



# ECONOMIC AND SOCIAL INDICATORS FOR THE SOUTH AUSTRALIAN BLUE CRAB FISHERY, 2021/22

A Report for the Department of  
Primary Industries and Regions

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Prepared by

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## ABBREVIATIONS

|       |   |
|-------|---|
| ABS   | Australian Bureau of Statistics                                   |
| BCF   | Blue Crab Fishery   |
| CPI   | Consumer Price Index  |
| DEH   | Department of Environment and Heritage                            |
| EPBC  | Commonwealth Environment Protection and Biodiversity Conservation |
| fte   | full time equivalent  |
| GOS   | gross operating surplus   |
| GSP   | gross state product   |
| GVP   | gross value of production   |
| MSF   | Marine Scalefish Fishery  |
| NER   | Net Economic Return   |
| 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               |
| TACC  | total allowable commercial catch                                  |
| TBCC  | Total Boat Cash Costs   |
| TBI   | Total Boat Income   |

## ACKNOWLEDGMENTS

In the preparation of economic indicators for the SA Blue Crab Fishery 2021/22, BDO EconSearch has relied heavily on the voluntary cooperation of fishing operators in providing data for the surveys. For the most recent (2020) survey we are particularly grateful for the time and cooperation generously provided by licence holders in responding to the rather lengthy questionnaire. BDO EconSearch is also indebted to various individuals and institutions for providing the necessary information for updating the indicators between survey years. Industry representatives, PIRSA and SARDI officers provided assistance, were supportive of the data collection and offered valuable advice.

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## EXECUTIVE SUMMARY

The objective of this report is to present a set of economic and social performance indicators for the South Australian (SA) Commercial Blue Crab Fishery (BCF) 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.

### Economic Performance Indicators

Specific strategies and performance indicators relating to economic objectives outlined in the management plan are detailed in Table ES-1. These performance indicators are presented against the reference points also outlined in the management plan, and the three-year trend in results. A summary of key economic indicators for 2018/19 to 2021/22 is presented in Table ES-2.

Table ES-1 SA Commercial Blue Crab Fishery performance indicators and trends

| Performance Indicator  | Reference Points  | Reference Period Trends (2018/19 to 2021/22)   |
|--|---|--|
| Trend in Gross Value of Production (GVP)                         | Economic indicators are monitored and reported annually | Real GVP decreased by 13%  |
| Trend in total economic contribution                             | As above  | Total output, gross state product (GSP), employment and household income all increased |
| Trend in gross state product                                     | As above  | Real gross state product increased by 18%  |
| Level of full-time equivalent employment provided by the fishery | As above  | Full-time equivalent employment increased by 40%                                       |
| Trend in licence fees against GVP                                | As above  | Fees/GVP increased slightly from 3.6% to 3.7%  |
| Trend in fees per licence holder                                 | As above  | Real fees per licence holder decreased by 13%  |
| Trend in fees as a proportion of total cash costs                | As above  | Fees as a proportion of total cash costs decreased from 8.7% to 5.8%                   |



Table ES-2 Summary of key economic indicators, 2018/19 to 2021/22<sup>a</sup>

| Indicator                              | 2018/19  | 2019/20  | 2020/21  | 2021/22  |
|--|----------|----------|----------|----------|
| Catch                                  | 616t     | 620t     | 592t     | 521t     |
| GVP                                    | \$10.1m  | \$9.8m   | \$8.9m   | \$8.7m   |
| Total gross state product <sup>b</sup> | \$22.7m  | \$24.8m  | \$26.4m  | \$26.9m  |
| Total employment <sup>b</sup>          | 161 fte  | 188 fte  | 216 fte  | 225 fte  |
| Fee/licence                            | \$40,810 | \$40,669 | \$37,829 | \$35,609 |
| Fee/GVP                                | 3.6%     | 3.7%     | 3.8%     | 3.7%     |
| Fee/total cash costs                   | 8.7%     | 6.6%     | 6.1%     | 5.8%     |

<sup>a</sup> Dollar values in this table are in real 2021/22 dollars.

<sup>b</sup> Values have been revised using updated information received in 2021/22.

### South Australian Commercial Blue Crab Fishery

The SA Commercial Blue Crab Fishery (BCF) consists of nine BCF licences operating across five boats (also referred to as ‘pot fishers’) in two fishing zones, Spencer Gulf and Gulf St Vincent. An annual Total Allowable Commercial Catch (TACC) or quota is determined for the fishery for the 12-month period from 1 July to 30 June, with separate quota units allocated for each fishing zone. Almost all of the TACC (99 per cent) is allocated among the BCF licence holders, with the remainder allocated to some Marine Scalefish Fishery (MSF) licence holders for access within these two fishing zones.

MSF licence holders with specific endorsements are also able to access Blue Crabs resources from State waters, within three nautical miles of the coast, west of longitude 135°E. This ‘West Coast’ region is not subject to quota management arrangements and is fished solely by MSF licence holders (Noell et al. 2014). This catch is not subject to the same management conditions as the catch taken in the gulfs and, as such, has been excluded from this report but included in the Marine Scalefish Fishery Economic Indicators report (BDO EconSearch 2022a).

### Catch and Gross Value of Production

The total catch of Blue Crabs in the gulfs of SA increased from 515 tonnes in 2002/03 to 521 tonnes in 2021/22<sup>1</sup>. The total catch in 2021/22 (521t) was 1 per cent above that in 2002/03. While the nominal value of the catch was almost three times that in 2002/03, increasing from \$3.2 million to \$8.7 million in 2021/22. In real terms, GVP in 2021/22 was 74 per cent higher than that in 2002/03, a result of the increase in catch (1 per cent), and a significant rise in the real price (72 per cent).

The nominal price of Blue Crabs between 2002/03 to 2021/22 followed an increasing trend. The 174 per cent increase in nominal price over the period 2002/03 to 2021/22 is equivalent to a 72 per cent rise in the real price (that is the nominal price adjusted for inflation).

<sup>1</sup> Time series data are presented for the 20-year period 2002/03 to 2021/22 throughout the report.

### Management Costs

Licence fees as a percentage of GVP fluctuated over the 20 years but generally followed a declining trend. From 2002/03 to 2021/22 licence fees as a percentage of GVP fell from 4.2 per cent in 2002/03 to 3.7 per cent in 2021/22. This change was a result of an increase in fishery GVP, despite an increase in the total cost of management of the fishery. The average real management fee per active licence increased between 2002/03 (\$29,941) and 2021/22 (\$35,609), a result of the increase in real aggregate licence fees.

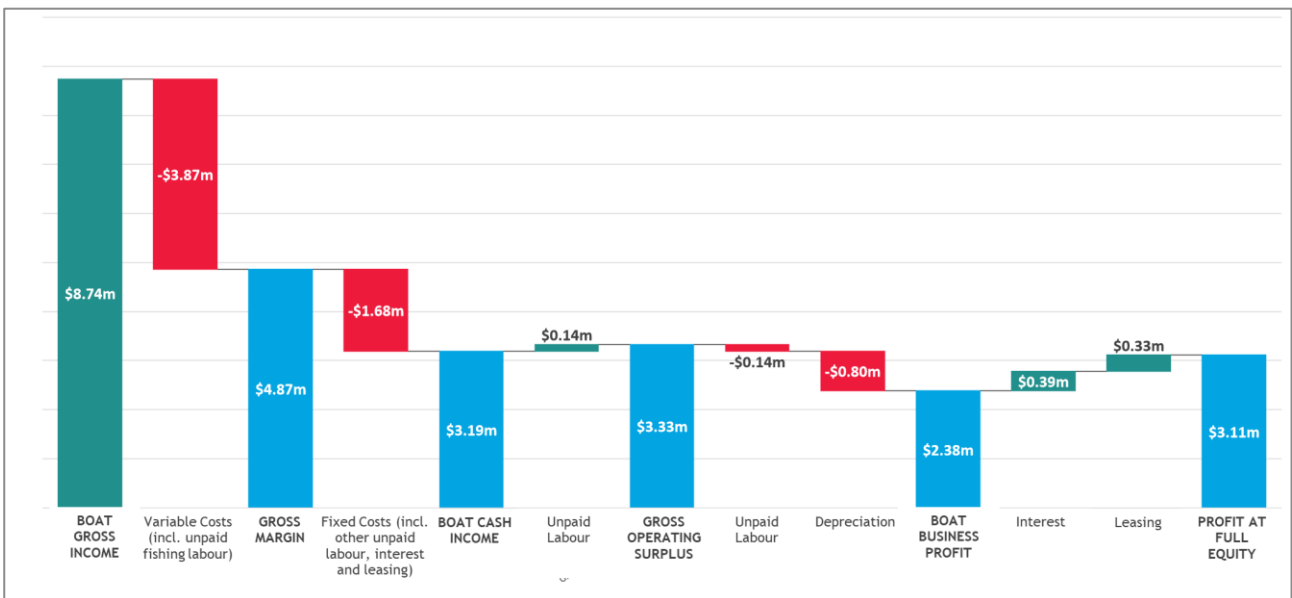
### Financial Performance Indicators

Boat gross income increased between 2002/03 and 2021/22, reflecting an increase in both catch and price in the fishery. Overall, between 2002/03 to 2021/22, the average price of Blue Crabs increased by 72 per cent in real terms. The average costs of catching Blue Crabs has fluctuated over the same period, increasing overall, peaking in 2021/22 with average cash costs per kilogram 26 per cent higher, in real terms, than in 2002/03.

Changes in each of the profitability measures for the fishery were closely related to the total gross income earned. Overall profits increased between 2002/03 and 2021/22, principally the result of an increase in fishery income and improved fishing productivity, but fell for the third consecutive year in 2021/22. While gross income improved, the decline is a result of increasing costs, and price increasing at a slower rate.

Profit at full equity in 2021/22 (\$3.1 million) was 1 per cent lower than the previous year (\$3.1 million). The calculation of profit at full equity is illustrated in Figure ES-1 for 2021/22.

Figure ES-1 Summary of financial performance in the SA Commercial Blue Crab Fishery, 2021/22



Despite fluctuations, the estimated rate of return to total capital for the fishery has decreased overall between 2002/03 (10.1 per cent) and 2021/22 (4.9 per cent). This is due to an increase in costs, and price not increasing enough to cover this increase. The rate of return to fishing gear and equipment (excluding licence value) also followed a declining trend overall despite fluctuations, from 44 per cent in 2002/03 to 36 per cent in 2021/22. However, this is reflective of the higher rate of increase in the value of fishing gear and equipment within the fishery rather than a decline in profitability.

### **Contribution to South Australian Economy**

The change in total output and GSP contributions are closely related to changes in price and fishery GVP in the long term. Output, household income and contribution to GSP all followed an increasing trend between 2002/03 to 2021/22. Despite fluctuations, the total employment contribution has also followed an increasing trend over the period 2002/03 to 2021/22. The recent increase in these indicators can be attributed to the increased activity of associated downstream sectors (processing, retail trade and food service sectors).

In 2021/22, there was an estimated 225 full time equivalent (fte) jobs generated, directly and indirectly, by the BCF in SA. The fishery's contribution to GSP was estimated to be \$26.9 million.

### **Net Economic Return**

Real net economic return (NER) has fluctuated over the 20-year period but increased overall from \$141,000 in 2002/03 to \$2.2m in 2021/22. Changes in economic rent closely follow changes in fishery income.

NER expressed as a percentage of GVP is a useful indicator for analysing the economic efficiency of a fishery over time and for comparing different fisheries. This measure increased overall from 3 per cent in 2002/03 to 26 per cent in 2021/22, despite being as low as -15 per cent in 2004/05.

Yield on licences (i.e. NER as a proportion of the aggregate value of licences) compared to other industries is currently unusually high for this fishery and for SA fisheries in general.

## 1. INTRODUCTION

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 reports on them are required for the Minister for the Department of Primary Industries and Regions (PIRSA) to meet the obligations of section 7 of the *Fisheries Management Act 2007*.

This report is the twenty-fourth annual economic indicators report for the SA Commercial Blue Crab Fishery. The SA Commercial Blue Crab Fishery (BCF) consists of nine BCF licences operating across five boats (also referred to as ‘pot fishers’) in two fishing zones, Spencer Gulf and Gulf St Vincent. An annual Total Allowable Commercial Catch (TACC) or quota is determined for the fishery for the 12-month period from 1 July to 30 June, with separate quota units allocated for each fishing zone. Almost all of the TACC (99 per cent) is allocated among the BCF licence holders, with the remainder allocated to some Marine Scalefish Fishery (MSF) licence holders for access within these two fishing zones.

MSF licence holders with specific endorsements are also able to access Blue Crabs resources from State waters, within three nautical miles of the coast, west of longitude 135°E. This ‘West Coast’ region is not subject to quota management arrangements and is fished solely by MSF licence holders (Noell et al. 2014). This catch is not subject to the same management conditions as the catch taken in the gulfs and, as such, has been excluded from this report but included in the Marine Scalefish Fishery Economic Indicators report (BDO EconSearch 2022a).

The objective of this report, *Economic Indicators for the South Australian Commercial Blue Crab Fishery 2021/22*, is to provide an update of the fishery’s most recent economic and social performance based on the seventh licence holder survey, undertaken in 2020. 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, for the 20-year period 2002/03 to 2021/22, of economic information to aid management of the fishery in future years. The economic indicators detailed in this report include:

- gross value of production (catch and price)
- factors affecting costs
- the cost of management of the fishery
- financial performance indicators (income, costs, profit and return on investment)
- economic contribution of the fishery
- net economic return
- external factors that influence the economic condition the fishery.

For purposes of comparison, summary economic indicators for all SA commercial fisheries, up to 2020/21, are presented in Appendix 1.

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

## 2. METHOD OF ANALYSIS AND DEFINITION OF TERMS

### 2.1. Survey of Licence Holders, 2019/20

The questionnaire for the 2019/20 survey was based on the previous economic indicator surveys. It was drafted by the consultants in consultation with the Executive Officer of the South Australian Blue Crab Pot Fishery. In September 2020, all licence holders were sent an introductory letter encouraging them to participate in 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 survey responses were received from all of the 9 pot sector licences. Marine Scalefish sector quota holders represent a very small proportion of total Blue Crab quota (1 per cent). As such, since 2010/11 Blue Crab economic indicators have been prepared for the pot sector only.

### 2.2. Updating the Indicators, 2021/22

The 2021/22 economic indicators for the BCF were derived using a range of primary and secondary data, and survey-based 2019/20 indicators. The following information was used to adjust the 2019/20 indicators to reflect the fishery's performance in 2021/22.

- SARDI data were used to reflect changes in catch and its value between 2019/20 and 2021/22. Catch and value data were used to estimate the average total boat income in the fishery.
- Information on change in fishing effort (number of days fished) between 2019/20 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 Terms <sup>2 3</sup>

**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. 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 Gross Operating Surplus(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.

**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.

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<sup>2</sup> Where possible definitions have been kept consistent with those used by Brown (1997) in ABARE's Australian Fisheries Surveys Report.

<sup>3</sup> These terms are used for all fisheries in South Australia and therefore are based on uniformed definitions. In some cases the definitions may differ from the context used in the Blue Crab fishery report. For example, total boat income here is defined as 'the cash receipts received by an individual firm' where in this report the total boat income refers to the cash receipts received by the fishery as a whole.

**Boat Cash Income:** is defined as GOS 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 (TBI)* less *Total Boat Cash Costs (TBCC)* 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 TBI. 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 wage rates. In the above calculations this labour cost can be included simply as another cost so that GOS 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 cost include:

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

**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, pots, lines, etc.)
- repairs & maintenance: ongoing (slipping, painting, overhaul of motor).

### **3. ECONOMIC INDICATORS FOR THE SA COMMERCIAL BLUE CRAB FISHERY**

#### **3.1. Economic Objectives of the SA Commercial Blue Crab Fishery**

Management of the BCF is undertaken to achieve the following objectives (PIRSA 2020):

1. Ensure the Blue Swimmer Crab resource is harvested within ecologically sustainable limits.
2. Allocate access to Blue Swimmer Crab resources to achieve optimum utilisation and equitable distribution to the benefit of the community.
3. Minimise impacts on the ecosystem.
4. Cost effective and participative management of the fishery.

In order to achieve these aims the management plan sets out specific biological, ecological, social and economic objectives for the fishery. The economic objectives of the Commercial Blue Crab 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 Commercial Blue Crab Fishery

| Goal  | Objective   | Management Strategies   | Performance Indicator  |
|---|---|---|--|
| <b>Goal 2:</b><br>Allocate access to Blue Swimmer Crab resources to achieve optimum utilisation and equitable distribution to the benefit of the community. | 2b. Maintain a flow of economic benefit from the fishery to the broader community.                                  | Economic indicators are monitored and reported annually.  | Economic indicators are monitored and reported annually: <ul style="list-style-type: none"> <li>• Gross Value of Production (GVP)</li> <li>• Total economic impact</li> <li>• Total gross state product</li> <li>• Level of full-time equivalent employment provided by the fishery</li> </ul> |
| <b>Goal 4:</b><br>Cost effective and participative management of the fishery.   | 4a. Provide cost-effective and efficient management of the fishery, in line with government's cost recovery policy. | Develop and implement management arrangements that are effective at achieving management objectives and optimising costs. | Economic indicators are monitored and reported annually: <ul style="list-style-type: none"> <li>• Fee per licence holder</li> <li>• Licence fees as a proportion of GVP</li> <li>• Licence fees as a proportion of total cash costs</li> </ul>   |

 Indicators reported in Economic reports.

