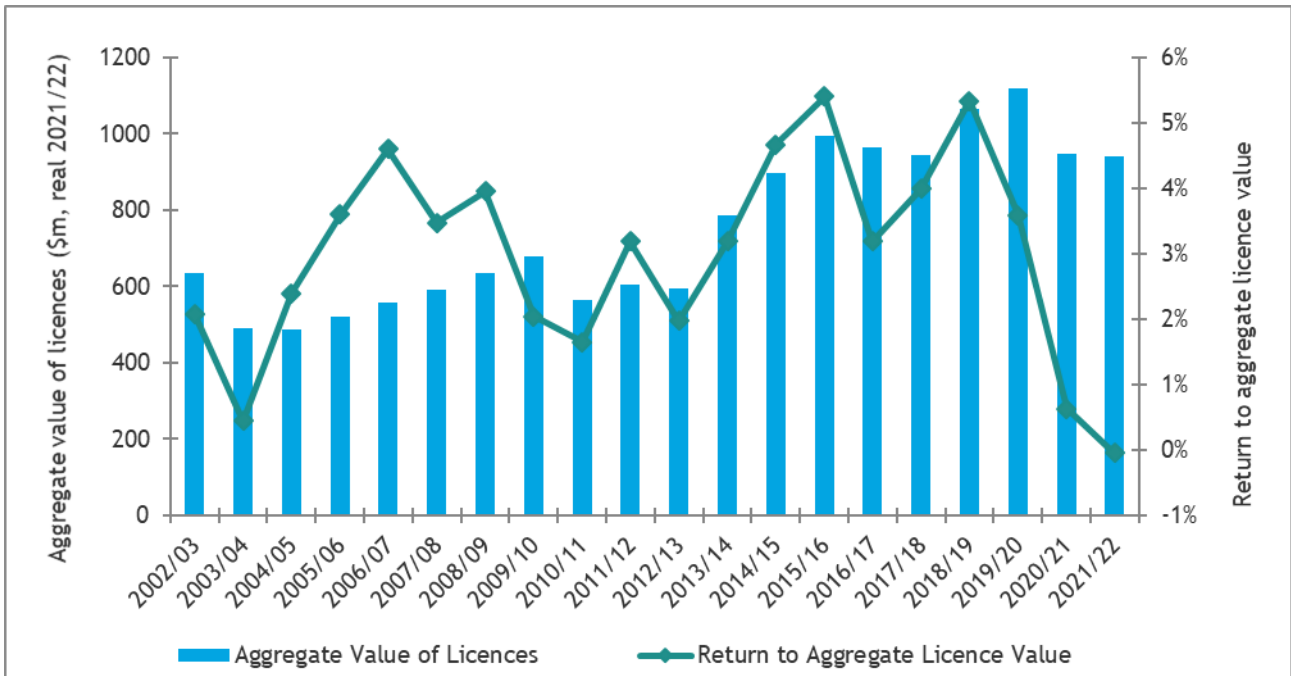
Source: Table 4-1

Figure 5-13 NER as a proportion of GDP in the SA SZRL Fishery, 2002/03 to 2021/22



Source: Table 3-3 and Table 4-1

Figure 5-14 Aggregate value of licences and return to aggregate licence value in the SA SZRL Fishery, 2002/03 to 2021/22 ^a



^a The value of licences represents licence holders' estimates of the value of their fishing licence derived from survey responses. Estimates were based on different survey samples and techniques. Some of the difference between years is, therefore, attributable to sampling variability.

Source: Table 3-6, Table 4-1 and Appendix 4

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- ABS 2022b, *Wage Price Index, Australia*, Cat. No. 6345.0.
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Disclaimer

The assignment is a consulting engagement as outlined in the ‘Framework for Assurance Engagements’, issued by the Auditing and Assurances Standards Board, Section 17. Consulting engagements employ an assurance practitioner’s technical skills, education, observations, experiences and knowledge of the consulting process. The consulting process is an analytical process that typically involves some combination of activities relating to: objective-setting, fact-finding, definition of problems or opportunities, evaluation of alternatives, development of recommendations including actions, communication of results, and sometimes implementation and follow-up.

The nature and scope of work has been determined by agreement between BDO and the Client. This consulting engagement does not meet the definition of an assurance engagement as defined in the ‘Framework for Assurance Engagements’, issued by the Auditing and Assurances Standards Board, Section 10.

Except as otherwise noted in this report, we have not performed any testing on the information provided to confirm its completeness and accuracy. Accordingly, we do not express such an audit opinion and readers of the report should draw their own conclusions from the results of the review, based on the scope, agreed-upon procedures carried out and findings.

APPENDIX 1 Economic Contribution of the SA Southern Zone Rock Lobster Fishery, 2020/21

Appendix Table 1-1 The economic contribution of the SA Southern Zone Rock Lobster fishing industry on the South Australian economy, 2020/21

Sector	Output		Employment ^a		Household Income		Contribution to GSP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing ^b	71.7	32%	327	30%	28.0	35%	51.1	37%
Processing	3.9	2%	11	1%	0.6	1%	1.3	1%
Transport	7.9	3%	38	3%	2.8	3%	3.3	2%
Retail	12.9	6%	103	9%	5.7	7%	7.6	6%
Food services	3.6	2%	36	3%	1.4	2%	2.0	1%
Capital expenditure ^c	1.5	1%	6	1%	0.4	1%	0.6	0%
Total Direct ^d	101.5	45%	521	47%	38.9	49%	65.9	48%
Flow-on effects								
Trade	15.4	7%	101	9%	6.2	8%	8.9	7%
Manufacturing	14.1	6%	40	4%	2.7	3%	4.2	3%
Business Services	19.6	9%	125	11%	9.4	12%	10.7	8%
Transport	8.0	4%	32	3%	2.3	3%	3.5	3%
Other Sectors	68.3	30%	285	26%	20.5	26%	44.1	32%
Total Flow-on ^d	125.3	55%	584	53%	41.2	51%	71.5	52%
Total ^d	226.8	100%	1,105	100%	80.1	100%	137.4	100%
Total/Direct	2.2	-	2.1	-	2.1	-	2.1	-
Total/Tonne	\$172,300	-	0.8	-	\$60,800	-	\$104,400	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 319 full-time and 99 part-time jobs, that is, 395 jobs in aggregate, which was estimated to be equal to 327 fte jobs.

^b The direct fishing contribution includes Octopus caught by SZRL Fishery licences holders (\$0.4m).

^c Capital expenditure includes fishing related expenditure (boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment) and processing relating expenditure (sheds, buildings and freezers).

^d Totals may not sum due to rounding.

Source: BDO EconSearch analysis

Appendix Table 1-2 The economic contribution of the SA SZRL fishing industry in the Limestone Coast Region, 2020/21

Sector	Output		Employment ^a		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing ^b	71.7	52%	327	50%	28.0	57%	51.1	58%
Processing	3.9	3%	10	2%	0.5	1%	1.3	1%
Transport	1.6	1%	8	1%	0.6	1%	0.7	1%
Retail	2.1	2%	17	3%	0.9	2%	1.2	1%
Food services	0.4	0%	4	1%	0.1	0%	0.2	0%
Capital expenditure ^c	0.3	0%	1	0%	0.1	0%	0.1	0%
Total Direct ^d	79.9	58%	367	56%	30.2	61%	54.6	62%
Flow-on effects								
Trade	9.0	7%	61	9%	3.7	8%	5.2	6%
Manufacturing	3.7	3%	13	2%	0.8	2%	1.1	1%
Business Services	6.9	5%	47	7%	3.3	7%	3.8	4%
Transport	3.4	2%	15	2%	1.1	2%	1.5	2%
Other Sectors	35.2	26%	148	23%	10.0	20%	21.5	25%
Total Flow-on ^d	58.2	42%	284	44%	18.9	39%	33.1	38%
Total ^d	138.1	100%	651	100%	49.1	100%	87.7	100%
Total/Direct	1.7	-	1.8	-	1.6	-	1.6	-
Total/Tonne	\$104,900	-	0.5	-	\$37,300	-	\$66,600	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 319 full-time and 99 part-time jobs, that is, 395 jobs in aggregate, which was estimated to be equal to 327 fte jobs.