Source: PIRSA (2020)

### 3.2. Catch and Gross Value of Production

The total catch of Blue Crabs in the gulfs in SA, as detailed in Table 3-2, has followed a slight increasing trend between 2002/03 (515t) and 2021/22 (521t). However, comparison of the two end-years in Table 3-2 (2002/03 and 2021/22) illustrates how the value of the fishery has changed over the 20 years. The total catch in 2021/22 (521t) was only 1 per cent above that in 2002/03 but the nominal value of the catch was almost three times that in 2002/03, increasing from \$3.2 million to \$8.7 million in 2021/22. In real terms, GVP in 2021/22 was 74 per cent higher than that in 2002/03, a result of the increase in catch (1 per cent) and a rise in the real price (72 per cent) (Figure 3-1). Figure 3-2 shows that the 72 per cent increase in real price (that is the nominal price adjusted for inflation) over the period 2002/03 to 2021/22 is equivalent to 174 per cent rise in the nominal price.

Table 3-2 Catch and value of catch of the SA Blue Crab Pot fishery, 2002/03 to 2021/22 <sup>a</sup>

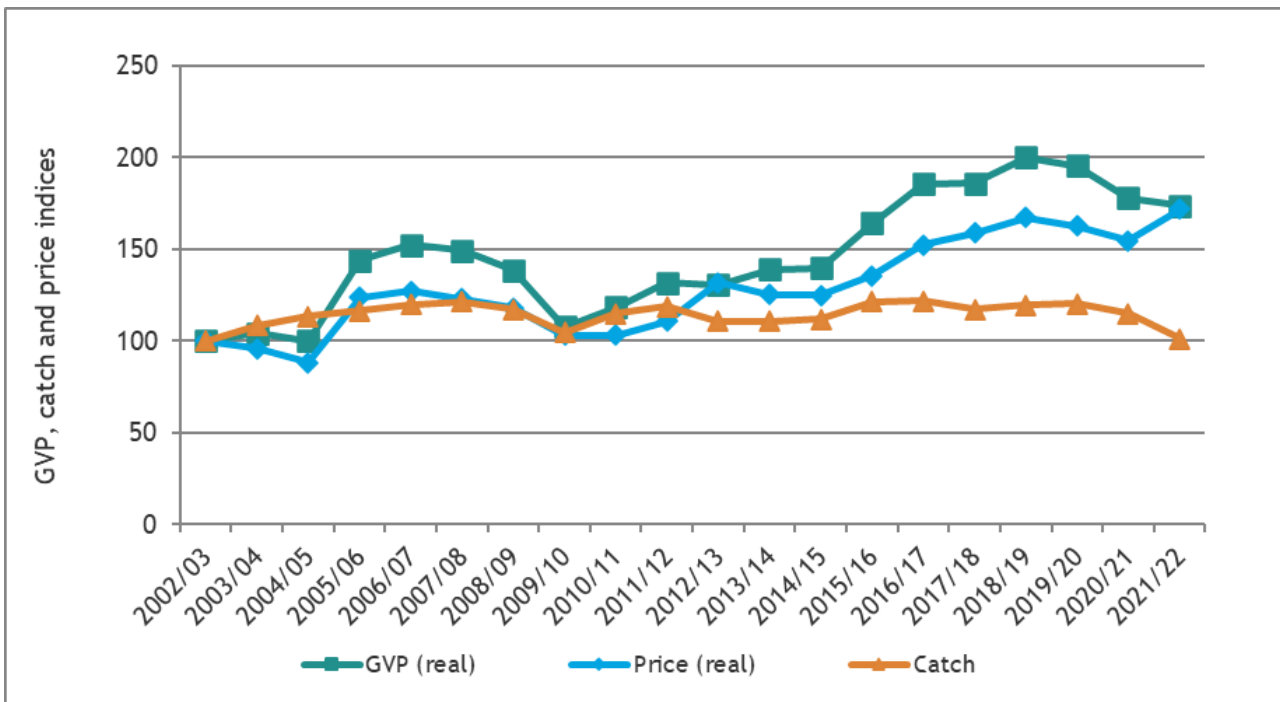
|         | Catch<br>(tonnes) | Nominal Value of Catch<br>(\$'000) | Real Value of Catch<br>(\$'000 2021/22) |
|---------|-------------------|------------------------------------|---|
| 2002/03 | 515               | 3,157                              | 5,033                                   |
| 2003/04 | 559               | 3,385                              | 5,243                                   |
| 2004/05 | 584               | 3,322                              | 5,033                                   |
| 2005/06 | 600               | 4,966                              | 7,252                                   |
| 2006/07 | 617               | 5,338                              | 7,662                                   |
| 2007/08 | 625               | 5,469                              | 7,506                                   |
| 2008/09 | 604               | 5,156                              | 6,969                                   |
| 2009/10 | 539               | 4,125                              | 5,424                                   |
| 2010/11 | 591               | 4,702                              | 5,951                                   |
| 2011/12 | 611               | 5,294                              | 6,620                                   |
| 2012/13 | 511               | 5,368                              | 6,575                                   |
| 2013/14 | 571               | 5,883                              | 6,988                                   |
| 2014/15 | 576               | 5,995                              | 7,033                                   |
| 2015/16 | 625               | 7,094                              | 8,269                                   |
| 2016/17 | 627               | 8,143                              | 9,344                                   |
| 2017/18 | 603               | 8,371                              | 9,357                                   |
| 2018/19 | 616               | 9,141                              | 10,074                                  |
| 2019/20 | 620               | 9,002                              | 9,842                                   |
| 2020/21 | 592               | 8,410                              | 8,945                                   |
| 2021/22 | 521               | 8,741                              | 8,741                                   |

<sup>a</sup> Excludes catch of Blue Crabs from the West Coast by Marine Scalefish licence holders. SARDI estimates of GVP for 2012/13 to 2021/22 have been re-valued to reflect price differentials between Adelaide and interstate markets.

Source: SARDI Aquatic Sciences

Note that the GVP estimates for the years 2012/13 to 2021/22 are based on estimates published by SARDI, adjusted using interstate market data supplied by licence holders in the 2013/14, 2016/17 and 2019/20 surveys. It is acknowledged that SARDI's estimate of the GVP of Blue Crabs harvested in SA is underestimated because average values are based on wholesale prices received at the Adelaide market. Evidence from licence holders suggests a large proportion of the catch is marketed either at the Sydney or Melbourne markets, where prices received are considerably higher than can be obtained at the Adelaide market. However, a reasonable amount of product is still marketed in Adelaide.

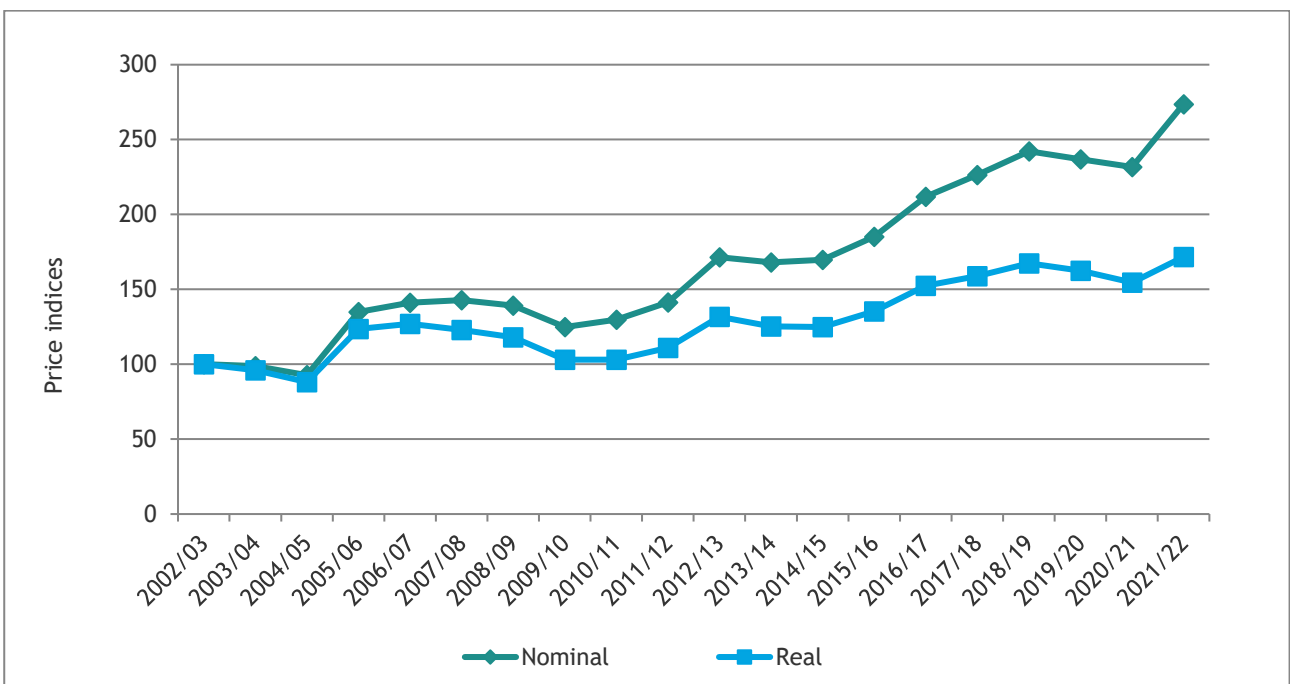
Figure 3-1 GVP, price and catch indices for the SA Commercial Blue Crab fishery (2002/03=100) <sup>a</sup>



<sup>a</sup> Excludes catch of Blue Crabs from the West Coast by Marine Scalefish licence holders. SARDI estimates of GVP for 2012/13 to 2021/22 have been re-valued to reflect price differentials between Adelaide and interstate markets.

Source: SARDI Aquatic Sciences

Figure 3-2 Price Indices for the SA Commercial Blue Crab Fishery (2002/03=100) <sup>a</sup>



<sup>a</sup> 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 CPI (consumer price index) for Adelaide 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 Commercial Blue Crab

The information in Table 3-3 was used to adjust the 2020/21 financial performance indicators to reflect the costs incurred in the fishery in 2021/22.

Table 3-3 Factors affecting costs in the Blue Crab Fisheries, 2020/21 to 2021/22

|   | 2020/21 | 2021/22 | Change |
|---|---------|---------|--------|
| Total Days Fished <sup>a</sup>                    | 1,088   | 1,118   | 2.8%   |
| Price of Fuel - Transportation Index <sup>b</sup> | 105.7   | 119.7   | 13.2%  |
| Interest charges (%/annum) <sup>c</sup>           | 6.5%    | 6.6%    | 1.4%   |
| CPI Adelaide <sup>d</sup>                         | 117.8   | 125.3   | 6.4%   |
| Wage Price Index <sup>e</sup>                     | 136.4   | 139.3   | 2.1%   |

<sup>a</sup> SARDI Aquatic Sciences

<sup>b</sup> Transportation index (component of CPI) for Adelaide (ABS 2022a)

<sup>c</sup> RBA indicator lending rate for small business (RBA 2022b)

<sup>d</sup> CPI for Adelaide (ABS 2022a)

<sup>e</sup> Wage price index for SA (ABS 2022b)

The following data were used, and adjustments made.

- Information from SARDI on the change in fishing effort (total nights 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.

### 3.4. Cost of Management

Licence fees from BCF 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 BCF. For this analysis, the cost of providing these management services have been assumed to be equal to the gross receipts from licence fees in the fishery (PIRSA, pers. comm.). However, 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
- research services.

Licence fee receipts for the period 2002/03 to 2022/23 for the fishery are shown in Table 3-4. Licence fee values are in real 2021/22 dollars.

For the fishery as a whole:

- Despite fluctuations, licence fees as a percentage of GVP declined overall. Between 2002/03 and 2021/22 they fell from 4.2 per cent in 2002/03 to 3.7 per cent in 2021/22. The decline is principally the result of the increase in GVP, and despite an increase in real aggregate licence fees.
- The cost of management per kilogram of crabs increased between 2002/03 and 2021/22, from \$0.41/kg to \$0.62/kg, principally the result of the increase in aggregate licence fees.
- Average fee per active licence was \$29,941 in 2002/03, increasing across the 20 years to be \$35,609 in 2021/22. A result of an increase in real aggregate licence fees.

Table 3-4 Costs of management in the SA Commercial Blue Crab Fishery, 2002/03 to 2022/23 <sup>a,b</sup>

|                      | Licence Fee | GVP      | Fee/GVP | Catch    | Fee/Catch | Active Licences | Fee/Active Licence |
|----------------------|-------------|----------|---------|----------|-----------|-----------------|--------------------|
|                      | (\$'000)    | (\$'000) | (%)     | (tonnes) | (\$/kg)   | (No.)           | (\$/licence)       |
| 2002/03              | 210         | 5,033    | 4.2%    | 515      | \$0.41    | 7               | \$29,941           |
| 2003/04              | 317         | 5,243    | 6.0%    | 559      | \$0.57    | 8               | \$39,632           |
| 2004/05              | 311         | 5,033    | 6.2%    | 584      | \$0.53    | 8               | \$38,931           |
| 2005/06              | 350         | 7,252    | 4.8%    | 600      | \$0.58    | 8               | \$43,760           |
| 2006/07              | 383         | 7,662    | 5.0%    | 617      | \$0.62    | 8               | \$47,831           |
| 2007/08              | 313         | 7,506    | 4.2%    | 625      | \$0.50    | 8               | \$39,100           |
| 2008/09              | 308         | 6,969    | 4.4%    | 604      | \$0.51    | 8               | \$38,510           |
| 2009/10              | 372         | 5,424    | 6.9%    | 539      | \$0.69    | 9               | \$41,380           |
| 2010/11              | 350         | 5,951    | 5.9%    | 591      | \$0.59    | 9               | \$38,854           |
| 2011/12              | 306         | 6,620    | 4.6%    | 611      | \$0.50    | 9               | \$33,978           |
| 2012/13              | 348         | 6,575    | 5.3%    | 511      | \$0.68    | 9               | \$38,628           |
| 2013/14              | 337         | 6,988    | 4.8%    | 571      | \$0.59    | 9               | \$37,456           |
| 2014/15              | 369         | 7,033    | 5.2%    | 576      | \$0.64    | 9               | \$41,011           |
| 2015/16              | 326         | 8,269    | 3.9%    | 625      | \$0.52    | 9               | \$36,234           |
| 2016/17              | 361         | 9,344    | 3.9%    | 627      | \$0.58    | 9               | \$40,106           |
| 2017/18              | 330         | 9,357    | 3.5%    | 603      | \$0.55    | 9               | \$36,696           |
| 2018/19              | 367         | 10,074   | 3.6%    | 616      | \$0.60    | 9               | \$40,810           |
| 2019/20              | 366         | 9,842    | 3.7%    | 620      | \$0.59    | 9               | \$40,669           |
| 2020/21              | 340         | 8,945    | 3.8%    | 592      | \$0.58    | 9               | \$37,829           |
| 2021/22              | 320         | 8,741    | 3.7%    | 521      | \$0.62    | 9               | \$35,609           |
| 2022/23 <sup>c</sup> | 327         | n.a.     | -       | n.a.     | -         | 9               | \$36,362           |

<sup>a</sup> This table presents management costs in real 2021/22 dollars. Nominal management costs are presented in Appendix 4.

<sup>b</sup> Excludes catch of Blue Crabs from the West Coast by Marine Scalefish licence holders.

<sup>c</sup> 2021/22 values have not been adjusted.

Source: PIRSA Fisheries and SARDI Aquatic Sciences

Since the introduction of TACC to the SA BCF (in 1996/97) there has been a transfer of commercial effort from the Marine Scalefish sector to the pot sector. One additional pot sector licence holder entered the fishery between 2002/03 and 2003/04 and another was created in 2009/10 (Table 3-4). The number of Marine Scalefish sector licence holders with Blue Crab quota units has decreased significantly. The proportion of catch taken by each sector is determined by holding of quota units. The allocation of units between sectors for the period 2002/03 and 2021/22 is detailed in Table 3-5.

**Table 3-5 Allocation of quota units in the SA Commercial Blue Crab Fishery, 2002/03 to 2021/22**

| Year    | Pot Sector<br>(Units) | Marine Scalefish Sector<br>(Units) | South Australia<br>(Units) |
|---------|-----------------------|------------------------------------|----------------------------|
| 2002/03 | 9,404                 | 1,450                              | 10,854                     |
| 2003/04 | 9,517                 | 1,337                              | 10,854                     |
| 2004/05 | 10,086                | 768                                | 10,854                     |
| 2005/06 | 10,136                | 718                                | 10,854                     |
| 2006/07 | 10,442                | 412                                | 10,854                     |
| 2007/08 | 10,360                | 494                                | 10,854                     |
| 2008/09 | 10,360                | 494                                | 10,854                     |
| 2009/10 | 10,717                | 137                                | 10,854                     |
| 2010/11 | 10,717                | 137                                | 10,854                     |
| 2011/12 | 10,717                | 137                                | 10,854                     |
| 2012/13 | 10,717                | 137                                | 10,854                     |
| 2013/14 | 10,717                | 137                                | 10,854                     |
| 2014/15 | 10,717                | 137                                | 10,854                     |
| 2015/16 | 10,753                | 101                                | 10,854                     |
| 2016/17 | 10,753                | 101                                | 10,854                     |
| 2017/18 | 10,753                | 101                                | 10,854                     |
| 2018/19 | 10,753                | 101                                | 10,854                     |
| 2019/20 | 10,753                | 101                                | 10,854                     |
| 2020/21 | 10,753                | 101                                | 10,854                     |
| 2021/22 | 10,774                | 80                                 | 10,854                     |

Source: PIRSA Fisheries

The proportion of quota units held by the Marine Scalefish sector has fallen from approximately 13 per cent in 2002/03 to just 1 per cent in 2021/22. Accordingly, the proportion of quota units held by the pot sector has risen over the period, from approximately 87 per cent in 2002/03 to 99 per cent in 2021/22 (Table 3-5). It should be noted that the majority of the remaining quota units held by Marine Scalefish licence holders are leased to pot sector licence holders.