^b The direct fishing contribution includes Octopus caught by SZRL Fishery licences holders (\$0.4m).

^c Capital expenditure includes fishing related expenditure (boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment) and processing relating expenditure (sheds, buildings and freezers).

^d Totals may not sum due to rounding.

Source: BDO EconSearch analysis

APPENDIX 2 Rock Lobster Exports from SA

Appendix Table 2-1 Rock Lobster exports from South Australia, quantity (kg) by category, 2002/03 to 2011/12

Category	Year									
	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Whole Rock Lobster- live, fresh or chilled	1,763,339	1,877,960	1,828,341	1,743,730	1,937,308	2,061,812	1,589,478	1,374,720	851,138	462,279
Rock lobster tails - frozen	18,879	3,264	5,044	9,592	6,734	12,506	4,129	2,709	4,007	3,666
Other	379,217	76,738	10,732	6,247	9,965	2,850	2,215	2,189	1,410	355,833
Total	2,161,435	1,957,962	1,844,117	1,759,569	1,954,007	2,077,168	1,595,822	1,379,618	856,555	821,778

Source: Australian Bureau of Statistics (by request)

Appendix Table 2-2 Rock Lobster exports from South Australia, quantity (kg) by category, 2012/13 to 2021/22

Category	Year									
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Whole Rock Lobster- live, fresh or chilled	840,809	795,273	607,737	349,340	738,377	594,454	745,039	630,318	504,375	594,988
Rock lobster tails - frozen	2,731	1,453	1,387	3,598	1,457	798	400	232	63	24
Other	106	957	0	11,417	941	8,883	3,004	1,468	308	6,893
Total	843,646	797,683	609,124	364,355	740,775	604,135	748,443	632,018	504,746	601,905

Source: Australian Bureau of Statistics (by request)

Appendix Table 2-3 Rock Lobster exports from South Australia, value (\$'000 fob) by category, 2002/03 to 2011/12

Category	Year									
	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Whole Rock Lobster- live, fresh or chilled	74.2	66.4	67.4	76.6	95.6	93.8	113.3	91.6	56.1	33.1
Rock lobster tails - frozen	1.5	0.2	0.3	0.8	0.5	0.7	0.4	0.2	0.4	0.3
Other	15.8	2.7	0.6	0.3	0.5	0.2	0.2	0.1	0.0	26.8
Total	91.5	69.3	68.3	77.7	96.7	94.7	113.8	92.0	56.5	60.2

Source: Australian Bureau of Statistics (by request)

Appendix Table 2-4 Rock Lobster exports from South Australia, value (\$'000 fob) by category, 2012/13 to 2021/22

Category	Year									
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Whole Rock Lobster- live, fresh or chilled	58.5	66.8	57.9	34.8	67.9	56.4	77.1	63.8	40.4	38.6
Rock lobster tails - frozen	0.3	0.2	0.2	0.5	0.2	0.1	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	1.1	0.1	0.6	0.2	0.0	0.0	0.4
Total	58.8	67.0	58.1	36.3	68.1	57.1	77.4	63.9	40.4	39.1

Source: Australian Bureau of Statistics (by request)

Appendix Table 2-5 Rock Lobster exports from South Australia, quantity (kg) by country of destination, 2002/03 to 2011/12

Country of Destination	Year									
	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
China	124,844	55,805	292,265	70,230	35,193	56,250	2,946	113	199,839	44,565
Hong Kong	1,833,031	1,732,694	1,387,463	1,574,584	1,832,744	1,932,782	1,543,665	1,348,669	631,809	617,644
Japan	89,617	96,529	82,453	74,861	54,075	55,550	28,255	14,976	4,471	3,061
Malaysia	8,244	10,041	12,229	4,016	5,389	5,865	4,696	7,623	9,977	4,367
Singapore	26,885	19,502	26,109	11,951	10,292	12,414	8,605	5,567	9,304	4,079
United States	22,023	5,979	9,111	7,358	5,117	2,441	4,123	1,614	590	1,175
Vietnam	0	13,843	13,184	58	0	76	0	0	0	112,062
Other	179,232	23,569	21,303	16,514	11,197	11,790	3,532	1,056	565	34,825
Total	2,283,876	1,957,962	1,844,117	1,759,572	1,954,007	2,077,168	1,595,822	1,379,618	856,555	821,778

Source: Australian Bureau of Statistics (by request)

Appendix Table 2-6 Rock Lobster exports from South Australia, quantity (kg) by country of destination, 2012/13 to 2021/22

Country of Destination	Year									
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
China	34,948	2,730	425	17,397	170,734	518,230	699,503	598,901	249,968	6,611
Hong Kong	395,757	71,095	47,969	39,206	77,637	42,456	44,743	29,623	216,431	347,585
Japan	1,980	1,405	1,200	675	1,320	285	140	0	0	0
Malaysia	3,720	3,574	2,014	1,657	1,970	762	152	242	535	2,460
Singapore	6,770	6,674	4,088	3,862	5,243	5,020	3,370	1,832	7,859	9,515
United States	731	0	12	0	0	0	0	0	754	127
Vietnam	399,175	712,067	553,312	298,379	482,445	35,463	38	1,400	24,954	194,433
Other	565	138	104	3,179	1,426	1,868	497	20	4,245	41,174
Total	843,646	797,683	609,124	364,355	740,775	604,084	748,443	632,018	504,746	601,905

Source: Australian Bureau of Statistics (by request)

Appendix Table 2-7 Rock Lobster exports from South Australia, value (\$'000 fob) by country of destination, 2002/03 to 2011/12

Country of Destination	Year									
	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
China	5.2	2.0	10.8	2.9	1.8	2.5	0.2	0.0	12.1	3.2
Hong Kong	75.9	60.4	50.7	68.9	90.0	87.9	110.0	89.7	42.7	45.3
Japan	4.5	4.0	3.4	3.6	3.1	2.8	2.3	1.2	0.4	0.3
Malaysia	0.4	0.3	0.5	0.2	0.3	0.3	0.3	0.5	0.6	0.3
Singapore	1.2	0.7	1.0	0.7	0.5	0.6	0.5	0.4	0.6	0.3
United States	1.7	0.3	0.5	0.5	0.4	0.1	0.2	0.1	0.0	0.1
Vietnam	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	8.1
Other	7.8	0.9	0.9	0.8	0.7	0.6	0.3	0.1	0.0	2.6
Total	96.7	69.3	68.3	77.7	96.7	94.7	113.8	92.0	56.5	60.2

Source: Australian Bureau of Statistics (by request)

Appendix Table 2-8 Rock Lobster exports from South Australia, value (\$'000 fob) by country of destination, 2012/13 to 2021/22