### 3.5. Financial Performance Indicators

The major measures of the financial performance of the surveyed boats in the SA Commercial Blue Crab Fishery for the period 2019/20 to 2021/22 are shown in Table 3-6. These are shown on an average per quota unit and per kilogram of catch basis in Table 3-7. As the number of quota units held by each licence holder in the fishery varies significantly, the estimates of financial performance have been presented as a total for the fishery, as an average per quota unit and as an average per kilogram of catch. Estimates for 2019/20 to 2021/22 are based on the most recent survey conducted in September and October 2020. Estimates of financial performance for 2002/03 to 2018/19 are provided in Appendix 3 of this report<sup>4</sup>.

Note that financial performance estimates for 2018/19 to 2021/22 were based on a different survey sample to earlier years. Consequently, some of the difference between these three years and earlier years may be attributable to sampling variability. In particular, since 2010/11 financial performance estimates are reported for the pot sector only.

#### Income

Total recorded Blue Crab catch decreased by 12 per cent between 2020/21 and 2021/22 and gross receipts from the sale of Blue Crabs increased by 4 per cent over the same period in nominal terms (Table 3-2). The total gross income for the fishery as a whole in 2021/22 was estimated to be approximately \$8.7 million (Table 3-6). Income per quota unit was estimated to be \$805.32 and income per kg of catch was estimated to be \$16.78 (Table 3-7).

#### Costs

Table 3-6 and Table 3-7 show total cash costs separated into variable and fixed costs. Variable costs (69 per cent of total boat cash costs in 2021/22) represent a significantly greater proportion of total cash costs to fixed costs (31 per cent).

It was estimated that average total boat cash costs increased by 6 per cent between 2020/21 and 2021/22 (Table 3-6). Other notable changes in costs included a rise in fuel (16 per cent), and repairs and maintenance (9 per cent) (Table 3-6).

In 2021/22, for the fishery as a whole, approximately 49 per cent of total boat cash costs were attributable to labour costs, by far the biggest cost item. The labour costs reported in Table 3-6 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. Imputed unpaid labour (almost \$141,000 for 2021/22) was divided into variable (fishing, and repairs and maintenance, \$10,000) and fixed (management and administration, \$131,000) components based on the 2020 licence holder survey.

The other significant cash costs were fuel (11 per cent), repairs and maintenance (9 per cent) and interest (8 per cent) (Table 3-6).

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<sup>4</sup> To allow for comparison between years, the estimates of financial performance for the years 2002/03 to 2006/07, previously presented on an average per boat basis, have been presented on a whole of fishery basis.

Table 3-6 Financial performance in the SA Commercial Blue Crab Fishery active fleet, 2019/20 to 2021/22 (total fishery) <sup>a</sup>

|  | 2019/20       |                            | 2020/21       |                            | 2021/22       |                            |
|--|---------------|----------------------------|---------------|----------------------------|---------------|----------------------------|
|  | Fishery Total | Share of TBCC <sup>b</sup> | Fishery Total | Share of TBCC <sup>b</sup> | Fishery Total | Share of TBCC <sup>b</sup> |
| (1) Total Boat Gross Income                            | \$9,001,777   |                            | \$8,409,508   |                            | \$8,740,943   |                            |
| Variable Costs   |               |                            |               |                            |               |                            |
| Fuel   | \$503,642     | 10%                        | \$530,977     | 10%                        | \$617,610     | 11%                        |
| Repairs & Maintenance <sup>c</sup>                     | \$401,913     | 8%                         | \$438,956     | 8%                         | \$479,777     | 9%                         |
| Bait/Ice   | \$123,546     | 2%                         | \$134,934     | 3%                         | \$147,482     | 3%                         |
| Provisions   | \$27,342      | 1%                         | \$29,862      | 1%                         | \$32,639      | 1%                         |
| Labour - paid  | \$2,282,152   | 45%                        | \$2,462,702   | 47%                        | \$2,584,411   | 46%                        |
| (2) Labour - unpaid <sup>d</sup>                       | \$8,900       | 0%                         | \$9,604       | 0%                         | \$10,079      | 0%                         |
| Other  | \$1,733       | 0%                         | \$1,781       | 0%                         | \$1,895       | 0%                         |
| (3) Total Variable Costs                               | \$3,349,228   | 66%                        | \$3,608,815   | 68%                        | \$3,873,892   | 69%                        |
| Fixed Costs  |               |                            |               |                            |               |                            |
| Licence Fee  | \$359,047     | 7%                         | \$343,300     | 6%                         | \$343,723     | 6%                         |
| Insurance  | \$192,848     | 4%                         | \$198,233     | 4%                         | \$210,854     | 4%                         |
| (4) Interest   | \$440,468     | 9%                         | \$436,110     | 8%                         | \$442,060     | 8%                         |
| (5) Labour - unpaid <sup>d</sup>                       | \$126,022     | 2%                         | \$127,993     | 2%                         | \$130,714     | 2%                         |
| (6) Leasing  | \$342,734     | 7%                         | \$320,184     | 6%                         | \$332,803     | 6%                         |
| Legal & Accounting                                     | \$26,095      | 1%                         | \$26,823      | 1%                         | \$28,531      | 1%                         |
| Telephone etc.   | \$5,541       | 0%                         | \$5,696       | 0%                         | \$6,058       | 0%                         |
| Slipping & Mooring                                     | \$68,180      | 1%                         | \$70,083      | 1%                         | \$74,546      | 1%                         |
| Travel   | \$3,464       | 0%                         | \$3,561       | 0%                         | \$3,787       | 0%                         |
| Office & Admin   | \$140,845     | 3%                         | \$144,778     | 3%                         | \$153,996     | 3%                         |
| (7) Total Fixed Costs                                  | \$1,705,244   | 34%                        | \$1,676,762   | 32%                        | \$1,727,072   | 31%                        |
| (8) Total Boat Cash Costs (3 + 7)                      | \$5,054,472   | 100%                       | \$5,285,577   | 100%                       | \$5,600,964   | 100%                       |
| Boat Gross Margin (1 - 3)                              | \$5,652,549   |                            | \$4,800,692   |                            | \$4,867,052   |                            |
| (9) Total Unpaid Labour (2 + 5)                        | \$134,922     |                            | \$137,597     |                            | \$140,793     |                            |
| Gross Operating Surplus (1 - 8 + 9)                    | \$4,082,227   |                            | \$3,261,527   |                            | \$3,280,772   |                            |
| (10) Boat Cash Income (1 - 8)                          | \$3,947,305   |                            | \$3,123,930   |                            | \$3,139,979   |                            |
| (11) Depreciation                                      | \$679,121     |                            | \$740,508     |                            | \$804,131     |                            |
| (12) Boat Business Profit (10 - 11)                    | \$3,268,184   |                            | \$2,383,422   |                            | \$2,335,848   |                            |
| (13) Profit at Full Equity (12 + 4 + 6)                | \$4,051,386   |                            | \$3,139,717   |                            | \$3,110,712   |                            |
| Boat Capital   |               |                            |               |                            |               |                            |
| (14) Fishing Gear & Equip                              | \$7,370,574   |                            | \$8,036,811   |                            | \$8,727,316   |                            |
| Licence Value  | \$48,349,235  |                            | \$55,796,040  |                            | \$54,465,075  |                            |
| (15) Total Boat Capital                                | \$55,719,809  |                            | \$63,832,852  |                            | \$63,192,391  |                            |
| Rate of Return on Fishing Gear & Equip (13 / 14 * 100) | 55.0%         |                            | 39.1%         |                            | 35.6%         |                            |
| Rate of Return on Total Boat Capital (13 / 15 * 100)   | 7.3%          |                            | 4.9%          |                            | 4.9%          |                            |

<sup>a</sup> Estimates of financial performance for year 2019/20 to 2021/22 are based on the 2020 licence holder survey.

<sup>b</sup> Total boat cash costs.

<sup>c</sup> 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).

<sup>d</sup> 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 Commercial Blue Crab Fishery active fleet, 2021/22**  
(average per quota unit <sup>a</sup> and per Kg of Catch <sup>b</sup>)

|  | Per Quota Unit |                            | Per Kg of Catch |                            |
|--|----------------|----------------------------|-----------------|----------------------------|
|  | Fishery Total  | Share of TBCC <sup>c</sup> | Fishery Total   | Share of TBCC <sup>c</sup> |
| (1) Total Boat Gross Income                            | \$805.32       |                            | \$16.78         |                            |
| Variable Costs   |                |                            |                 |                            |
| Fuel   | \$56.90        | 11%                        | \$1.19          | 11%                        |
| Repairs & Maintenance <sup>d</sup>                     | \$44.20        | 9%                         | \$0.92          | 9%                         |
| Bait/Ice   | \$13.59        | 3%                         | \$0.28          | 3%                         |
| Provisions   | \$3.01         | 1%                         | \$0.06          | 1%                         |
| Labour - paid  | \$238.11       | 46%                        | \$4.96          | 46%                        |
| (2) Labour - unpaid <sup>e</sup>                       | \$0.93         | 0%                         | \$0.02          | 0%                         |
| Other  | \$0.17         | 0%                         | \$0.00          | 0%                         |
| (3) Total Variable Costs                               | \$356.91       | 69%                        | \$7.44          | 69%                        |
| Fixed Costs  |                |                            |                 |                            |
| Licence Fee  | \$31.67        | 6%                         | \$0.66          | 6%                         |
| Insurance  | \$19.43        | 4%                         | \$0.40          | 4%                         |
| (4) Interest   | \$40.73        | 8%                         | \$0.85          | 8%                         |
| (5) Labour - unpaid <sup>e</sup>                       | \$12.04        | 2%                         | \$0.25          | 2%                         |
| (6) Leasing  | \$30.66        | 6%                         | \$0.64          | 6%                         |
| Legal & Accounting                                     | \$2.63         | 1%                         | \$0.05          | 1%                         |
| Telephone etc.   | \$0.56         | 0%                         | \$0.01          | 0%                         |
| Slipping & Mooring                                     | \$6.87         | 1%                         | \$0.14          | 1%                         |
| Travel   | \$0.35         | 0%                         | \$0.01          | 0%                         |
| Office & Admin   | \$14.19        | 3%                         | \$0.30          | 3%                         |
| (7) Total Fixed Costs                                  | \$159.12       | 31%                        | \$3.31          | 31%                        |
| (8) Total Boat Cash Costs (3 + 7)                      | \$516.03       | 100%                       | \$10.75         | 100%                       |
| Boat Gross Margin (1 - 3)                              | \$448.41       |                            | \$9.34          |                            |
| (9) Total Unpaid Labour (2 + 5)                        | \$12.97        |                            | \$0.27          |                            |
| Gross Operating Surplus (1 - 8 + 9)                    | \$302.26       |                            | \$6.30          |                            |
| (10) Boat Cash Income (1 - 8)                          | \$289.29       |                            | \$6.03          |                            |
| (11) Depreciation                                      | \$74.09        |                            | \$1.54          |                            |
| (12) Boat Business Profit (10 - 11)                    | \$215.21       |                            | \$4.48          |                            |
| (13) Profit at Full Equity (12 + 4 + 6)                | \$286.60       |                            | \$5.97          |                            |
| Boat Capital   |                |                            |                 |                            |
| (14) Fishing Gear & Equip                              | \$804.06       |                            | \$16.75         |                            |
| Licence Value  | \$5,017.97     |                            | \$104.54        |                            |
| (15) Total Boat Capital                                | \$5,822.04     |                            | \$121.29        |                            |
| Rate of Return on Fishing Gear & Equip (13 / 14 * 100) | 35.6%          |                            | 35.6%           |                            |
| Rate of Return on Total Boat Capital (13 / 15 * 100)   | 4.9%           |                            | 4.9%            |                            |

<sup>a</sup> Calculated using sector total (Table 3-6) and total number of quota units in the fishery (10,854) (Table 3-5).

<sup>b</sup> Calculated using sector total (Table 3-6) and total catch in the fishery (521t) (Table 3-2).

<sup>c</sup> Total boat cash costs.

<sup>d</sup> 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).

<sup>e</sup> 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

## 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 slight rise in boat gross margin in 2021/22 (1 per cent) compared to the previous year due to the increase in total boat gross income and despite the increase in variable costs.

Gross operating surplus (GOS) was calculated by excluding imputed wages for operator and family members as a cost item. The aggregate GOS of all boats between 2020/21 and 2021/22 increased slightly (from \$3.26 million to \$3.28 million) (Table 3-6).

Boat cash income is measured as gross operating surplus with imputed wages (unpaid labour) included as cash costs. The aggregate boat cash income for the fishery as a whole also increased slightly between 2020/21 and 2021/22 from \$3.12 million to \$3.14 million.

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. In 2021/22, the total boat business profit was \$2.34 million, a 2 per cent decrease on 2020/21 (\$2.38 million) principally due to the increase in depreciation, and total costs.

Profit at full equity is a measure of the profitability of licence holders in the fishery, assuming that licence holders have full equity in the operation. It is a useful absolute measure of the economic performance of fishing firms. Profit at full equity in 2021/22 (\$3.11 million) was slightly lower than the previous year (\$3.14 million). However, significantly down from the year before (23 per cent lower than in 2019/20).

## Return to capital

There are a number of interpretations of the concept of return to total capital. For the purpose of this analysis it is appropriate to consider the capital as the investment employed by licence holders 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 on investment has been calculated as the profit at full equity as a percentage of the total capital employed.

The total investment in fishing gear and licences in the BCF in 2021/22 was estimated to be \$63.2 million. This includes the licence holder's estimate of the value of fishing licences (\$54.5 million) and estimated investment in boats and fishing gear (\$8.7 million).

The average return to capital for active fishers in the fishery for the period 2019/20 to 2021/22 is reported in Table 3-6. The rate of return to boat capital (i.e. fishing gear and equipment), 35.6 per cent in 2021/22, is significantly higher than the rate of return to total capital (4.9 per cent) because the latter includes the estimated licence value. The rate of return to total capital remained the same between 2020/21 and 2021/22 (4.9 per cent). However, was lower than the estimates for 2019/20 (7.3 per cent) and 2018/19 (11.4 per cent). When considering the historically low interest rates seen throughout this period, the rate of return remains high.

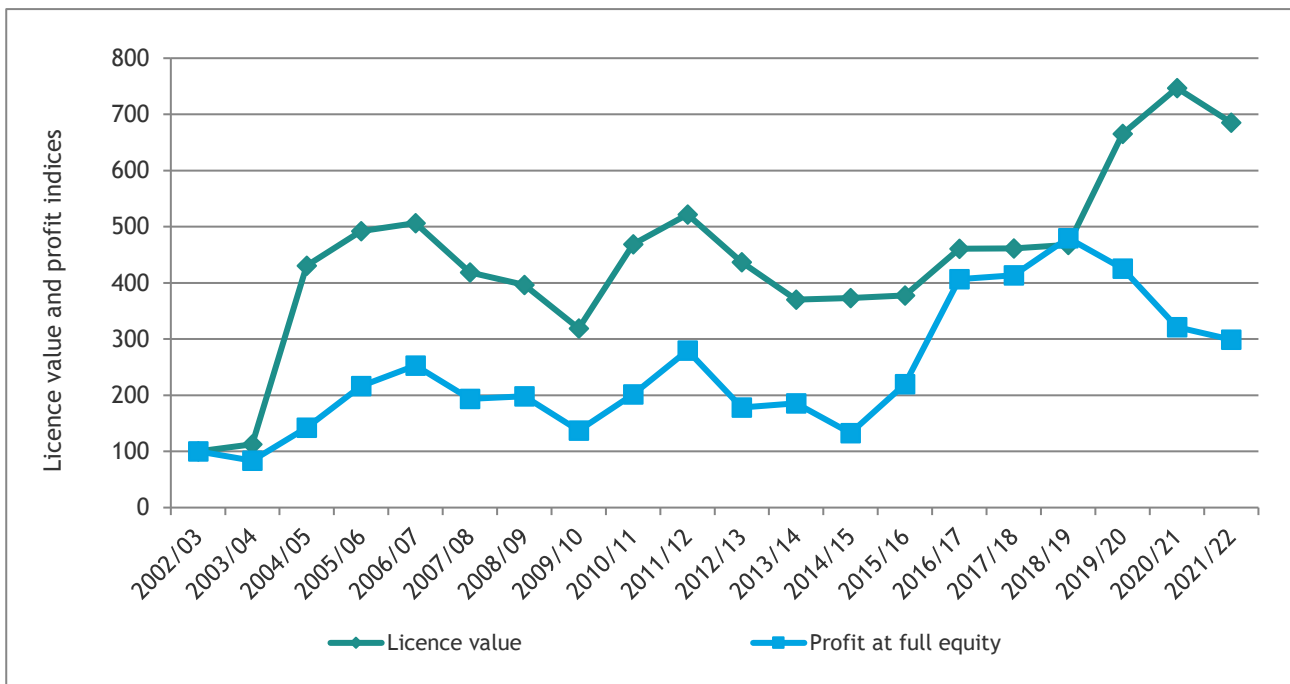
## Licence values

Since 2002/03 there has been considerable interest in 'marginal' units of quota, particularly that held in the Marine Scalefish sector, which has given rise to a substantial increase in the cost of traded quota.

Licence values for the period 2002/03 to 2003/04 (reported in Appendix 3) were calculated on the basis of the 1997/98 survey values and adjusted in line with changes in GVP in the fishery, to reflect changes in the profitability of holding a licence. It is understood the demand for quota and the subsequent increase in the price of quota has resulted from operators in other fishing sectors looking to better utilise their existing investments in vessel, gear and available labour. Because the opportunity cost of this ‘off-season’ capital and labour is low, it enables the operator to offer a higher price for quota than would otherwise be the case. However, the rate of return to total capital (assuming this value for quota units) was around 4.9 per cent per annum which seems better than most other fisheries in SA. So, despite the paucity of actual trades, these appear to be realistic market values, not just high expectations.

This situation has created an interesting effect. While changes in the profitability of the total fishery may have warranted only relatively small changes in the value of licences, opportunities identified by individual operators have pushed up the price of quota significantly. This is reflected in the large increase in licence value between 2003/04 and 2004/05, 2009/10 and 2010/11, and 2018/19 and 2019/20 (see Figure 3-3).

Figure 3-3 Licence value and profit indices for the SA Commercial Blue Crab Fishery, 2002/03 to 2021/22 (2002/03=100)



Source: Table 3-6, Appendix Table 3-1 to Appendix Table 3-6.

It is worth noting profitability has decreased since 2018/19. Prior to 2019/20 licence values in non-survey years are adjusted using changes in GVP. Therefore, estimated changes in licence value in these years may not fully reflect actual changes. As such, the large increase recorded in 2019/20 reflects the current estimates of licence holders, estimates that have not been available since the previous survey three years ago. To overcome this issue licence value for 2020/21 and 2021/22 were updated based on changes in profitability (profit at full equity) over the past five years.

The value of licences represents a significant proportion of the capital used by each licence holder in the fishery. As noted above, the reported licence value for 2021/22 in Table 3-6 is based on the licence holders’ estimate of the value of their licence, provided in the most recent 2020 survey responses.

Since there have been limited transfers of full licences in recent years and the current market value of licences is uncertain, a sensitivity analysis was undertaken to estimate the rate of return to capital for a range of licence values in the fishery. The results of the licence value sensitivity analysis are presented in Table 3-8.

**Table 3-8 Sensitivity of rate of return to changes in licence value, 2021/22<sup>a</sup>**

|  |         |         |         |
|--|---------|---------|---------|
| Estimated Licence Value (\$/unit of quota) | \$2,509 | \$5,018 | \$7,527 |
| Rate of Return to Total Capital (%)        | 8.7%    | 4.9%    | 3.4%    |

<sup>a</sup> Based on the licence value estimated for 2021/22 and values 50 per cent above and below this estimate.

Source: BDO EconSearch analysis

Based on the costs and returns shown for the year 2021/22 in Table 3-7, a licence value in the fishery of \$7,527 per unit of quota (approximately 50 per cent above the licence value estimated for 2021/22) would mean an annual return to the total asset of 3.4 per cent. Conversely, a licence value of \$2,509 per unit of quota (approximately 50 per cent below the licence value estimated for 2021/22) would equate to an annual return to the total asset of 8.7 per cent (Table 3-8). This implies that the licence holders' estimates of licence value are realistic. This is important because licence value affects some of the other indicators.

### 3.6. State and Regional Economic Contribution

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

#### 3.6.1. Measuring direct and flow-on effects

Estimates of the direct economic contribution of the SA Commercial Blue Crab 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 practicable method for measuring economic contributions at regional and state levels.

A single input-output model was used for this study. As operators in the BCF are spread between Spencer Gulf and Gulf St Vincent, economic contributions were based on a model for SA prepared for the Department of Premier and Cabinet (DPC) (BDO EconSearch 2021).

In order to compile a representative cost structure for the fishing sector, costs were derived from data provided by operators in the fishery in a financial survey for 2019/20 and updated for 2021/22 as described above. On an item-by-item basis, the expenditures were allocated between those occurring in SA and those

goods and services imported from outside the state. These data were then incorporated into the state input-output model to estimate the flow-on or indirect economic contributions of the BCF in SA in 2021/22.

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 were derived from the 2020 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 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** is a measure of the net contribution of an activity to the state economy. Contribution to GSP 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 as a measure of economic contribution avoids the problem of double counting that may arise from using value of output for this purpose.

### 3.6.2. Economic contributions at the state and regional levels

Estimates of the economic contribution generated in 2021/22 by the Blue Crab fishing industry in SA are outlined in Table 3-9. The direct contribution measures fishing and downstream activities (fish 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 effect.

#### Value of output

The value of output generated directly in SA by Blue Crab fishing enterprises summed to \$8.7 million in 2021/22 (Table 3-9), while output generated in SA by associated downstream activities (processing, transport, retail/food services and capital expenditure) summed to \$11.9 million.

Flow-ons to other sectors of the state economy added another \$24.7 million in output. The sectors most affected were the business services (\$3.5 million), manufacturing (\$3.4 million) and trade (\$2.9 million) sectors. The total output impact (direct plus indirect) was estimated to be \$45.4 million in 2021/22. Total value of output needs to be used with care as it includes elements of double counting.

**Table 3-9 Economic contribution of the Blue Crab fishing industry on the South Australian economy, 2021/22**

| Sector                            | Output      |             | Employment <sup>a</sup> |             | Household Income |             | Contribution to GSP |             |
|-----------------------------------|-------------|-------------|-------------------------|-------------|------------------|-------------|---------------------|-------------|
|                                   | (\$m)       | %           | (fte jobs)              | %           | (\$m)            | %           | (\$m)               | %           |
| <b>Direct effects</b>             |             |             |                         |             |                  |             |                     |             |
| Fishing                           | 8.7         | 19%         | 29                      | 13%         | 2.7              | 18%         | 6.7                 | 25%         |
| Processing                        | 1.3         | 3%          | 4                       | 2%          | 0.2              | 1%          | 0.4                 | 2%          |
| Transport                         | 0.4         | 1%          | 2                       | 1%          | 0.2              | 1%          | 0.2                 | 1%          |
| Retail                            | 3.8         | 8%          | 28                      | 13%         | 1.7              | 11%         | 2.2                 | 8%          |
| Food services                     | 6.0         | 13%         | 57                      | 25%         | 2.4              | 16%         | 3.4                 | 13%         |
| Capital expenditure <sup>b</sup>  | 0.3         | 1%          | 1                       | 1%          | 0.1              | 1%          | 0.1                 | 0%          |
| <b>Total Direct <sup>c</sup></b>  | <b>20.6</b> | <b>45%</b>  | <b>122</b>              | <b>54%</b>  | <b>7.3</b>       | <b>48%</b>  | <b>13.0</b>         | <b>48%</b>  |
| <b>Flow-on effects</b>            |             |             |                         |             |                  |             |                     |             |
| Trade                             | 2.9         | 6%          | 18                      | 8%          | 1.2              | 8%          | 1.7                 | 6%          |
| Manufacturing                     | 3.4         | 8%          | 10                      | 4%          | 0.7              | 4%          | 1.0                 | 4%          |
| Business Services                 | 3.5         | 8%          | 21                      | 9%          | 1.6              | 11%         | 1.9                 | 7%          |
| Transport                         | 1.6         | 4%          | 6                       | 3%          | 0.5              | 3%          | 0.7                 | 3%          |
| Other Sectors                     | 13.4        | 29%         | 49                      | 22%         | 3.8              | 25%         | 8.6                 | 32%         |
| <b>Total Flow-on <sup>c</sup></b> | <b>24.7</b> | <b>55%</b>  | <b>104</b>              | <b>46%</b>  | <b>7.8</b>       | <b>52%</b>  | <b>13.9</b>         | <b>52%</b>  |
| <b>Total <sup>c</sup></b>         | <b>45.4</b> | <b>100%</b> | <b>225</b>              | <b>100%</b> | <b>15.0</b>      | <b>100%</b> | <b>26.9</b>         | <b>100%</b> |
| Total/Direct                      | 2.2         | -           | 1.9                     | -           | 2.1              | -           | 2.1                 | -           |
| Total/Tonne                       | \$87,000    | -           | 0.43                    | -           | \$28,800         | -           | \$51,500            | -           |

<sup>a</sup> Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 27 full-time and 6 part-time jobs, that is, 32 jobs in aggregate, which was estimated to be equal to 29 fte jobs.

<sup>b</sup> Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

<sup>c</sup> Totals may not sum due to rounding.

Source: BDO EconSearch analysis

### Employment and household income

In 2021/22, the SA BCF was responsible for the direct employment of around 29 full-time equivalents (fte) and downstream activities created employment of 93 fte jobs state-wide. Flow-on business activity was estimated to generate a further 104 fte jobs state-wide. These state-wide jobs were concentrated in the business services (21) and trade (18) sectors. The total employment contribution was estimated to be 225 fte jobs.

Personal income of \$2.7 million was earned in the fishing sector (wages of employees and estimated drawings by owner/operators) and \$4.6 million in downstream activities in SA. An additional \$7.8 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 \$15.0 million.

### Contribution to GSP

As noted above, contribution to GSP is measured as value of output less the cost of goods and services (including imports) used in producing the output. In 2021/22, total Blue Crab fishing industry related contribution to GSP in SA was \$26.9 million, \$6.7 million generated by fishing directly, \$6.3 million generated by downstream activities and \$13.9 million generated in other sectors of the state economy.

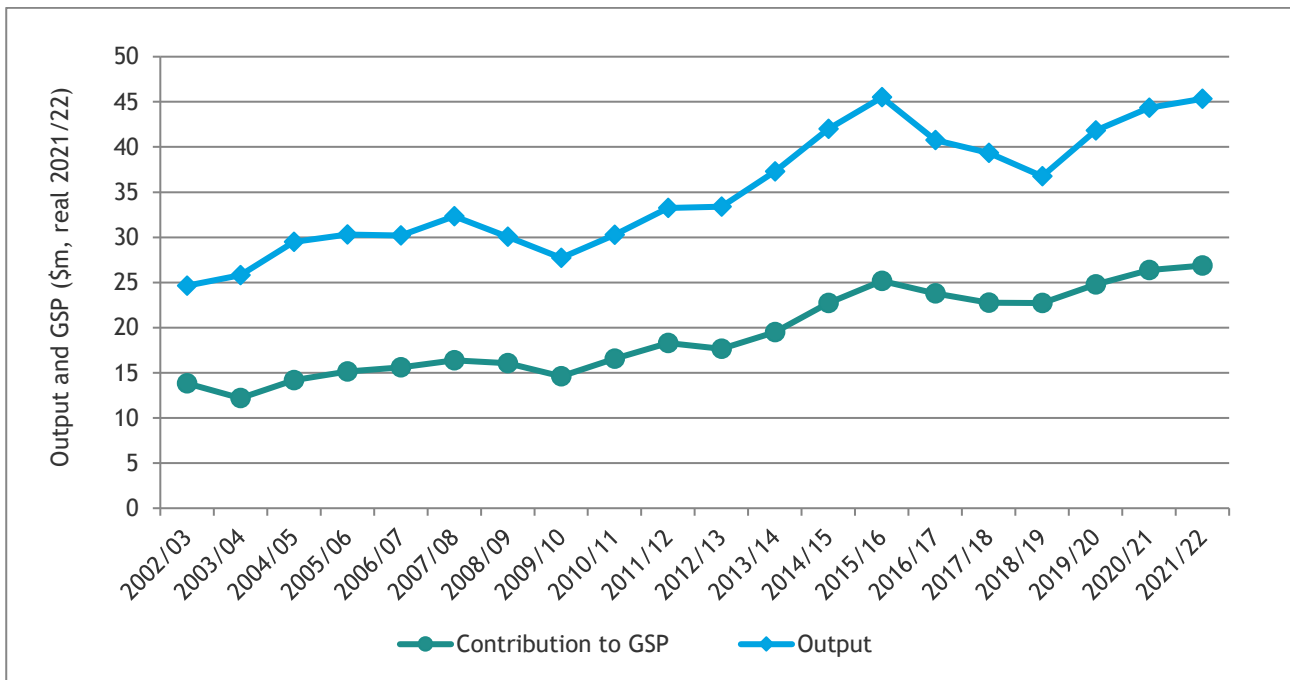
### Total contributions over time

Figure 3-4 and Figure 3-5 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). 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 attributable to sampling variability.

There has been an overall increase in the output and GSP contribution of the fishery on the SA economy between 2002/03 to 2021/22, as illustrated in Figure 3-4. This increase can be attributed to the significant increase in value of catch over the period (Table 3-2). This increase also reflects the increased margins earned by associated downstream sectors (processing, retail trade and food services).

Despite fluctuations, the total employment contribution has followed an increasing trend over the period 2002/03 to 2021/22 (Figure 3-5). This can be attributed to the increased activity of associated downstream sectors (processing, retail trade and food service sectors).

**Figure 3-4** Total gross state product and output contribution of the SA Commercial Blue Crab Fishery on the South Australian economy, 2002/03 to 2021/22 <sup>a,b</sup>

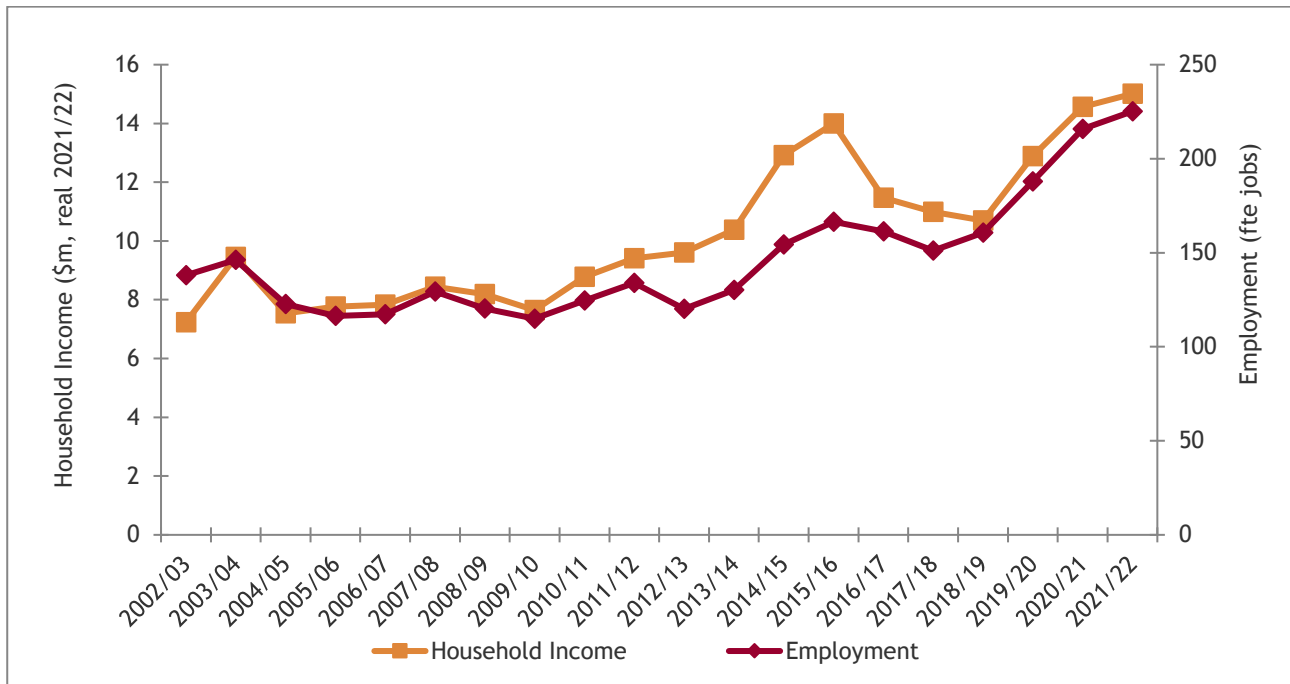


<sup>a</sup> Monetary values have been converted to 2021/22 dollars using the Adelaide CPI (ABS 2022a).

<sup>b</sup> Values for 2019/20 and 2020/21 have been revised using updated information received in 2021/22.

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

Figure 3-5 Total employment and household income contribution of the SA Commercial Blue Crab Fishery on the South Australian economy, 2002/03 to 2021/22 <sup>a</sup>



<sup>a-b</sup> See notes for Figure 3-4.

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. NER<sup>5</sup> can also be defined as the difference between the price of a good produced using a natural resource and the unit costs of turning that natural resource into the good. In this case the natural resource is the BCF and the good produced is the landed Blue Crab.

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.

<sup>5</sup> Net economic return (NER) 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 NER, 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 NER.



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 BCF over the period 2002/03 to 2021/22 is outlined in Table 3-10. NER has fluctuated over the last 20 years but increased overall. Between 2002/03 and 2021/22 NER increased from \$141,000 to \$2.2 million, mainly the result of increases in price and, hence, income over the same period. NER in 2021/22 (\$2.2 million) was slightly lower than 2020/21 (\$2.5 million), the third consecutive year which NER has decreased. It should be noted that in the current economic climate, NER would likely be higher than shown in Table 3-10. This is due to the opportunity cost of capital falling below what is estimated with the 5 per cent rate of return on government bonds which is applicable across the time period.