Country of Destination	Year									
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
China	2.3	0.2	0.0	1.7	15.2	48.9	72.1	60.4	25.5	0.4
Hong Kong	27.4	5.5	3.9	3.5	6.4	4.2	4.8	3.2	12.6	22.9
Japan	0.3	0.2	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0
Malaysia	0.2	0.3	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.2
Singapore	0.5	0.6	0.4	0.4	0.5	0.5	0.4	0.2	0.5	0.6
United States	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vietnam	28.0	60.2	53.5	30.2	45.6	3.1	0.0	0.0	1.5	12.3
Other	0.0	0.0	0.0	0.3	0.1	0.2	0.1	0.0	0.2	2.7
Total	58.8	67.0	58.1	36.3	68.1	57.1	77.4	63.9	40.4	39.1

Source: Australian Bureau of Statistics (by request)

APPENDIX 3 Summary Economic Indicators for SA Commercial Fisheries

Appendix Table 3-1 Commercial fisheries catch, South Australia, 2001/02 to 2020/21 (tonnes) ^a

Year	Abalone	GSV Prawns ^a	SG Prawns ^a	Sth'n Zone Rock Lobster ^a	Nth'n Zone Rock Lobster ^a	Blue Crabs	Lakes and Coorong ^b	Sardines	Marine Scalefish	Misc ^c	Total SA Fisheries ^d
2001/02	850	322	2,309	1,717	675	481	1,640	12,165	4,801	-	24,960
2002/03	890	232	1,508	1,766	595	515	1,979	21,741	4,243	-	33,469
2003/04	879	172	1,958	1,896	504	559	2,180	33,160	4,221	-	45,529
2004/05	902	213	1,960	1,897	446	584	2,277	56,952	3,857	-	69,089
2005/06	896	175	1,891	1,889	476	600	2,440	28,626	3,234	-	40,227
2006/07	883	209	2,024	1,895	492	617	2,443	30,355	2,855	-	41,773
2007/08	889	229	2,088	1,850	459	625	2,146	29,692	2,925	28	40,931
2008/09	837	273	1,915	1,407	403	604	2,023	27,850	2,998	28	38,338
2009/10	855	250	2,445	1,243	310	539	1,916	36,573	3,330	24	47,485
2010/11	815	178	2,115	1,244	313	591	1,681	33,220	3,068	24	43,249
2011/12	822	125	1,840	1,242	307	611	1,641	36,962	3,208	25	46,783
2012/13	875	0	1,881	1,234	325	511	1,811	35,065	2,603	28	44,333
2013/14	661	0	1,805	1,247	331	571	1,852	33,197	2,302	22	41,988
2014/15	744	249	1,848	1,238	321	576	1,598	36,020	2,582	22	45,198
2015/16	625	218	2,357	1,244	347	625	1,646	41,103	2,550	21	50,736
2016/17	743	225	2,205	1,238	320	627	1,847	39,745	2,519	22	49,491
2017/18	700	237	2,197	1,246	308	603	1,873	43,293	2,303	22	52,782
2018/19	658	212	2,121	1,245	294	616	1,861	40,041	2,099	22	49,169
2019/20	509	133	1,743	1,203	226	620	1,978	39,889	2,130	17	48,448
2020/21	493	110	1,837	1,275	251	592	1,926	38,024	1,689	18	46,215

^a Excludes retained by-catch of Octopus and Southern Calamari.

^b The River fishery was closed from July 2003. There are 6 River fishery licences with access to non-native species and their production is included in this table.

^c Prior to 2007/08 catch from the Miscellaneous Fishery was included in the Marine Scalefish Fishery.

^d Excludes retained by-catch of Octopus and Southern Calamari (49t of Octopus, 4t of Bugs and 45t of Southern Calamari in 2020/21) from the Rock Lobster and Prawn Fisheries. Excludes catch from Charter Boat Fishery, aquaculture and south east non-trawl and deep water trawl Commonwealth Fisheries.

Source: BDO EconSearch (2022b)

Appendix Table 3-2 Commercial fisheries gross value of production, South Australia, 2001/02 to 2020/21 (\$m)

Year	Abalone	GSV Prawns ^a	SG Prawns ^a	Sth'n Zone Rock Lobster ^a	Nth'n Zone Rock Lobster ^a	Blue Crabs	Lakes and Coorong ^b	Sardines	Marine Scalefish	Misc ^c	Charter Boat	Total SA Fisheries ^d
2001/02	52	9	60	99	39	4	7	13	19	-	-	302
2002/03	52	6	40	92	27	5	6	26	21	-	-	276
2003/04	44	4	56	69	17	5	8	32	23	-	-	258
2004/05	46	5	44	75	16	5	8	39	21	-	-	258
2005/06	45	4	45	87	20	7	8	21	17	-	6	260
2006/07	41	4	51	103	23	7	9	24	19	-	6	288
2007/08	39	4	40	94	20	7	9	20	20	1	5	259
2008/09	40	4	36	105	24	6	10	22	21	1	5	275
2009/10	33	3	33	84	18	5	7	27	23	1	6	241
2010/11	32	2	35	77	16	5	8	22	22	1	5	226
2011/12	33	2	28	90	19	6	9	23	23	1	6	240
2012/13	33	0	30	79	17	6	10	23	24	1	6	230
2013/14	24	0	30	96	21	6	10	21	22	1	5	236
2014/15	27	4	31	108	24	6	8	28	24	1	4	265
2015/16	23	4	41	119	26	8	9	27	22	2	4	286
2016/17	29	5	41	104	21	8	10	25	23	2	4	270
2017/18	28	5	44	100	25	8	12	27	23	2	3	276
2018/19	29	4	41	111	26	9	13	26	21	2	3	284
2019/20	22	2	23	104	18	9	13	27	20	1	2	240
2020/21	18	2	36	71	12	8	14	24	19	1	3	209

^a Excludes retained by-catch of Octopus and Southern Calamari.

^b The River fishery was closed from July 2003. There are 6 River fishery licences with access to non-native species and their production is included in this table.

^c Prior to 2007/08 catch from the Miscellaneous Fishery was included in the Marine Scalefish Fishery.

^d Excludes retained by-catch of Octopus, Southern Calamari and bugs (\$433,000 of Octopus, \$791,000 of Southern Calamari and \$66,000 of Bugs in 2020/21) from the Rock Lobster and Prawn Fisheries. Excludes catch of aquaculture and south east non-trawl, tuna, deep water trawl Commonwealth Fisheries. All values are expressed in real 2020/21 dollars.

Source: BDO EconSearch (2022b)

Appendix Table 3-3 Cost of management in South Australian commercial fisheries, 2020/21

	Licence Fees	GVP	Fees/ GVP	Catch ^a	Fees/ Catch	Licence Holders	Fees/ Licence
	(\$'000)	(\$'000)	(%)	(t)	(\$/kg)	(no.)	(\$/licence)
Abalone	2,431	18,337	13.3%	493	\$4.93	34	\$71,505
Charter Boats ^b	180	2,907	6.2%	12,077	\$14.87	82	\$2,191
GSV Prawns	410	2,093	19.6%	110	\$3.73	10	\$40,991
SG Prawns ^c	1,055	35,653	3.0%	1,837	\$0.57	39	\$27,049
Sth'n Zone Rock Lobster	3,444	71,299	4.8%	1,275	\$2.70	180	\$19,131
Nth'n Zone Rock Lobster	1,601	11,643	13.8%	251	\$6.38	63	\$25,414
Blue Crabs	320	8,410	3.8%	592	\$0.54	9	\$35,565
Lakes and Coorong	704	13,721	5.1%	1,926	\$0.37	36	\$19,562
Marine Scalefish ^d	1,973	19,103	10.3%	1,689	\$1.17	305	\$6,469
Miscellaneous	119	1,484	8.0%	18	\$6.60	15	\$7,916
Sardines	893	23,955	3.7%	38,024	\$0.02	14	\$63,769
Total SA	13,129	208,604	6.3%	46,215	\$0.28	787	\$16,683

^a Total catch for the Charter Boat Fishery is the total number of clients rather than total volume of catch and has therefore been excluded from the total catch for all SA commercial fisheries.