Table 3-10 NER<sup>a</sup> in the SA Commercial Blue Crab Fishery, 2002/03 to 2021/22 (\$'000)<sup>b</sup>

|         | Gross Income | Less Labour | Less Cash Costs | Less Depreciation | Less Opportunity Cost of Capital (@10%) | NER   |
|---------|--------------|-------------|-----------------|-------------------|---|-------|
| 2002/03 | 5,033        | 2,916       | 1,455           | 286               | 234                                     | 141   |
| 2003/04 | 5,243        | 2,928       | 1,520           | 317               | 262                                     | 216   |
| 2004/05 | 5,033        | 1,664       | 2,957           | 584               | 573                                     | -744  |
| 2005/06 | 7,252        | 2,012       | 2,836           | 548               | 540                                     | 1,315 |
| 2006/07 | 7,662        | 2,122       | 2,598           | 501               | 498                                     | 1,942 |
| 2007/08 | 7,506        | 2,048       | 2,817           | 758               | 399                                     | 1,484 |
| 2008/09 | 6,969        | 2,000       | 2,485           | 655               | 343                                     | 1,487 |
| 2009/10 | 5,424        | 1,645       | 2,232           | 454               | 246                                     | 847   |
| 2010/11 | 5,951        | 1,826       | 1,392           | 1,220             | 612                                     | 902   |
| 2011/12 | 6,620        | 1,913       | 1,388           | 1,145             | 575                                     | 1,598 |
| 2012/13 | 6,575        | 1,843       | 1,402           | 1,112             | 558                                     | 1,093 |
| 2013/14 | 6,988        | 2,135       | 2,079           | 844               | 640                                     | 1,290 |
| 2014/15 | 7,033        | 2,466       | 2,277           | 914               | 693                                     | 684   |
| 2015/16 | 8,269        | 2,681       | 2,325           | 978               | 742                                     | 1,543 |
| 2016/17 | 9,344        | 1,937       | 2,021           | 1,159             | 594                                     | 3,633 |
| 2017/18 | 9,357        | 1,869       | 1,963           | 1,228             | 629                                     | 3,668 |
| 2018/19 | 10,074       | 1,826       | 1,969           | 1,293             | 663                                     | 4,324 |
| 2019/20 | 9,842        | 2,643       | 2,028           | 743               | 806                                     | 3,623 |
| 2020/21 | 8,945        | 2,766       | 2,052           | 788               | 855                                     | 2,484 |
| 2021/22 | 8,741        | 2,725       | 2,102           | 804               | 873                                     | 2,237 |

<sup>a</sup> Adjusted for sample bias.

<sup>b</sup> This table presents NER in real 2021/22 dollars. Nominal NER is presented in Appendix 4. Values have been converted to 2020/21 dollars using the Adelaide CPI (ABS 2022a).

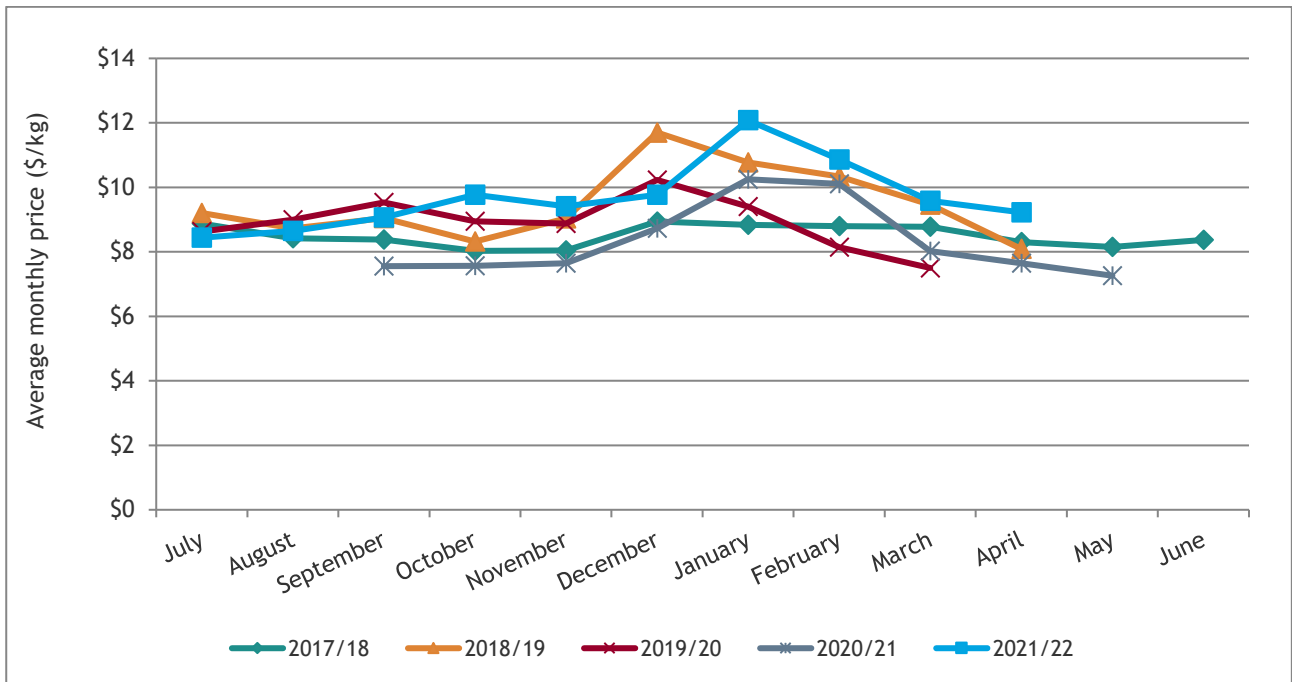
Source: BDO EconSearch analysis

## 4. OTHER INDICATORS

### 4.1. Average Monthly Prices for Blue Crab

An outline of the seasonality of Blue Crab prices in SA (by month) for the period 2002/03 to 2021/22 is provided in Table 4-1 and for the last 5 years in Figure 4-1. Within each financial year, beach prices in SA tend to peak in December and trough in March to November, corresponding with a period of peak supply. As discussed in Section 3.2, these prices are likely to underestimate the average price received by fishers as higher prices are realised in interstate markets.

Figure 4-1 Average monthly beach prices for Blue Crabs, South Australia, 2017/18 to 2021/22 <sup>a</sup>



<sup>a</sup> Nominal prices.

Source: SARDI Aquatic Sciences

Table 4-1 Average monthly beach prices for Blue Crabs, South Australia, 2002/03 to 2021/22 <sup>a</sup>

|         | Average Monthly Price (\$/kg) |        |           |         |          |          |         |          |       |       |       |       | Weighted Average Annual Price |
|---------|-------------------------------|--------|-----------|---------|----------|----------|---------|----------|-------|-------|-------|-------|-------------------------------|
|         | July                          | August | September | October | November | December | January | February | March | April | May   | June  |                               |
| 2002/03 | 6.69                          | 7.17   | 7.17      | 7.65    | 8.44     | 7.02     | 6.53    | 5.37     | 5.53  | 5.46  | 6.12  | 6.27  | 6.13                          |
| 2003/04 | 7.03                          | 7.36   | 6.69      | 6.62    | 8.00     | 7.72     | 5.07    | 4.62     | 4.70  | 5.67  | 6.46  | 6.82  | 5.95                          |
| 2004/05 | 6.76                          | 6.48   | 6.37      | 7.15    | 8.21     | 9.79     | 6.96    | 6.20     | 6.04  | 6.49  | 7.72  | 7.83  | 5.68                          |
| 2005/06 | 8.18                          | 8.20   | 7.68      | 9.32    | 10.41    | 12.50    | 6.03    | 6.87     | 6.11  | 7.30  | 8.76  | 7.05  | 8.08                          |
| 2006/07 | 8.19                          | 7.51   | 8.46      | 9.12    | 10.33    | 11.59    | 9.01    | 6.90     | 7.68  | 8.81  | 10.59 | 9.22  | 8.84                          |
| 2007/08 | 8.06                          | 9.33   | 9.17      | 10.00   | 10.83    | 12.75    | 9.38    | 7.96     | 6.57  | 6.03  | 8.64  | 11.25 | 8.80                          |
| 2008/09 | 7.90                          | 10.09  | 5.90      | 11.75   | 7.91     | 14.29    | 9.14    | 7.40     | 6.16  | 8.69  | 8.76  | 6.81  | 7.78                          |
| 2009/10 | 9.09                          | 6.91   | 7.29      | 5.19    | 8.58     | 12.98    | 8.34    | 7.23     | 7.28  | 7.82  | 7.01  | 7.22  | 7.48                          |
| 2010/11 | 6.93                          | 7.67   | 10.42     | 7.18    | 11.21    | 13.39    | 7.36    | 5.61     | 6.62  | 7.13  | 7.56  | 6.40  | 7.21                          |
| 2011/12 | 6.12                          | 6.40   | 11.03     | 8.87    | 8.27     | 13.13    | 7.00    | 6.77     | 12.08 | 12.61 | 7.87  | 5.45  | 8.17                          |
| 2012/13 | 6.36                          | 7.52   | 4.09      | 6.76    | 7.32     | 7.88     | 8.48    | 6.22     | 6.55  | 6.64  | 6.21  | 5.53  | 6.45                          |
| 2013/14 | 6.75                          | 6.97   | 7.02      | 7.51    | 7.67     | 8.79     | 7.53    | 7.15     | 7.27  | 7.66  | 7.47  | 8.34  | 7.39                          |
| 2014/15 | 7.25                          | 7.06   | 7.15      | 7.38    | 7.48     | 8.12     | 7.25    | 7.09     | 7.45  | 7.96  | 7.79  | 7.53  | 7.38                          |
| 2015/16 | 7.93                          | 8.22   | 8.26      | 8.10    | 7.97     | 9.03     | 7.97    | 7.49     | 7.65  | 9.66  | 7.83  | 7.86  | 8.01                          |
| 2016/17 | 7.76                          | 8.09   | 7.93      | 7.82    | 8.42     | 8.79     | 8.83    | 9.00     | 7.98  | 8.23  | 7.60  | 7.74  | 8.18                          |
| 2017/18 | 8.88                          | 8.42   | 8.38      | 8.03    | 8.04     | 8.94     | 8.84    | 8.80     | 8.78  | 8.30  | 8.15  | 8.37  | 8.48                          |
| 2018/19 | 9.20                          | 8.73   | 9.05      | 8.32    | 9.04     | 11.70    | 10.77   | 10.34    | 9.46  | 8.09  | -     | -     | 9.25                          |
| 2019/20 | 8.63                          | 9.00   | 9.53      | 8.95    | 8.88     | 10.23    | 9.40    | 8.14     | 7.50  | -     | -     | -     | 8.59                          |
| 2020/21 | -                             | -      | 7.56      | 7.57    | 7.65     | 8.73     | 10.25   | 10.11    | 8.02  | 7.65  | 7.26  | -     | 8.22                          |
| 2021/22 | 8.44                          | 8.65   | 9.07      | 9.77    | 9.41     | 9.77     | 12.08   | 10.86    | 9.58  | 9.22  | -     | -     | 9.63                          |

<sup>a</sup> Nominal prices.

Source: SARDI Aquatic Sciences

## 4.2. External Factors Influencing the Economic Contribution of the Commercial Blue Crab 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.

### 4.2.1. Stock assessment

The status of the SA BCF is measured against performance indicators set out in the management plan (PIRSA 2020). For the latest fishery assessment report see (Beckmann and Hooper 2022).

### 4.2.2. GSV closure fishing trial

As well as spatial closures, the BCF is also subject to temporal closures. Spencer Gulf is closed from 21 December until 19 February each year. Licence holders are able to take advantage of higher prices in the lead up to Christmas. Gulf St Vincent is closed from 1 November until 15 January. Given a number of strict conditions, the GSV closure was modified for 2015/16 to 2019/20 and extended to include 2020/21 to allow a temporary fishing trial during the closure period. This enabled GSV fishers to also take advantage of selling product in the lead up to Christmas.

### 4.2.3. Commonwealth export approval

In 2004 the then Department of Sustainability, Environment, Water, Population and Communities conducted an assessment of the sustainability of the BCF. The assessment covered both the Marine Scalefish sector and the pot sector of the fishery in both Spencer Gulf and Gulf St Vincent. The 2004 assessment found that the fishery is operating in accordance with management practices and is unlikely to have an unsustainable impact on the ecosystem or target stock in the short to medium term (DEH 2004).

Currently, the Department of the Environment and Energy is required by the Commonwealth Environment Protection and Biodiversity Conservation (EPBC) Act (1999) to assess the fishery's management framework to determine whether to exempt the fishery from export controls and protected species permit requirements for individual licence holders. In 2004 the BCF was accredited to be exempt from the EPBC Act for a period of five years. The fishery was re-assessed in April 2010 for another five years and again in November 2015. It is now exempt until November 2025.

## 4.3. Contribution to the Community

In addition to the economic contribution made to the regional and state economies (Section 3.6), the BCF also contributes to the social, environmental and heritage values of the region - through involvement in community-support activities and contribution to the provision, maintenance and expansion of local and regional services and businesses.

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 (2022b).

## 4.4. Social Indicators

In 2014, 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 (2022b).

## 5. ECONOMIC TRENDS IN THE FISHERY

The BCF comprises two zones, the Spencer Gulf and Gulf St Vincent fishing zones. An annual TACC or quota is determined for the fishery for the 12-month period from 1 July to 30 June, with separate quota units allocated for each fishing zone. Almost all of the quota units (99 per cent) are held by BCF licence holders (also referred to as ‘pot fishers’), with the remainder held by some Marine Scalefish Fishery (MSF) licence holders.

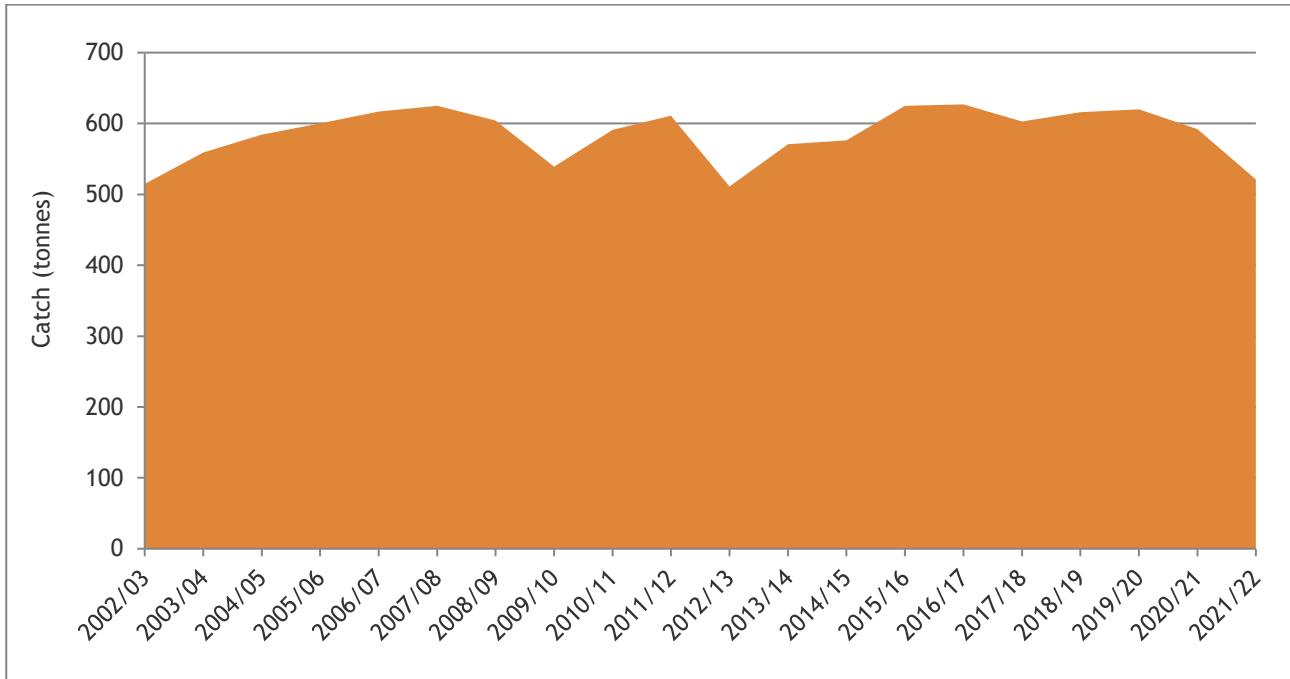
Blue Crab may also be taken from State waters within three nautical miles off the coast west of longitude 135°E. This ‘West Coast’ region is not subject to quota management arrangements and is fished by MSF licence holders (Noell et al. 2014). The catch is not subject to the same management conditions as the catch which is taken in the gulfs and, as such, has been excluded from this report but included in the Marine Scalefish fishery Economic Indicators report (BDO EconSearch 2022a).

### 5.1. Catch and Gross Value of Production

Figure 5-1 indicates that, despite fluctuations, the total catch of Blue Crabs in SA has increased slightly over the period 2002/03 (515t) to 2021/22 (521t). The total GVP for the BCF for the 20-year period 2002/03 to 2021/22 is illustrated in Figure 5-2. The real value of catch in the fishery increased significantly over the 20 years, from \$5.0 million in 2002/03, to \$8.7 million in 2021/22. The increase in GVP is a result of an increase in price (72 per cent real increase) (Figure 3-1).