^b Management costs for the Charter Boat Fishery are reported per client rather than per kg of catch.

^c Excludes West Coast Prawn Fishery.

^d Licence fees include access/entitlement fees paid by rock lobster and Lakes and Coorong licence holders. Number of licence holders and average fee per licence holder relates only to Marine Scalefish licence holders and excludes access/entitlement holders from other fisheries.

Source: BDO EconSearch (2022b)

Appendix Table 3-4 Financial performance in South Australian commercial fisheries, 2020/21, (average per boat) ^b

	Abalone	Charter Boats	GSV Prawns	SG Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs ^a	Marine Scalefish	Sardine	Lakes and Coorong
(1) Total Boat Gross Income	585,788	95,682	418,600	858,836	440,222	250,721	8,409,508	122,224	1,726,433	517,480
Variable Costs										
Fuel	15,214	16,015	60,732	80,931	24,940	24,264	530,977	13,025	108,435	16,878
Repairs &	24,130	17,007	41,471	97,439	35,796	17,104	438,956	8,151	130,409	12,430
Bait/Ice	527	3,525	0	5,001	14,584	13,170	134,934	2,411	1,591	1,542
Provisions	3,806	854	2,477	4,605	1,067	6,159	29,862	980	1,385	610
Labour - paid	185,740	6,185	212,626	361,846	158,999	113,626	2,462,702	12,639	432,268	66,979
(2) Labour - unpaid	1,342	13,126	9,867	2,001	7,280	15,902	9,604	18,510	2,801	14,746
Other	3,593	2,967	37,985	367	1,312	3,581	1,781	1,568	427	1,123
(3) Total Variable Costs	234,353	59,679	365,158	552,190	243,978	193,805	3,608,815	57,283	677,316	114,309
Fixed Costs										
Licence Fee	72,620	4,185	81,983	27,634	23,122	26,786	343,300	5,769	68,666	16,136
Insurance	8,283	4,179	9,796	20,831	8,734	7,461	198,233	3,036	39,123	5,302
(4) Interest	18,080	1,141	4,154	38,018	12,378	3,411	388,980	4,239	86,292	4,012
(5) Labour - unpaid	13,418	17,493	23,796	3,419	10,693	3,971	127,993	5,041	24,916	9,522
(6) Leasing	0	0	0	5,365	4,452	42,432	320,184	0	0	7,111
Legal & Accounting	9,191	2,030	6,579	4,872	6,764	4,206	26,823	2,292	5,872	4,537
Telephone etc.	2,451	1,296	1,805	2,995	2,518	1,032	5,696	1,266	1,098	1,911
Slipping & Mooring	1,271	2,193	20,061	21,804	6,383	5,825	70,083	1,629	7,704	276
Travel	5,482	659	0	570	1,363	1,598	3,561	594	883	927
Office & Admin	6,229	7,027	3,869	30,556	6,869	11,429	144,778	7,369	17,988	8,919
(7) Total Fixed Costs	137,025	40,203	152,042	156,062	83,275	108,151	1,629,632	31,234	252,542	58,654
(8) Total Boat Cash Costs (3 + 7)	371,377	99,882	517,201	708,252	327,254	301,957	5,238,447	88,517	929,858	172,962
Boat Gross Margin (1 - 3)	351,435	36,003	53,442	306,646	196,243	56,916	4,800,692	64,941	1,049,117	403,171
(9) Total Unpaid Labour (2 + 5)	14,760	30,618	33,662	5,420	17,973	19,872	137,597	23,550	27,717	24,268
Gross Operating Surplus (1- 8+ 9)	229,170	26,418	-64,938	156,004	130,942	-31,363	3,308,657	57,258	824,292	368,786
(10) Boat Cash Income (1 - 8)	214,411	-4,200	-98,601	150,584	112,968	-51,235	3,171,061	33,707	796,575	344,518
(11) Depreciation	53,300	22,687	73,852	110,310	41,973	47,587	740,508	19,848	328,118	54,278
(12) Boat Business Profit (10 - 11)	161,111	-26,887	-172,453	40,274	70,995	-98,823	2,430,552	13,859	468,457	290,239
(13) Profit at Full Equity (12 + 4 + 6)	179,191	-25,746	-168,299	83,656	87,825	-52,980	3,139,717	18,097	554,748	301,363
Boat Capital										
(14) Fishing Gear & Licence Value	369,703	273,514	1,136,412	1,435,546	512,056	514,497	8,036,811	150,058	3,132,734	432,446
(15) Total Boat Capital	6,326,294	7,750	2,000,000	4,198,095	5,257,050	2,296,864	47,285,237	226,097	6,076,511	1,469,734
(15) Total Boat Capital	6,695,997	281,264	3,136,412	5,633,641	5,769,107	2,811,360	55,322,048	376,155	9,209,245	1,902,180
Rate of Return on										
Fishing Gear & Equip (13 / 14 * 100)	48.5%	-9.4%	-14.8%	6%	17%	-10.3%	39.1%	12.1%	17.7%	69.7%
Rate of Return on										
Total Boat Capital (13 / 15 * 100)	2.7%	-9.2%	-5.4%	1.5%	1.5%	-1.9%	5.7%	4.8%	6.0%	15.8%

^a Estimates of financial performance for the blue crab fishery have been presented on a whole of fishery basis.

^b Excludes aquaculture and Commonwealth fisheries including; the Southern Eastern Scalefish and Shark fishery, Southern Bluefin Tuna fishery, Great Australian Bight fishery, Western Skipjack fishery, the Western Tuna and Billfish fishery.

Source: BDO EconSearch (2022b)

Appendix Table 3-5 Costs as a percentage of total cash costs in South Australian commercial fisheries, 2020/21 ^a

	Abalone	Charter Boats	Gulf St Vincent Prawns	Spencer Gulf Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs	Marine Scalefish	Sardines	Lakes and Coorong
Variable Costs										
Fuel	4%	16%	12%	11%	8%	8%	10%	15%	12%	10%
R&M	6%	17%	8%	14%	11%	6%	8%	9%	14%	7%
Bait/Ice	0%	4%	0%	1%	4%	4%	3%	3%	0%	1%
Provisions	1%	1%	0%	1%	0%	2%	1%	1%	0%	0%
Labour - paid	50%	6%	41%	51%	49%	38%	47%	14%	46%	39%
Labour - unpaid	0%	13%	2%	0%	2%	5%	0%	21%	0%	9%
Other	1%	3%	7%	0%	0%	1%	0%	2%	0%	1%
Fixed Costs										
Licence Fee	20%	4%	16%	4%	7%	9%	7%	7%	7%	9%
Insurance	2%	4%	2%	3%	3%	2%	4%	3%	4%	3%
Interest	5%	1%	1%	5%	4%	1%	7%	5%	9%	2%
Labour - unpaid	4%	18%	5%	0%	3%	1%	2%	6%	3%	6%
Leasing	0%	2%	0%	1%	1%	14%	6%	0%	0%	4%
Legal & Accounting	2%	1%	1%	1%	2%	1%	1%	3%	1%	3%
Telephone etc.	1%	2%	0%	0%	1%	0%	0%	1%	0%	1%
Slipping & Mooring	0%	1%	4%	3%	2%	2%	1%	2%	1%	0%
Travel	1%	7%	0%	0%	0%	1%	0%	1%	0%	1%
Office & Admin	2%	40%	1%	4%	2%	4%	3%	8%	2%	5%
Total Variable Costs	63%	60%	71%	78%	75%	64%	69%	65%	73%	66%
Total Fixed Costs	37%	40%	29%	22%	25%	36%	31%	35%	27%	34%
Total Cash Costs	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

^a Excludes aquaculture and Commonwealth fisheries including; the Southern Eastern Scalefish and Shark fishery, Southern Bluefin Tuna fishery, Great Australian Bight fishery, Western Skipjack fishery, the Western Tuna and Billfish fishery.