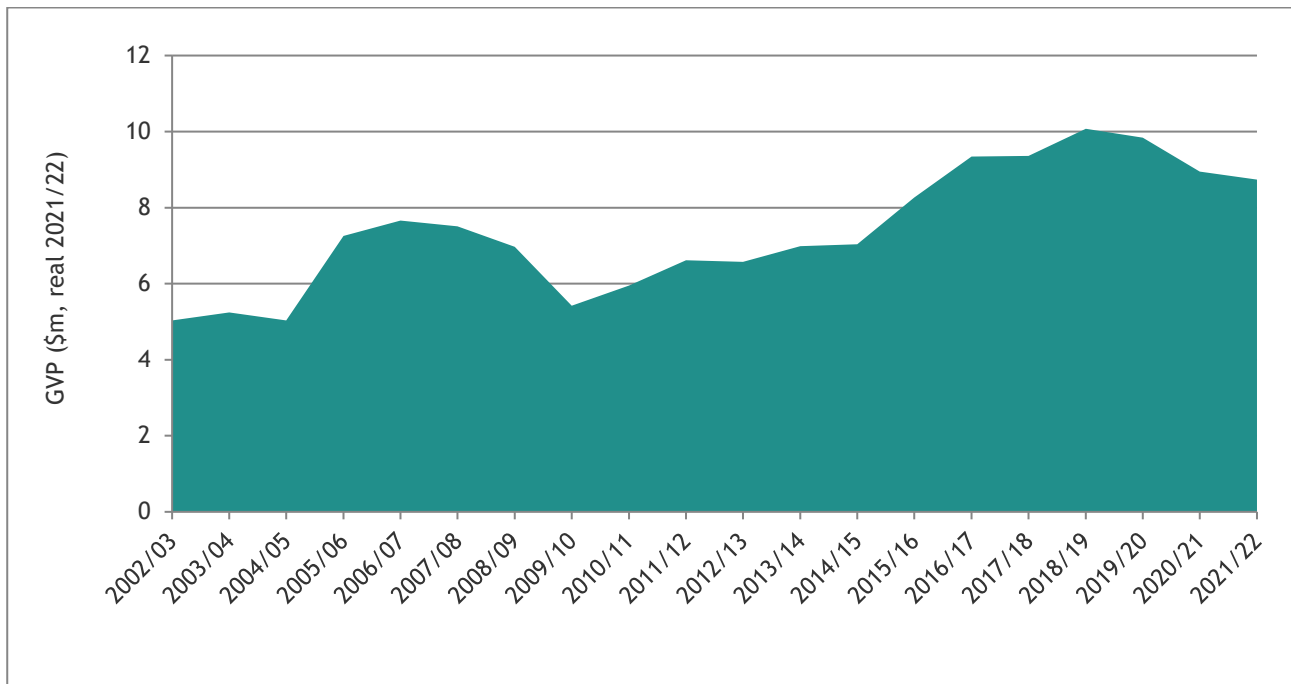
The nominal price of Blue Crabs between 2002/03 to 2021/22 followed an increasing trend overall. The 174 per cent increase in nominal price over the period 2002/03 to 2021/22 is equivalent to a 72 per cent rise in the real price (that is the nominal price adjusted for inflation) (Figure 3-2).

Figure 5-1 SA Commercial Blue Crab Fishery catch, 2002/03 to 2021/22



Source: Table 3-2

Figure 5-2 SA Commercial Blue Crab Fishery GVP, 2002/03 to 2021/22 <sup>a</sup>



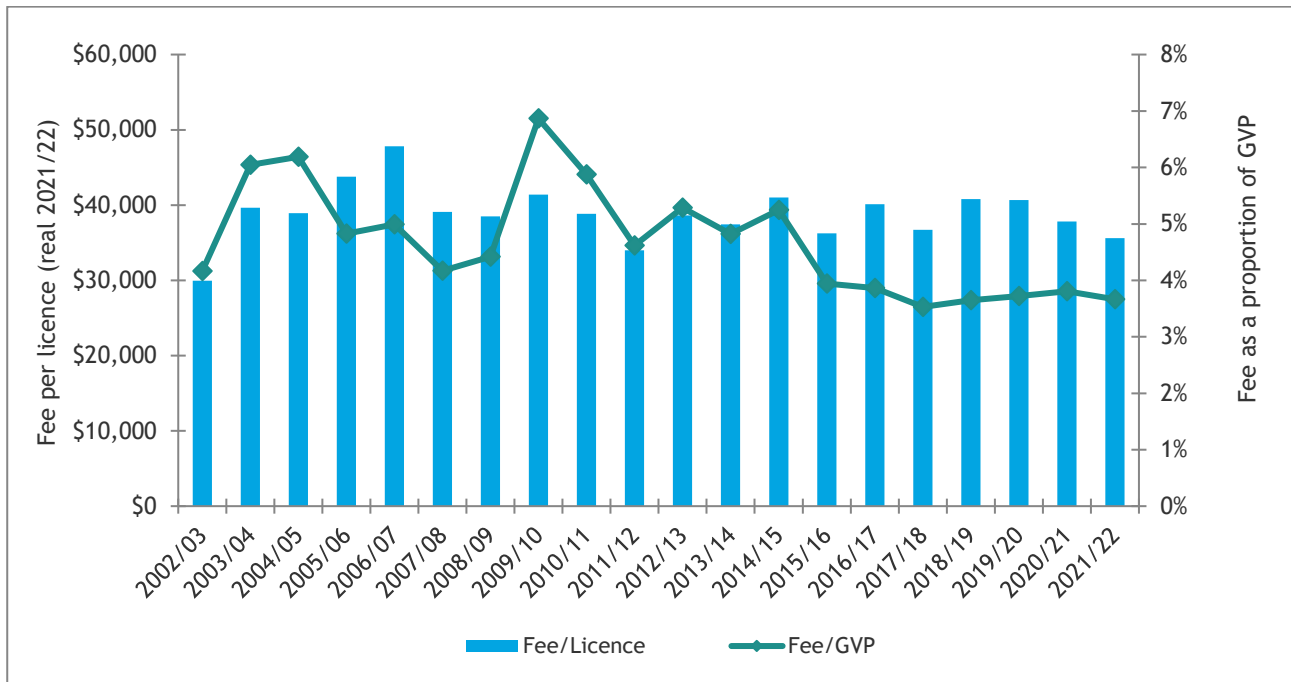
<sup>a</sup> Estimates of GVP are expressed in real 2021/22 terms.

Source: Table 3-2

## 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. Licence fees as a percentage of GVP fluctuated over the 20 years but generally followed a declining trend. From 2002/03 to 2021/22 licence fees as a percentage of GVP fell from 4.2 per cent in 2002/03 to 3.7 per cent in 2021/22. This change was a result of an increase in fishery GVP despite an increase in the total cost of management of the fishery. Average real management fees per licence was \$29,941 in 2002/03, increased across the 20 years to be \$35,609 in 2021/22, a result of an increase in real aggregate licence fees.

Figure 5-3 Management fee per licence holder and as a proportion of GVP, SA Commercial Blue Crab Fishery, 2002/03 to 2021/22 <sup>a, b</sup>



<sup>a</sup> Estimates of the fee per licence holder are expressed in real 2021/22 terms.  
<sup>b</sup> Excludes catch of Blue Crabs from the West Coast by Marine Scalefish licence holders.

Source: Table 3-4

### 5.3. Financial Performance Indicators

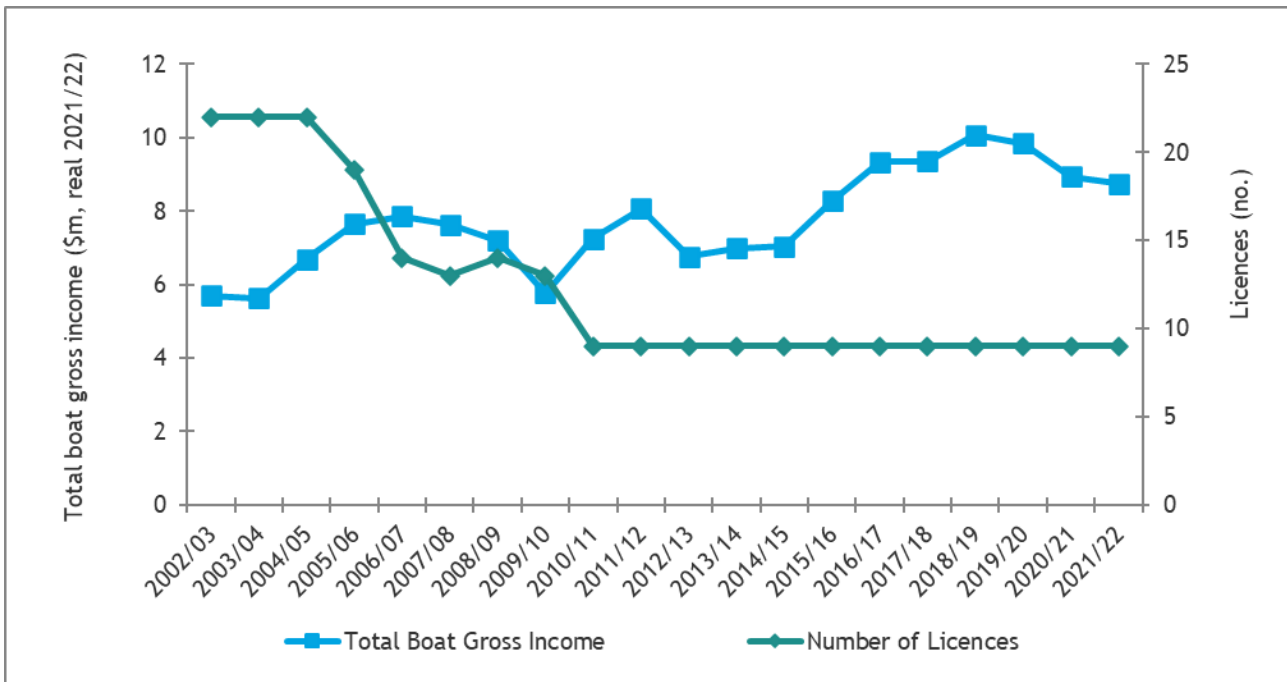
#### Total income

Total income and total number of licences in the fishery for the period 2002/03 to 2021/22 are illustrated in Figure 5-4. The total number of licences in the fishery declined steadily, from 22 in 2002/03 to 9 in 2021/22, the result of licence amalgamations and buybacks. The total real fishery income (GVP) increased over the same period reflecting an increase in price in the fishery.

#### 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 are fuel, repairs and maintenance, interest charges and licence fees (Figure 5-5).

Figure 5-4 Fishery income and number of licences in the SA Commercial Blue Crab Fishery, 2002/03 to 2021/22 <sup>a,b</sup>

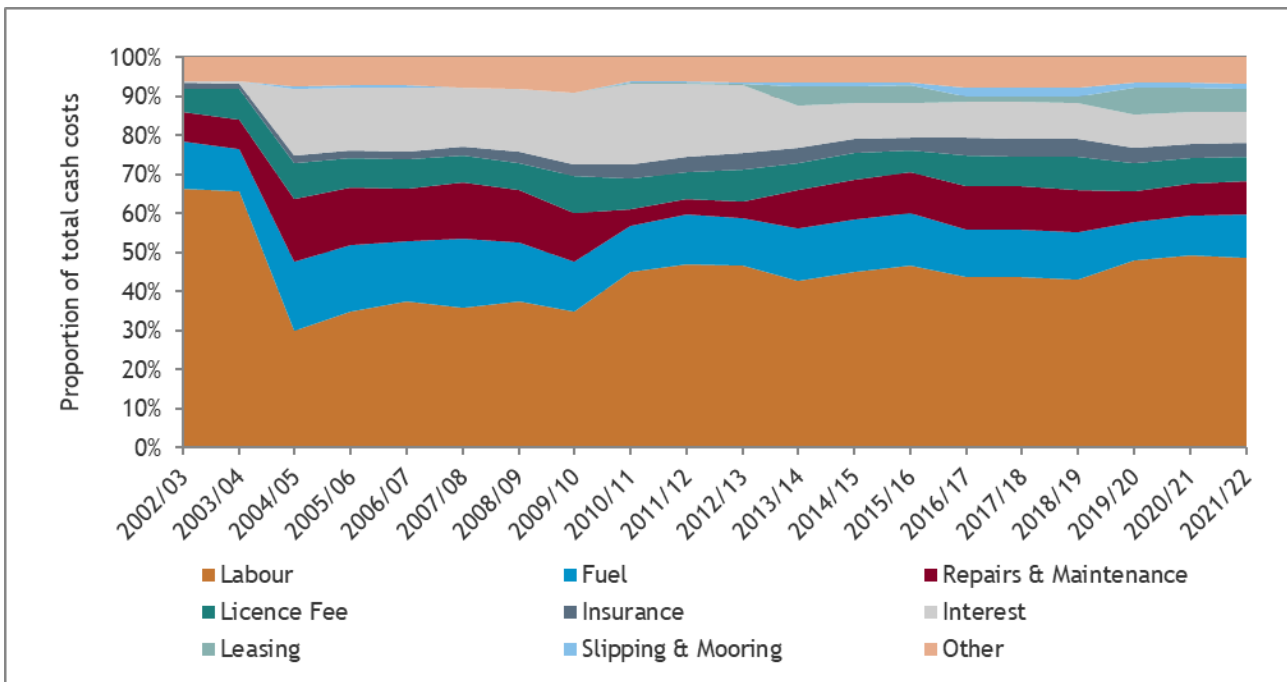


<sup>a</sup> Estimates of total boat gross income are expressed in real 2021/22 terms.

<sup>b</sup> Estimates from 2010/11 onwards relate to the pot sector only.

Source: Table 3-6 and Appendix Table 3-1 to Appendix Table 3-6.

Figure 5-5 Cost shares in the SA Commercial Blue Crab Fishery, 2002/03 to 2021/22 <sup>a,b</sup>



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

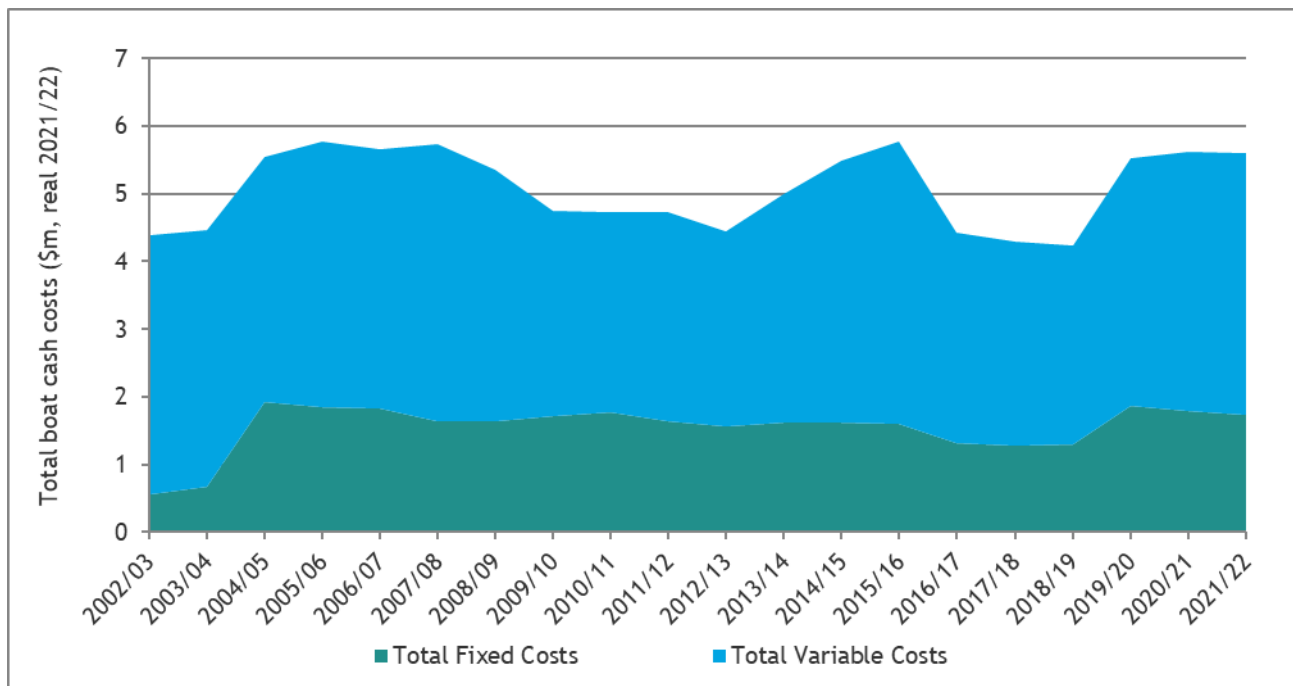
<sup>b</sup> Estimates from 2010/11 onwards relate to the pot sector only.

Source: Table 3-6 and Appendix Table 3-1 to Appendix Table 3-6.



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. Total variable costs have generally followed an increasing trend over the period 2002/03 to 2021/22. As would be expected, total fixed costs have fluctuated much less from year to year, although increased significantly in 2004/05 reflecting the higher interest charges arising from increased borrowings for new boats and quota. These increased again in 2019/20, as a result of the effects of COVID-19 through fishery and market closures driving up costs and driving down efficiency.

Figure 5-6 Total costs in the SA Commercial Blue Crab Fishery, 2002/03 to 2021/22 <sup>a,b</sup>



<sup>a</sup> Estimates of total costs are expressed in real 2021/22 terms.

<sup>b</sup> Estimates from 2010/11 onwards relate to the pot sector only.

Source: Table 3-6 and Appendix Table 3-1 to Appendix Table 3-6.

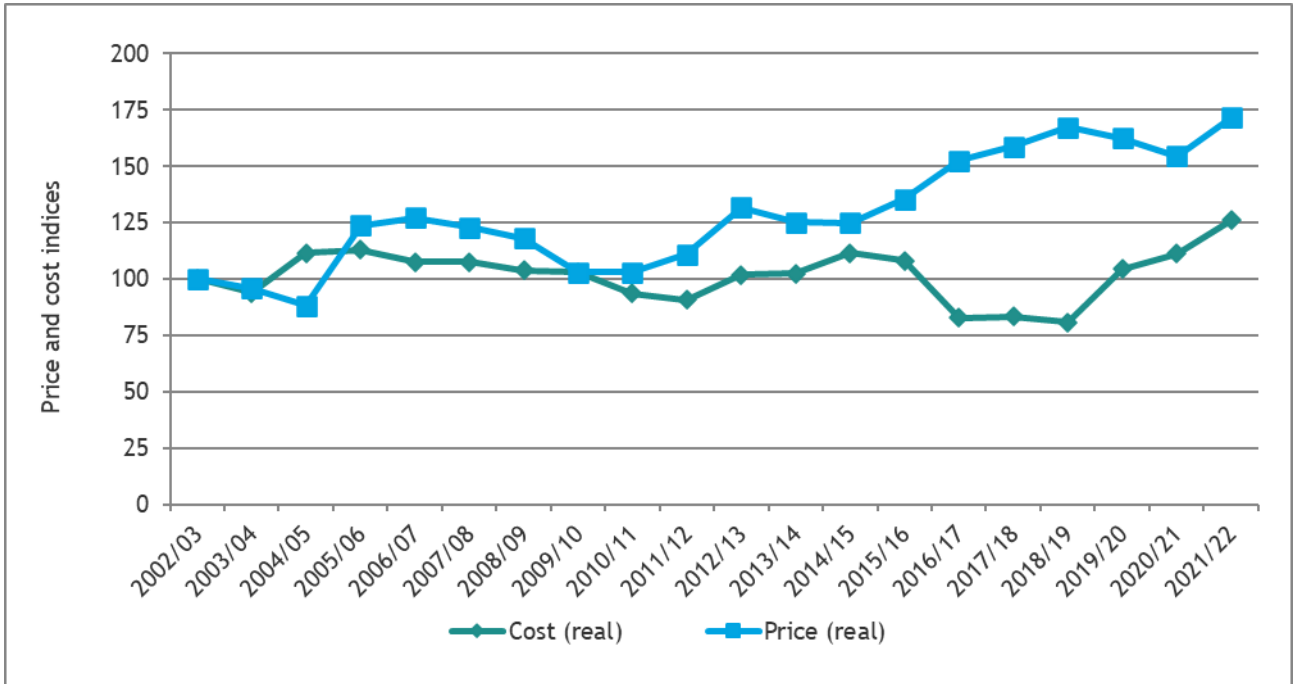
### Cost Price Squeeze

Real price and cost indices (in 2021/22 dollars) for the BCF 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. Overall, between 2002/03 to 2021/22, the average price of Blue Crabs increased by 72 per cent in real terms. The average costs of catching Blue Crabs have fluctuated over the same period. In 2021/22, average cash costs per kilogram were 26 per cent higher, in real terms, than in 2002/03 (Figure 5-7).

### Profitability

Selected measures of profitability for the BCF 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 total gross income earned. Overall profits increased between 2002/03 and 2021/22, principally the result of an increase in fishery income and improved fishing productivity but fell between 2019/20 and 2021/22 as a result of an increase in variable costs, fixed costs, and depreciation (Figure 5-8).

Figure 5-7 Price and cost indices for the SA Commercial Blue Crab Fishery, 2002/03 to 2021/22 (2002/03 = 100) <sup>a,b</sup>

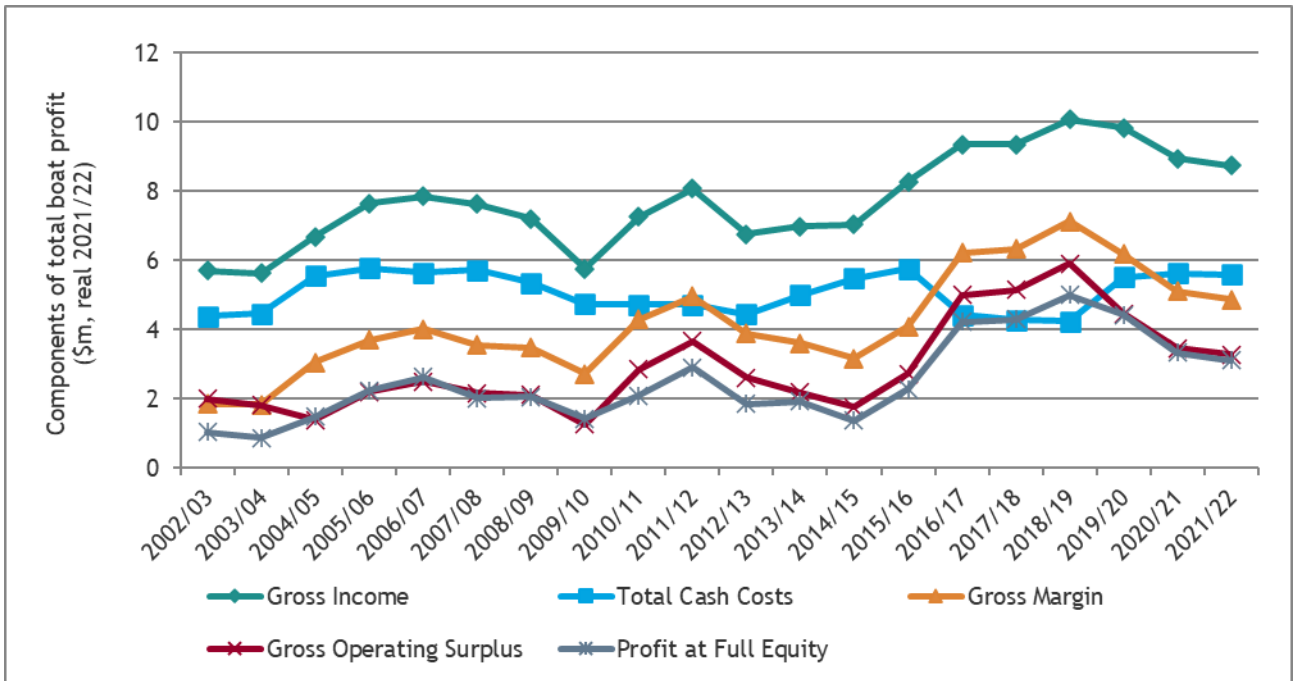


<sup>a</sup> Estimates of average price and cost are expressed in real 2021/22 terms indexed against 2002/03.

<sup>b</sup> Estimates from 2010/11 onwards relate to the pot sector only.

Source: Table 3-6 and Appendix Table 3-1 to Appendix Table 3-6.

Figure 5-8 Income and profit in the SA Commercial Blue Crab Fishery, 2002/03 to 2021/22 <sup>a,b</sup>



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

<sup>b</sup> Estimates from 2010/11 onwards relate to the pot sector only.

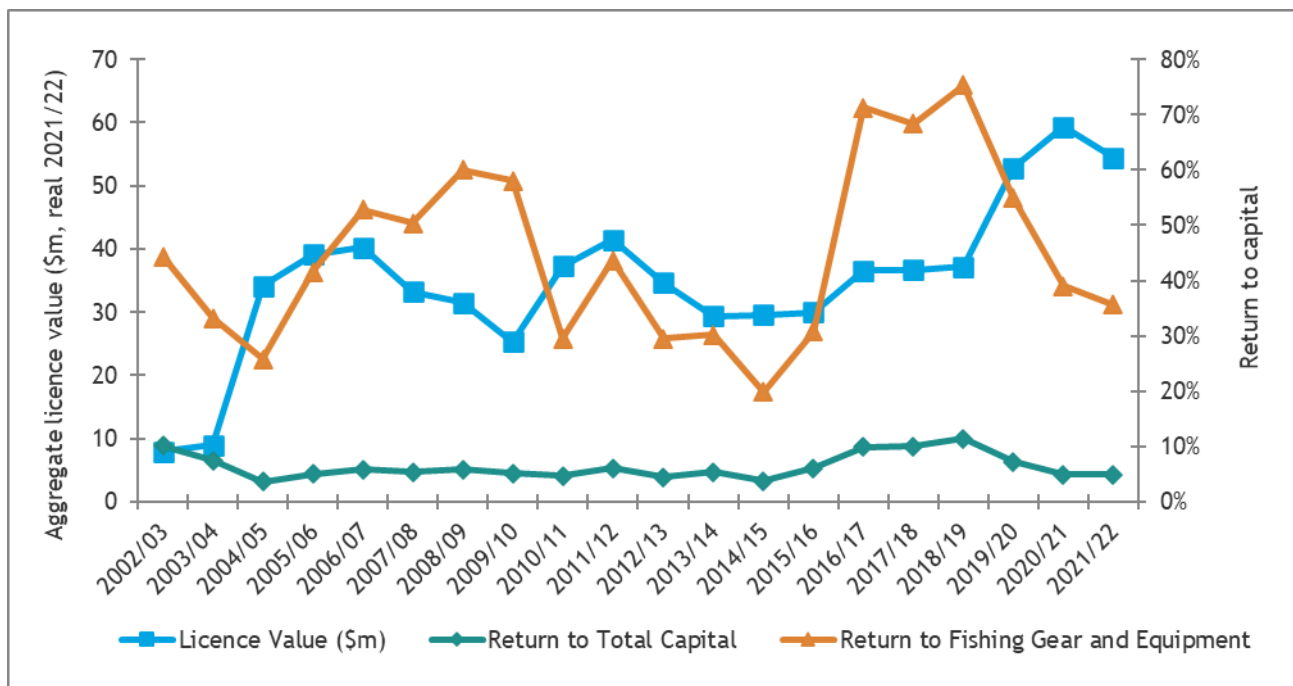
Source: Table 3-6 and Appendix Table 3-1 to Appendix Table 3-6.

## 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 both total capital employed and total capital excluding licence/quota.

Despite fluctuations, the estimated rate of return to total capital for the fishery has decreased overall between 2002/03 (10.1 per cent) and 2021/22 (4.9 per cent). The average return to capital for active fishers in the fishery for the period 2019/20 to 2021/22 is reported in Table 3-6. The rate of return to boat capital (i.e. fishing gear and equipment), 35.6 per cent in 2021/22, is significantly higher than the rate of return to total capital (4.9 per cent) because the latter includes the estimated licence value. The rate of return to total capital remained the same between 2020/21 and 2021/22 (4.9 per cent). However, was lower than the estimates for 2019/20 (7.3 per cent) and 2018/19 (11.4 per cent).

Figure 5-9 Return to capital in the SA Commercial Blue Crab Fishery, 2002/03 to 2021/22 <sup>a,b</sup>



<sup>a</sup> Estimates of licence values, income and profitability measures are expressed in real 2021/22 terms.

<sup>b</sup> Estimates from 2010/11 onwards relate to the pot sector only.

Source: Table 3-6 and Appendix Table 3-1 to Appendix Table 3-6.

## 5.4. Contribution to SA Economy

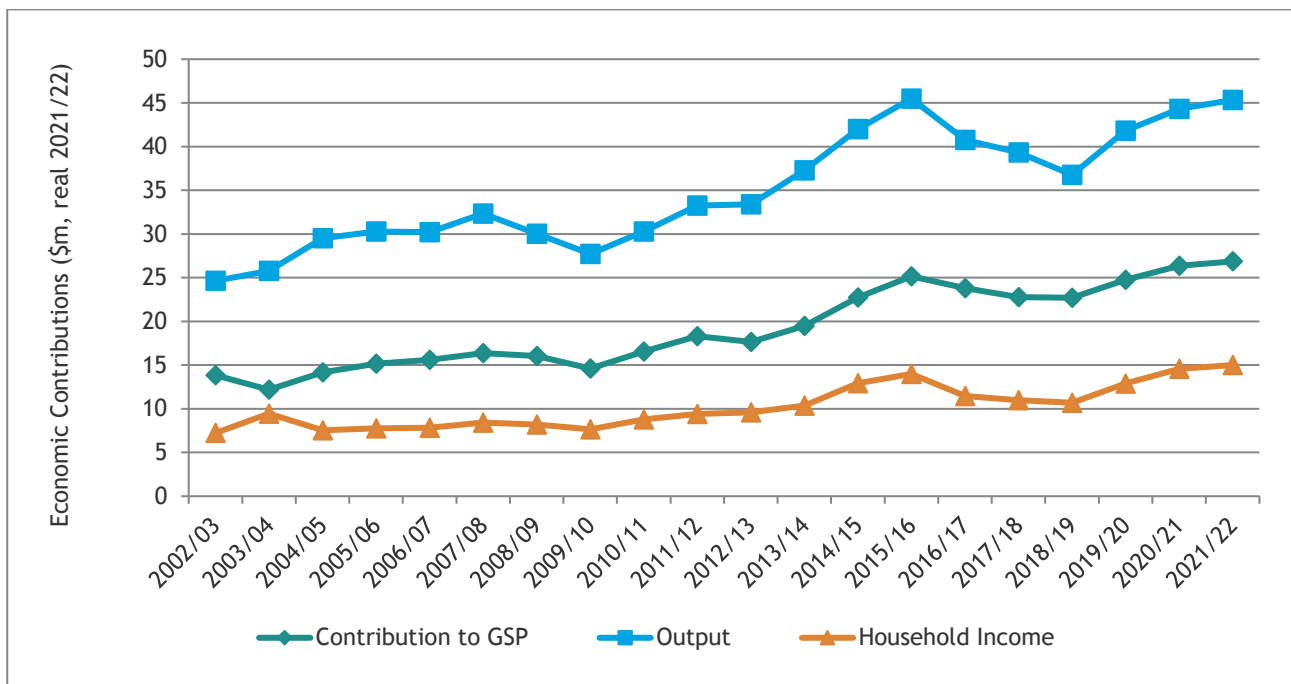
Figure 5-10 and Figure 5-11 illustrate the total economic contribution of the fishery on the SA economy for the 20 years, 2002/03 to 2021/22. Total economic contribution refers to the direct fishing industry contributions (fishing, processing, etc.) and the indirect contributions on other sectors of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

The indicators from 2004/05 and 2013/14 have been revised to incorporate year-to-year revisions in the margin earned by downstream enterprises associated with the BCF, namely the processing, and retail, and food service sectors. While this has revised the estimates previously reported in figures in Blue Crab Fishery

Economic Indicator reports (BDO EconSearch 2022b), there has been no revision of the estimated direct contribution generated by Blue Crab fishing across this period.

The change in total output and GSP contributions are closely related to changes in price and fishery GVP. Output, household income and contribution to GSP all followed an increasing trend between 2002/03 to 2021/22 (Figure 5-10). Despite fluctuations, the total employment contribution has also followed an increasing trend over the period 2002/03 to 2021/22. The recent increase in these indicators can be attributed to the increased activity of associated downstream sectors (processing, retail trade, and food service sectors).

**Figure 5-10** Total gross state product, output and household income contribution of the SA Commercial Blue Crab Fishery on the SA economy, 2002/03 to 2021/22 <sup>a,b</sup>



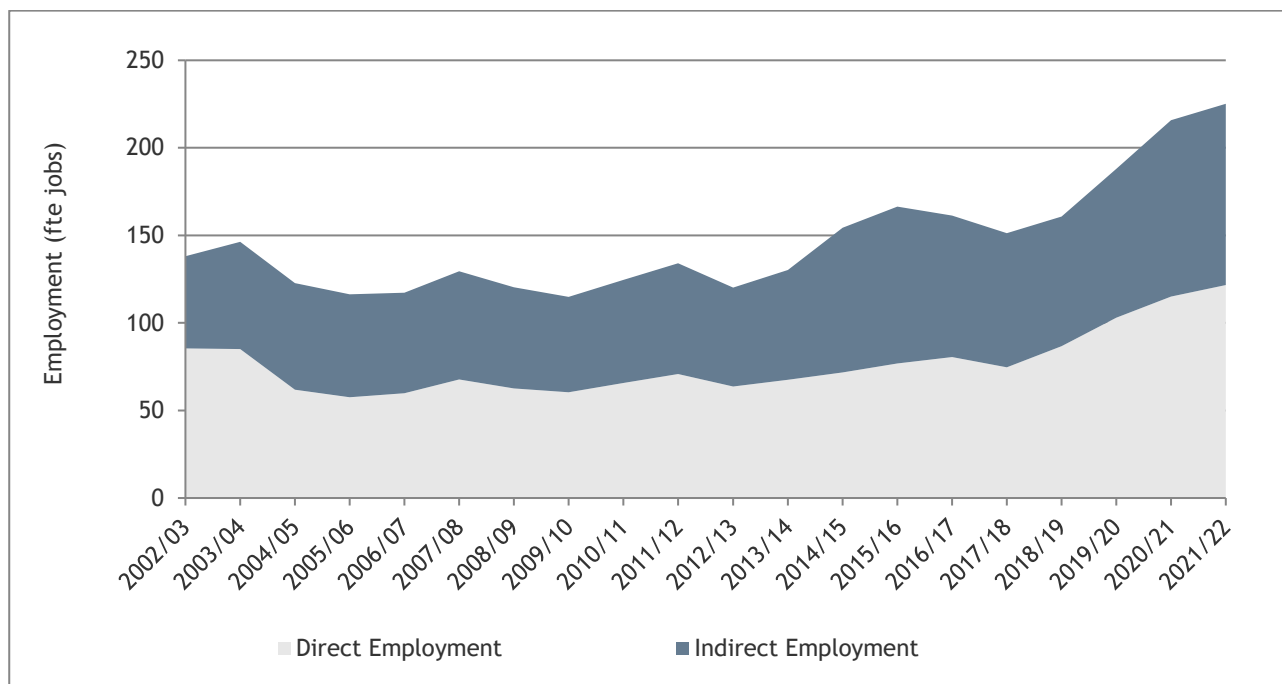
<sup>a</sup> Estimates of output, GSP and household income are expressed in real 2021/22 terms.

<sup>b</sup> Values for 2019/20 and 2020/21 have been revised using updated information received in 2021/22.

Source: Table 3-9 and BDO EconSearch (2022b)

The economic contribution of the SA BCF to employment in 2021/22 is reported in Table 3-9. The SA BCF was responsible for the direct employment of around 29 full-time equivalents (fte) and downstream activities created employment of 93 fte jobs state-wide. Flow-on business activity was estimated to generate a further 104 fte jobs state-wide. These state-wide jobs were concentrated in the business services (21) and trade (18) sectors. The total employment contribution was estimated to be 225 fte jobs (Figure 5-10).