Source: Derived from BDO EconSearch (2022b)

Appendix Table 3-6 Economic contributions of South Australian commercial fisheries, 2020/21 ^{a,b}

	Abalone	Charter Boats	Gulf St Vincent Prawn	SG Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs	Marine Scalefish	Sardines	Lakes and Coorong	All Fisheries
Output (\$m)											
Direct											
Fishing	18.3	2.9	2.1	35.7	71.7	11.7	8.4	19.1	24.0	13.7	207.6
Downstream	15.2	5.7	2.2	35.9	29.8	6.1	7.5	8.7	2.2	6.6	119.9
All other sectors	56.9	14.4	7.3	91.4	125.3	29.5	18.4	57.3	22.1	19.5	442.3
Total	90.5	23.0	11.6	163.0	226.8	47.3	34.4	85.1	48.3	39.8	769.8
Total/Direct	2.7	2.7	2.7	2.3	2.2	2.7	2.2	3.1	1.8	2.0	2.4
Total/Tonne (\$)	\$183,500	\$1,900	\$105,600	\$88,700	\$172,300	\$182,500	\$58,000	\$50,300	\$1,200	\$24,900	\$16,000
Contribution to GSP (\$m)											
Direct											
Fishing	13.9	1.2	0.9	24.3	51.1	3.8	6.5	7.9	18.7	11.3	139.6
Downstream	13.8	2.8	1.3	20.6	14.8	3.0	3.8	4.2	1.1	3.2	68.6
All other sectors	18.1	8.1	4.1	50.9	71.5	16.8	10.4	32.8	12.5	11.1	236.4
Total	45.9	12.1	6.3	95.9	137.4	23.7	20.8	44.8	32.3	25.5	444.6
Total/Direct	1.7	3.1	2.9	2.1	2.1	3.5	2.0	3.7	1.6	11.1	2.1
Total/Tonne (\$)	\$93,000	\$1,000	\$56,900	\$52,100	\$104,400	\$91,300	\$35,000	\$26,500	\$800	\$26	\$9,200
Employment (fte jobs)											
Direct											
Fishing	51	32	18	116	327	89	29	211	82	109	1,064
Downstream	125	29	19	305	194	39	58	55	13	40	876
All other sectors	148	68	33	413	584	139	82	274	104	88	1,934
Total	323	128	70	834	1,105	268	169	540	199	238	3,874
Total/Direct	1.8	2.1	1.9	2.0	2.1	2.1	2.0	2.0	2.1	1.6	2.0
Total/Tonne	0.7	0.0	0.6	0.5	0.8	1.0	0.3	0.3	0.0	0.1	0.1
Household Income (\$m)											
Direct											
Fishing	6.8	0.6	1.2	14.3	28.0	6.2	2.6	8.7	6.4	3.3	78.2
Downstream	6.6	1.6	0.9	15.1	11.0	2.2	2.7	3.0	0.8	2.3	46.1
All other sectors	10.4	4.9	2.4	28.5	41.2	9.8	5.9	19.8	7.2	6.5	136.4
Total	23.8	7.1	4.5	57.9	80.1	18.3	11.2	31.5	14.3	12.0	260.7
Total/Direct	1.8	3.2	2.1	2.0	2.1	2.2	2.1	2.7	2.0	2.2	2.1
Total/Tonne (\$)	\$48,200	\$500	\$41,100	\$31,500	\$60,800	\$70,400	\$18,800	\$18,600	\$300	\$7,500	\$5,400

^a Excludes aquaculture and Commonwealth fisheries including; the Southern Eastern Scalefish and Shark fishery, Southern Bluefin Tuna fishery, Great Australian Bight fishery, Western Skipjack fishery, the Western Tuna and Billfish fishery.

^b Downstream activities include net value of processing, transport services and retail/food services trade.

Source: BDO EconSearch (2022b)

Appendix Table 3-7 **NER in South Australian commercial fisheries ^a, 2020/21 (\$m)**

	Abalone	GSV Prawns	SGWC Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs	Marine Scalefish	Sardines	Lakes and Coorong	All Fisheries ^a
Gross Income	18.3	2.1	35.7	71.7	11.7	8.4	19.1	24.0	13.7	204.6
Less Labour	6.3	1.2	15.0	28.8	6.2	2.6	5.7	6.4	2.4	74.6
Less Materials & Services	4.8	1.3	12.1	21.7	5.7	1.9	9.0	5.3	2.1	64.0
Less Depreciation	1.7	0.4	4.5	6.8	2.2	0.7	3.1	4.6	1.4	25.4
Less Opportunity Cost of Capital (@10%)	1.2	0.6	5.8	8.3	2.4	0.8	2.3	4.3	1.1	27.0
NER	4	-1	-2	6	-5	2	-1	3	7	14
NER/GVP	24%	-64%	-5%	8%	-42%	28%	-5%	14%	49%	5%

^a Excludes Charter Boat Fishery, aquaculture and Commonwealth fisheries including; the Southern Eastern Scalefish and Shark fishery, Southern Bluefin Tuna fishery, Great Australian Bight fishery, Western Skipjack fishery, the Western Tuna and Billfish fishery.

Source: BDO EconSearch (2022b)

APPENDIX 4 Financial Performance, 2002/03 - 2018/19

Appendix Table 4-1 Financial performance in the SA SZRL Fishery, 2002/03 to 2004/05 (average per boat) ^a

	2002/03		2003/04		2004/05	
	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b
(1) Total Boat Gross Income	\$354,481		\$354,481		\$314,212	
Variable Costs						
Fuel	\$13,016	6%	\$13,016	6%	\$18,161	10%
Repairs & Maintenance ^c	\$10,912	5%	\$10,912	5%	\$16,624	9%
Bait/Ice	\$5,804	3%	\$5,804	3%	\$8,906	5%
Provisions	\$253	0%	\$253	0%	\$299	0%
Labour - paid	\$105,747	48%	\$105,747	48%	\$59,044	32%
(2) Labour - unpaid ^d	\$22,562	10%	\$22,562	10%	\$20,862	11%
Other	\$4,780	2%	\$4,780	2%	\$688	0%
(3) Total Variable Costs	\$163,074	74%	\$163,074	74%	\$124,583	67%
Fixed Costs						
Licence Fee	\$12,884	6%	\$12,884	6%	\$15,762	8%
Insurance	\$4,352	2%	\$4,352	2%	\$6,176	3%
(4) Interest	\$15,993	7%	\$15,993	7%	\$21,683	12%
(5) Labour - unpaid ^d	\$5,130	2%	\$5,130	2%	\$7,084	4%
(6) Leasing	\$11,126	5%	\$11,126	5%	\$1,311	1%
Legal & Accounting	\$2,600	1%	\$2,600	1%	\$2,480	1%
Telephone etc.	\$1,311	1%	\$1,311	1%	\$1,593	1%
Slipping & Mooring	\$1,482	1%	\$1,482	1%	\$1,586	1%
Travel	\$696	0%	\$696	0%	\$788	0%
Office & Admin	\$1,819	1%	\$1,819	1%	\$2,559	1%
(7) Total Fixed Costs	\$57,393	26%	\$57,393	26%	\$61,023	33%
(8) Total Boat Cash Costs (3+7)	\$220,466	100%	\$220,466	100%	\$185,606	100%
Boat Gross Margin (1-3)	\$191,408		\$191,408		\$189,629	
(9) Total Unpaid Labour (2+5)	\$27,692		\$27,692		\$27,946	
Gross Operating Surplus (1-8+9)	\$161,707		\$161,707		\$156,552	
(10) Boat Cash Income (1-8)	\$134,015		\$134,015		\$128,606	
(11) Depreciation	\$44,520		\$44,520		\$47,960	
(12) Boat Business Profit (10-11)	\$89,495		\$89,495		\$80,646	
(13) Profit at Full Equity (12+4+6)	\$116,614		\$116,614		\$103,641	
Boat Capital						
(14) Fishing Gear & Equip	\$321,797		\$321,797		\$351,807	
Licence Value	\$3,499,566		\$3,499,566		\$2,682,397	
(15) Total Boat Capital	\$3,821,363		\$3,821,363		\$3,034,204	
Rate of Return on Fishing Gear & Equip (13/14*100)	36.2%		36.2%		29.5%	
Rate of Return on Total Boat Capital (13/15*100)	3.1%		3.1%		3.4%	

^a Estimates of financial performance for the years 2002/03 and 2003/04 are based on the 2001 licence holder and estimates for 2004/05 are based on the 2006 licence holder survey. All figures are presented in nominal terms.

^b Total boat cash costs.

^c Repairs and maintenance costs have been classified as a variable cost although it is noted that some of these costs may be fixed (e.g. regulated maintenance).

^d Unpaid labour was divided between variable (time spent fishing and on repairs and maintenance) and fixed (management and administrative duties) based on survey responses.

Source: BDO EconSearch (2022a)

Appendix Table 4-2 Financial performance in the SA SZRL Fishery, 2005/06 to 2007/08 (average per boat) ^a

	2005/06		2006/07		2007/08	
	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b
(1) Total Boat Gross Income	\$379,715		\$453,340		\$486,656	
Variable Costs						
Fuel	\$21,559	10%	\$23,925	10%	\$39,453	13%
Repairs & Maintenance ^c	\$19,406	9%	\$21,616	9%	\$26,867	9%
Bait/Ice	\$10,418	5%	\$10,916	4%	\$18,767	6%
Provisions	\$349	0%	\$389	0%	\$695	0%
Labour - paid	\$74,041	34%	\$91,854	37%	\$108,100	36%
(2) Labour - unpaid ^d	\$26,161	12%	\$32,455	13%	\$22,085	7%
Other	\$721	0%	\$733	0%	\$693	0%
(3) Total Variable Costs	\$152,655	71%	\$181,887	73%	\$216,659	73%
Fixed Costs						
Licence Fee	\$15,832	7%	\$18,685	7%	\$19,316	7%
Insurance	\$6,472	3%	\$6,583	3%	\$6,492	2%
(4) Interest	\$21,951	10%	\$23,557	9%	\$26,090	9%
(5) Labour - unpaid ^d	\$7,351	3%	\$7,639	3%	\$7,500	3%
(6) Leasing	\$1,591	1%	\$1,904	1%	\$6,203	2%
Legal & Accounting	\$2,599	1%	\$2,643	1%	\$3,843	1%
Telephone etc.	\$1,669	1%	\$1,698	1%	\$1,773	1%
Slipping & Mooring	\$1,662	1%	\$1,690	1%	\$2,843	1%
Travel	\$826	0%	\$840	0%	\$2,152	1%
Office & Admin	\$2,681	1%	\$2,727	1%	\$3,992	1%
(7) Total Fixed Costs	\$62,634	29%	\$67,967	27%	\$80,203	27%
(8) Total Boat Cash Costs (3+7)	\$215,289	100%	\$249,853	100%	\$296,862	100%
Boat Gross Margin (1-3)	\$227,061		\$271,453		\$269,997	
(9) Total Unpaid Labour (2+5)	\$33,512		\$40,093		\$29,584	
Gross Operating Surplus (1-8+9)	\$197,938		\$243,579		\$219,378	
(10) Boat Cash Income (1-8)	\$164,426		\$203,486		\$189,794	
(11) Depreciation	\$45,089		\$46,094		\$42,367	
(12) Boat Business Profit (10-11)	\$119,338		\$157,392		\$147,427	
(13) Profit at Full Equity (12+4+6)	\$142,879		\$182,853		\$179,720	
Boat Capital						
(14) Fishing Gear & Equip	\$330,748		\$338,124		\$418,617	
Licence Value	\$2,873,997		\$3,079,283		\$3,272,079	
(15) Total Boat Capital	\$3,204,745		\$3,417,407		\$3,690,696	
Rate of Return on Fishing Gear & Equip (13/14*100)	43.2%		54.1%		42.9%	
Rate of Return on Total Boat Capital (13/15*100)	4.5%		5.4%		4.9%	

^a Estimates of financial performance for the years 2005/06 and 2006/07 are based on the 2006 licence holder survey. Estimates of financial performance for the year 2007/08 are based on the 2009 licence holder survey. All figures are presented in nominal terms.

^{b-d} See Appendix Table 4-1 footnotes.

Source: BDO EconSearch (2022a)

Appendix Table 4-3 Financial performance in the SA SZRL Fishery, 2008/09 to 2010/11 (average per boat) ^a

	2008/09		2009/10		2010/11	
	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b
(1) Total Boat Gross Income	\$548,604		\$454,455		\$418,004	
Variable Costs						
Fuel	\$45,082	14%	\$49,104	16%	\$36,489	12%
Repairs & Maintenance ^c	\$31,521	10%	\$35,165	11%	\$29,213	10%
Bait/Ice	\$14,759	5%	\$5,489	2%	\$19,263	6%
Provisions	\$815	0%	\$910	0%	\$667	0%
Labour - paid	\$126,655	39%	\$107,857	35%	\$95,951	32%
(2) Labour - unpaid ^d	\$25,876	8%	\$22,035	7%	\$18,562	6%
Other	\$704	0%	\$724	0%	\$7,814	3%
(3) Total Variable Costs	\$245,412	75%	\$221,283	72%	\$207,959	70%
Fixed Costs						
Licence Fee	\$18,548	6%	\$19,069	6%	\$21,247	7%
Insurance	\$6,596	2%	\$6,778	2%	\$6,961	2%
(4) Interest	\$24,772	8%	\$28,593	9%	\$37,051	12%
(5) Labour - unpaid ^d	\$7,795	2%	\$8,013	3%	\$3,644	1%
(6) Leasing	\$9,194	3%	\$8,621	3%	\$2,827	1%
Legal & Accounting	\$3,904	1%	\$4,012	1%	\$3,155	1%
Telephone etc.	\$1,802	1%	\$1,852	1%	\$2,151	1%
Slipping & Mooring	\$2,889	1%	\$2,969	1%	\$7,382	2%
Travel	\$2,187	1%	\$2,247	1%	\$1,190	0%
Office & Admin	\$4,056	1%	\$4,168	1%	\$5,082	2%
(7) Total Fixed Costs	\$81,744	25%	\$86,322	28%	\$90,690	30%
(8) Total Boat Cash Costs (3+7)	\$327,155	100%	\$307,604	100%	\$298,648	100%
Boat Gross Margin (1-3)	\$303,192		\$233,172		\$210,045	
(9) Total Unpaid Labour (2+5)	\$33,670		\$30,048		\$22,206	
Gross Operating Surplus (1-8+9)	\$255,118		\$176,898		\$141,561	
(10) Boat Cash Income (1-8)	\$221,448		\$146,850		\$119,355	
(11) Depreciation	\$42,852		\$43,419		\$54,663	
(12) Boat Business Profit (10-11)	\$178,596		\$103,431		\$64,692	
(13) Profit at Full Equity (12+4+6)	\$212,563		\$140,646		\$104,570	
Boat Capital						
(14) Fishing Gear & Equip	\$423,406		\$429,013		\$436,602	
Licence Value	\$3,505,799		\$3,756,213		\$3,114,524	
(15) Total Boat Capital	\$3,929,205		\$4,185,226		\$3,551,126	
Rate of Return on Fishing Gear & Equip (13/14*100)	50.2%		32.8%		24.0%	
Rate of Return on Total Boat Capital (13/15*100)	5.4%		3.4%		2.9%	

^a Estimates of financial performance for the years 2008/09 and 2009/10 are based on the 2008 licence holder survey and those estimate for 2010/11 are based on the 2012 licence holder survey. All figures are presented in nominal terms.

^{b-d} See Appendix Table 4-1 footnotes.

Source: BDO EconSearch (2022a)

Appendix Table 4-4 Financial performance in the SA SZRL Fishery, 2011/12 to 2013/14 (average per boat) ^a

	2011/12		2012/13		2013/14	
	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b
(1) Total Boat Gross Income	\$493,415		\$440,338		\$610,646	
Variable Costs						
Fuel	\$37,196	12%	\$40,267	12%	\$38,033	11%
Repairs & Maintenance ^c	\$28,870	9%	\$32,020	9%	\$33,393	10%
Bait/Ice	\$16,889	5%	\$20,687	5%	\$16,718	5%
Provisions	\$659	0%	\$731	0%	\$636	0%
Labour - paid	\$117,093	37%	\$101,077	37%	\$151,803	43%
(2) Labour - unpaid ^d	\$22,652	7%	\$20,239	7%	\$6,767	2%
Other	\$7,905	2%	\$8,122	2%	\$2,663	1%
(3) Total Variable Costs	\$231,265	72%	\$223,143	72%	\$250,012	71%
Fixed Costs						
Licence Fee	\$20,535	6%	\$21,971	6%	\$23,060	7%
Insurance	\$7,042	2%	\$7,236	2%	\$7,571	2%
(4) Interest	\$34,073	11%	\$30,765	11%	\$33,836	10%
(5) Labour - unpaid ^d	\$3,767	1%	\$3,894	1%	\$13,922	4%
(6) Leasing	\$3,343	1%	\$2,979	1%	\$1,789	1%
Legal & Accounting	\$3,191	1%	\$3,279	1%	\$4,269	1%
Telephone etc.	\$2,176	1%	\$2,236	1%	\$1,885	1%
Slipping & Mooring	\$7,468	2%	\$7,673	2%	\$6,393	2%
Travel	\$1,203	0%	\$1,236	0%	\$1,180	0%
Office & Admin	\$5,141	2%	\$5,282	2%	\$6,770	2%
(7) Total Fixed Costs	\$87,938	28%	\$86,551	28%	\$100,674	29%
(8) Total Boat Cash Costs (3+7)	\$319,203	100%	\$309,694	100%	\$350,686	100%
Boat Gross Margin (1-3)	\$262,150		\$217,195		\$360,633	
(9) Total Unpaid Labour (2+5)	\$26,420		\$24,132		\$20,689	
Gross Operating Surplus (1-8+9)	\$200,632		\$154,777		\$280,648	
(10) Boat Cash Income (1-8)	\$174,212		\$130,644		\$259,959	
(11) Depreciation	\$53,696		\$51,213		\$60,621	
(12) Boat Business Profit (10-11)	\$120,516		\$79,432		\$199,338	
(13) Profit at Full Equity (12+4+6)	\$157,932		\$113,176		\$234,963	
Boat Capital						
(14) Fishing Gear & Equip	\$428,884		\$400,002		\$441,358	
Licence Value	\$3,336,990		\$3,280,938		\$4,343,816	
(15) Total Boat Capital	\$3,765,874		\$3,680,941		\$4,785,173	
Rate of Return on Fishing Gear & Equip (13/14*100)	36.8%		28.3%		53.2%	
Rate of Return on Total Boat Capital (13/15*100)	4.2%		3.1%		4.9%	

^a Estimates of financial performance for the year 2011/12 are based on the 2012 licence holder survey and estimates for the years 2012/13 and 2013/14 are based on the 2015 licence holder survey. All figures are presented in nominal terms.

^{b-d} See Appendix Table 4-1 footnotes.

Source: BDO EconSearch (2022a)

Appendix Table 4-5 Financial performance in the SA SZRL Fishery, 2014/15 to 2016/17 (average per boat) ^a

	2014/15		2015/16		2016/17	
	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b
(1) Total Boat Gross Income	\$701,234		\$775,747		\$622,958	
Variable Costs						
Fuel	\$35,627	10%	\$35,471	10%	\$31,791	8%
Repairs & Maintenance ^c	\$32,447	9%	\$32,996	9%	\$44,700	12%
Bait/Ice	\$19,718	6%	\$13,322	4%	\$18,249	5%
Provisions	\$618	0%	\$628	0%	\$2,093	1%
Labour - paid	\$149,428	43%	\$154,355	44%	\$148,197	40%
(2) Labour - unpaid ^d	\$6,661	2%	\$6,881	2%	\$13,357	4%
Other	\$2,587	1%	\$2,619	1%	\$2,196	1%
(3) Total Variable Costs	\$247,086	71%	\$246,273	70%	\$260,583	70%
Fixed Costs						
Licence Fee	\$26,276	8%	\$26,327	8%	\$24,593	7%
Insurance	\$7,665	2%	\$7,715	2%	\$8,162	2%
(4) Interest	\$32,017	9%	\$31,653	9%	\$34,610	9%
(5) Labour - unpaid ^d	\$14,278	4%	\$14,598	4%	\$14,640	4%
(6) Leasing	\$2,054	1%	\$2,272	1%	\$7,678	2%
Legal & Accounting	\$4,321	1%	\$4,350	1%	\$5,169	1%
Telephone etc.	\$1,908	1%	\$1,921	1%	\$2,238	1%
Slipping & Mooring	\$6,212	2%	\$6,317	2%	\$5,597	1%
Travel	\$1,194	0%	\$1,202	0%	\$2,883	1%
Office & Admin	\$6,853	2%	\$6,898	2%	\$8,449	2%
(7) Total Fixed Costs	\$102,779	29%	\$103,253	30%	\$114,019	30%
(8) Total Boat Cash Costs (3+7)	\$349,865	100%	\$349,526	100%	\$374,602	100%
Boat Gross Margin (1-3)	\$454,147		\$529,475		\$362,375	
(9) Total Unpaid Labour (2+5)	\$20,939		\$21,479		\$27,997	
Gross Operating Surplus (1-8+9)	\$372,307		\$447,700		\$276,354	
(10) Boat Cash Income (1-8)	\$351,369		\$426,222		\$248,356	
(11) Depreciation	\$56,900		\$53,409		\$53,724	
(12) Boat Business Profit (10-11)	\$294,469		\$372,812		\$194,632	
(13) Profit at Full Equity (12+4+6)	\$328,540		\$406,738		\$236,920	
Boat Capital						
(14) Fishing Gear & Equip	\$414,261		\$388,849		\$465,608	
Licence Value	\$4,988,212		\$5,518,264		\$5,354,657	
(15) Total Boat Capital	\$5,402,473		\$5,907,113		\$5,820,266	
Rate of Return on Fishing Gear & Equip (13/14*100)	79.3%		104.6%		50.9%	
Rate of Return on Total Boat Capital (13/15*100)	6.1%		6.9%		4.1%	

^a Estimates of financial performance for the year 2014/15 and 2015/16 are based on the 2015 licence holders survey and estimates for 2016/17 are based on the 2018 licence holder survey. All figures are presented in nominal terms.

^{b-d} See Appendix Table 4-1 footnotes.

Source: BDO EconSearch (2022a)

Appendix Table 4-6 Financial performance in the SA SZRL Fishery, 2017/18 and 2018/19 (average per boat) ^a

	2017/18		2018/19	
	Average per Boat	Share of TBCC ^b	Average per Boat	Share of TBCC ^b
(1) Total Boat Gross Income	\$609,462		\$687,748	
Variable Costs				
Fuel	\$25,679	8%	\$21,200	7%
Repairs & Maintenance ^c	\$35,641	11%	\$29,119	10%
Bait/Ice	\$14,551	5%	\$11,963	4%
Provisions	\$1,669	1%	\$1,363	0%
Labour - paid	\$117,486	37%	\$96,698	34%
(2) Labour - unpaid ^d	\$10,589	3%	\$8,716	3%
Other	\$1,751	1%	\$1,372	0%
(3) Total Variable Costs	\$207,366	64%	\$170,431	60%
Fixed Costs				
Licence Fee	\$25,196	8%	\$25,632	9%
Insurance	\$8,379	3%	\$8,498	3%
(4) Interest	\$34,610	11%	\$34,210	12%
(5) Labour - unpaid ^d	\$14,943	5%	\$15,268	5%
(6) Leasing	\$7,511	2%	\$8,476	3%
Legal & Accounting	\$5,307	2%	\$5,382	2%
Telephone etc.	\$2,297	1%	\$2,330	1%
Slipping & Mooring	\$4,463	1%	\$3,646	1%
Travel	\$2,959	1%	\$3,001	1%
Office & Admin	\$8,674	3%	\$8,797	3%
(7) Total Fixed Costs	\$114,338	36%	\$115,243	40%
(8) Total Boat Cash Costs (3+7)	\$321,704	100%	\$285,673	100%
Boat Gross Margin (1-3)	\$402,096		\$517,317	
(9) Total Unpaid Labour (2+5)	\$25,532		\$23,984	
Gross Operating Surplus (1-8+9)	\$313,290		\$426,059	
(10) Boat Cash Income (1-8)	\$287,758		\$402,075	
(11) Depreciation	\$51,897		\$50,015	
(12) Boat Business Profit (10-11)	\$235,861		\$352,060	
(13) Profit at Full Equity (12+4+6)	\$277,983		\$394,747	
Boat Capital				
(14) Fishing Gear & Equip	\$449,776		\$433,464	
Licence Value	\$5,238,648		\$5,911,562	
(15) Total Boat Capital	\$5,688,424		\$6,345,025	
Rate of Return on Fishing Gear & Equip (13/14*100)	61.8%		91.1%	
Rate of Return on Total Boat Capital (13/15*100)	4.9%		6.2%	

^a Estimates of financial performance for the years 2017/18 and 2018/19 are based on the 2018 licence holders survey. All figures are presented in nominal terms.

^{b-d} See Appendix Table 4-1 footnotes.

Source: BDO EconSearch (2022a)

APPENDIX 5 Nominal Licence Fees and Net Economic Return

Appendix Table 5-1 Costs of management in the SA Southern Zone Rock Lobster Fishery, 2002/03 to 2022/23^a

	Licence Fee	GVP	Fee/GVP	Catch	Fee/Catch	Active Licences	Fee/Active Licence
	(\$'000)	(\$'000)	(%)	(tonnes)	(\$/kg)	(No.)	(\$/licence)
2002/03	2,156	63,838	3.4%	1,766	\$1.22	181	\$11,909
2003/04	2,520	49,319	5.1%	1,896	\$1.33	181	\$13,922
2004/05	2,497	54,397	4.6%	1,897	\$1.32	181	\$13,793
2005/06	2,508	65,737	3.8%	1,889	\$1.33	181	\$13,855
2006/07	2,976	78,919	3.8%	1,895	\$1.57	181	\$16,442
2007/08	2,628	75,731	3.5%	1,850	\$1.42	181	\$14,518
2008/09	2,523	85,371	3.0%	1,407	\$1.79	181	\$13,941
2009/10	2,594	70,720	3.7%	1,243	\$2.09	181	\$14,332
2010/11	2,695	67,020	4.0%	1,244	\$2.17	181	\$14,891
2011/12	2,605	79,111	3.3%	1,242	\$2.10	181	\$14,391
2012/13	2,787	71,048	3.9%	1,234	\$2.26	181	\$15,398
2013/14	2,853	88,883	3.2%	1,247	\$2.29	181	\$15,764
2014/15	3,251	101,842	3.2%	1,238	\$2.63	180	\$18,063
2015/16	3,231	112,782	2.9%	1,244	\$2.60	180	\$17,950
2016/17	3,231	99,723	3.2%	1,238	\$2.61	180	\$17,950
2017/18	3,310	98,178	3.4%	1,246	\$2.66	180	\$18,390
2018/19	3,368	110,737	3.0%	1,245	\$2.70	180	\$18,709
2019/20	3,390	103,538	3.3%	1,203	\$2.82	180	\$18,831
2020/21	3,444	71,299	4.8%	1,275	\$2.70	180	\$19,131
2021/22	3,433	65,859	5.2%	1,328	\$2.58	180	\$19,071
2022/23	1,741	n.a.	-	n.a.	-	180	\$9,671

^a Values are in nominal terms.

Source: PIRSA Fisheries and SARDI Aquatic Sciences

Appendix Table 5-2 Net economic return (NER) ^a in the SA Southern Zone Rock Lobster Fishery, 2002/03 to 2021/22 (\$'000)

	Gross Income	Less Labour	Less Cash Costs	Less Depreciation	Less Opportunity Cost of Capital (@10%)	NER
2002/03	63,838	24,031	12,792	8,018	5,795	13,202
2003/04	49,319	19,497	13,899	7,975	5,765	2,183
2004/05	54,397	15,060	13,319	8,303	6,091	11,625
2005/06	65,737	18,620	14,851	7,806	5,726	18,734
2006/07	78,919	22,970	16,425	8,024	5,886	25,614
2007/08	75,731	21,330	20,710	6,593	6,514	20,583
2008/09	85,371	24,949	22,106	6,668	6,589	25,058
2009/10	70,720	21,460	21,958	6,757	6,676	13,869
2010/11	67,020	18,944	22,998	8,764	7,000	9,313
2011/12	79,111	21,770	22,393	8,804	6,876	19,268
2012/13	70,601	20,075	24,169	8,211	6,413	11,732
2013/14	88,883	25,107	23,494	8,824	6,424	25,034
2014/15	102,336	24,863	21,223	8,304	6,046	41,901
2015/16	113,210	25,661	20,397	7,794	5,675	53,683
2016/17	100,512	28,428	25,189	8,668	7,512	30,714
2017/18	98,334	23,075	22,034	8,373	7,257	37,594
2018/19	110,965	19,472	19,733	8,070	6,994	56,697
2019/20	103,915	27,482	20,936	6,914	8,435	40,147
2020/21	71,671	28,812	21,727	6,834	8,337	5,962
2021/22	66,364	28,795	22,950	6,752	8,237	-370

^a Adjusted for sample bias. Values are in nominal terms.

Source: BDO EconSearch analysis



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