Figure 5-11 Total direct and indirect employment contribution of the SA Commercial Blue Crab Fishery on the SA economy, 2002/03 to 2021/22 <sup>a</sup>



<sup>a</sup> Values for 2019/20 and 2020/21 have been revised using updated information received in 2021/22.

Source: Table 3-9 and BDO EconSearch (2022b)

## 5.5. Net Economic Return

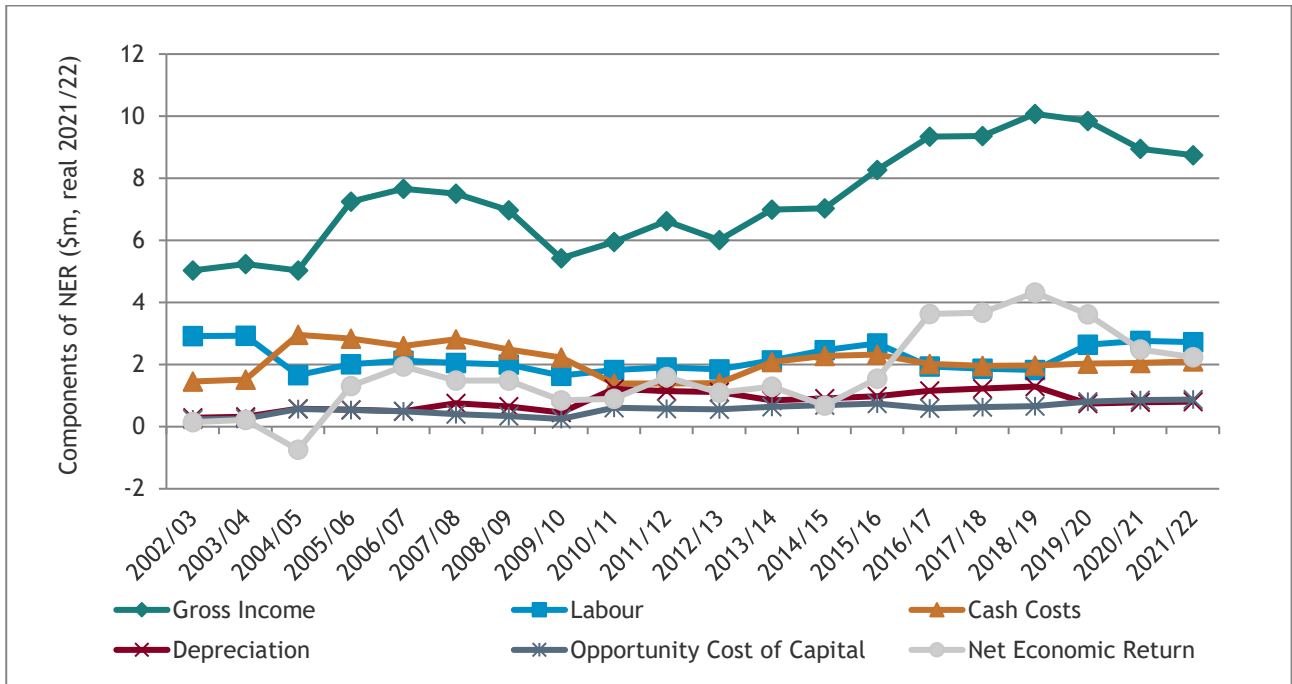
NER is the return from a fishery after all costs have been met. It is equal to fishing revenue less fishing costs (cost of labour, capital including depreciation, materials and an allowance for “normal” profit). NER is maximised when economic efficiency is maximised. Estimates of the NER generated in the SA BCF are summarised in Figure 5-12 for the period 2002/03 to 2021/22.

The NER increased from \$141,000 in 2002/03 to \$2.2 million in 2021/22, mainly due to the increases in price and, hence income, while holding costs relatively steady (Figure 5-12). Fluctuations in NER during this period can be attributed to fluctuating income, fluctuating cash costs, higher depreciation and a higher opportunity cost of capital (due to increased investment in fishing gear and equipment) (Table 3-10).

NER expressed as a percentage of GVP is a useful indicator for analysing a fishery over time and for comparing different fisheries. This measure increased overall from 2002/03 (3 per cent) to 2021/22 (26 per cent), despite declining to negative 15 per cent in 2004/05 (Figure 5-13). The SA BCF has the one of the highest rent as a percentage of GVP of all commercial fisheries in South Australia.

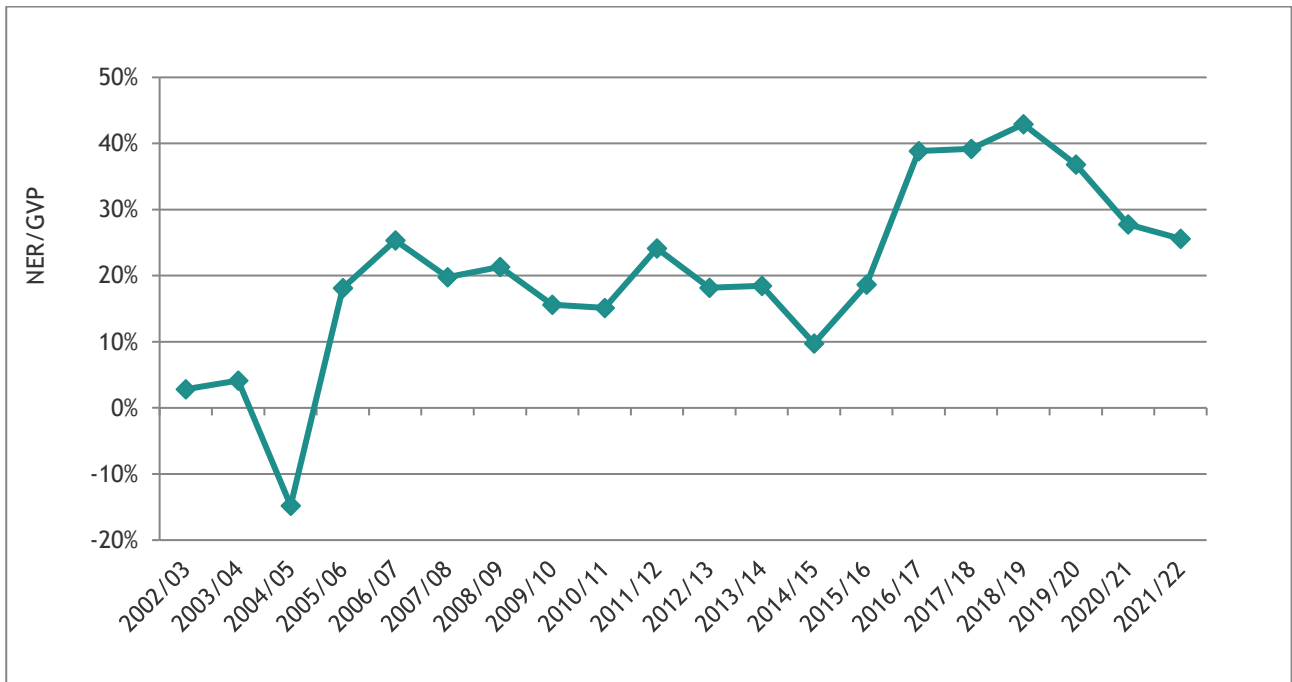
NER represents a return to the value of licences (quota units) in the fishery. The aggregate value of licences in the SA BCF and the return to the aggregate value of licences in the fishery are illustrated in Figure 5-14. The return on aggregate value of licences has fluctuated in the years between 2002/03 and 2021/22 but increased overall. Peaking in 2018/19 at 12.8 per cent, return has decreased since due to an increase in the aggregate value of licences, and a decrease in NER (Figure 5-14).

Figure 5-12 Net Economic Return in the SA Commercial Blue Crab Fishery, 2002/03 to 2021/22 (\$'000) <sup>a</sup>



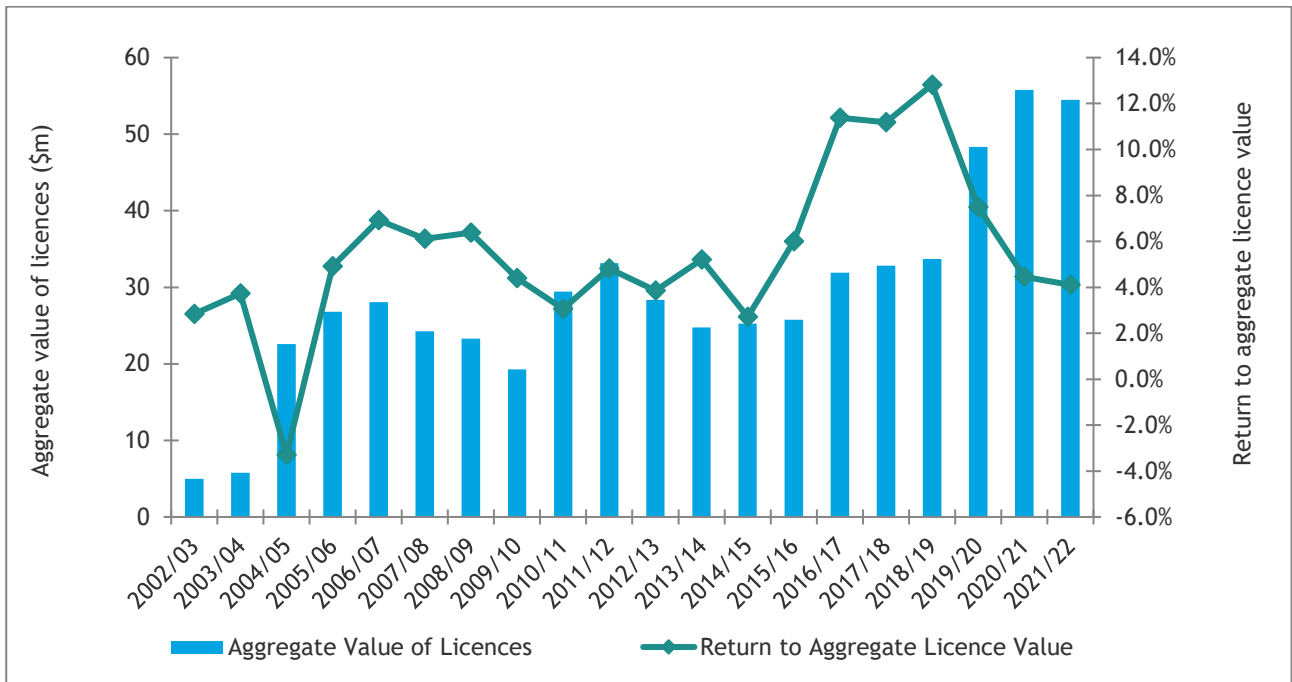
<sup>a</sup> All indicators are expressed in real 2021/22 terms.  
Source: Table 3-10

Figure 5-13 Net Economic Return as a proportion of GDP in the SA Commercial Blue Crab Fishery, 2002/03 to 2021/22



Source: Table 3-1 and Table 3-10

Figure 5-14 Aggregate value of licences and return to aggregate licence value in the SA Commercial Blue Crab Fishery, 2002/03 to 2021/22 <sup>a</sup>



<sup>a</sup> 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 3-10 and Appendix Table 3-1 to Appendix Table 3-6.

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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 Commercial Blue Crab Fishery, 2020/21

Appendix Table 1-1 The economic contribution of the Blue Crab fishing industry on the South Australian economy, 2020/21 <sup>d</sup>

| Sector                            | Output      |             | Employment <sup>a</sup> |             | Household Income |             | Contribution to GSP |             |
|-----------------------------------|-------------|-------------|-------------------------|-------------|------------------|-------------|---------------------|-------------|
|                                   | (\$m)       | %           | (fte jobs)              | %           | (\$m)            | %           | (\$m)               | %           |
| <b>Direct effects</b>             |             |             |                         |             |                  |             |                     |             |
| Fishing                           | 8.4         | 20%         | 29                      | 13%         | 2.6              | 19%         | 6.5                 | 26%         |
| Processing                        | 1.5         | 4%          | 4                       | 2%          | 0.2              | 2%          | 0.5                 | 2%          |
| Transport                         | 0.5         | 1%          | 2                       | 1%          | 0.2              | 1%          | 0.2                 | 1%          |
| Retail                            | 3.1         | 7%          | 25                      | 11%         | 1.4              | 10%         | 1.8                 | 7%          |
| Food services                     | 5.3         | 13%         | 54                      | 25%         | 2.1              | 15%         | 3.0                 | 12%         |
| Capital expenditure <sup>b</sup>  | 0.2         | 0%          | 1                       | 1%          | 0.1              | 1%          | 0.1                 | 0%          |
| <b>Total Direct <sup>c</sup></b>  | <b>19.0</b> | <b>46%</b>  | <b>115</b>              | <b>53%</b>  | <b>6.6</b>       | <b>48%</b>  | <b>12.1</b>         | <b>49%</b>  |
| <b>Flow-on effects</b>            |             |             |                         |             |                  |             |                     |             |
| Trade                             | 2.6         | 6%          | 17                      | 8%          | 1.0              | 8%          | 1.5                 | 6%          |
| Manufacturing                     | 3.1         | 7%          | 9                       | 4%          | 0.6              | 4%          | 0.9                 | 4%          |
| Business Services                 | 3.1         | 8%          | 20                      | 9%          | 1.5              | 11%         | 1.7                 | 7%          |
| Transport                         | 1.4         | 3%          | 6                       | 3%          | 0.4              | 3%          | 0.6                 | 3%          |
| Other Sectors                     | 12.4        | 30%         | 48                      | 22%         | 3.6              | 26%         | 7.9                 | 32%         |
| <b>Total Flow-on <sup>c</sup></b> | <b>22.7</b> | <b>54%</b>  | <b>101</b>              | <b>47%</b>  | <b>7.1</b>       | <b>52%</b>  | <b>12.7</b>         | <b>51%</b>  |
| <b>Total <sup>c</sup></b>         | <b>41.7</b> | <b>100%</b> | <b>216</b>              | <b>100%</b> | <b>13.7</b>      | <b>100%</b> | <b>24.8</b>         | <b>100%</b> |
| Total/Direct                      | 2.2         | -           | 1.9                     | -           | 2.1              | -           | 2.1                 | -           |
| Total/Tonne                       | \$70,300    | -           | 0.36                    | -           | \$23,100         | -           | \$41,800            | -           |

<sup>a</sup> Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 27 full-time and 6 part-time jobs, that is, 32 jobs in aggregate, which was estimated to be equal to 29 fte jobs.

<sup>b</sup> Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

<sup>c</sup> Totals may not sum due to rounding.

<sup>d</sup> Values have been revised using updated information received in 2021/22.

Source: BDO EconSearch analysis

## APPENDIX 2 Summary Economic Indicators for SA Commercial Fisheries

Appendix Table 2-1 Commercial fisheries catch, South Australia, 2001/02 to 2020/21 (tonnes) <sup>a</sup>

| Year    | Abalone | GSV Prawns <sup>a</sup> | SG Prawns <sup>a</sup> | Sth'n Zone Rock Lobster <sup>a</sup> | Nth'n Zone Rock Lobster <sup>a</sup> | Blue Crabs | Lakes and Coorong <sup>b</sup> | Sardines | Marine Scalefish | Misc <sup>c</sup> | Total SA Fisheries <sup>d</sup> |
|---------|---------|-------------------------|------------------------|--------------------------------------|--------------------------------------|------------|--------------------------------|----------|------------------|-------------------|---------------------------------|
| 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                          |

<sup>a</sup> Excludes retained by-catch of Octopus and Southern Calamari.

<sup>b</sup> 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.

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

<sup>d</sup> 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 (2022c)

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

| Year    | Abalone | GSV Prawns <sup>a</sup> | SG Prawns <sup>a</sup> | Sth'n Zone Rock Lobster <sup>a</sup> | Nth'n Zone Rock Lobster <sup>a</sup> | Blue Crabs | Lakes and Coorong <sup>b</sup> | Sardines | Marine Scalefish | Misc <sup>c</sup> | Charter Boat | Total SA Fisheries <sup>d</sup> |
|---------|---------|-------------------------|------------------------|--------------------------------------|--------------------------------------|------------|--------------------------------|----------|------------------|-------------------|--------------|---------------------------------|
| 2001/02 | 54      | 9                       | 62                     | 98                                   | 41                                   | 5          | 7                              | 13       | 30               | -                 | -            | 319                             |
| 2002/03 | 54      | 6                       | 41                     | 96                                   | 28                                   | 5          | 7                              | 27       | 31               | -                 | -            | 296                             |
| 2003/04 | 46      | 5                       | 58                     | 72                                   | 18                                   | 5          | 8                              | 33       | 33               | -                 | -            | 277                             |
| 2004/05 | 46      | 5                       | 45                     | 77                                   | 17                                   | 5          | 8                              | 41       | 30               | -                 | -            | 274                             |
| 2005/06 | 46      | 4                       | 46                     | 90                                   | 21                                   | 7          | 8                              | 22       | 24               | -                 | 6            | 275                             |
| 2006/07 | 42      | 4                       | 53                     | 106                                  | 24                                   | 7          | 10                             | 25       | 26               | -                 | 6            | 305                             |
| 2007/08 | 40      | 4                       | 41                     | 98                                   | 21                                   | 7          | 10                             | 21       | 26               | 1                 | 5            | 274                             |
| 2008/09 | 41      | 4                       | 38                     | 108                                  | 25                                   | 7          | 11                             | 22       | 27               | 1                 | 5            | 290                             |
| 2009/10 | 35      | 3                       | 34                     | 87                                   | 19                                   | 5          | 8                              | 28       | 28               | 1                 | 6            | 254                             |
| 2010/11 | 33      | 3                       | 36                     | 80                                   | 17                                   | 6          | 8                              | 23       | 26               | 1                 | 5            | 238                             |
| 2011/12 | 34      | 2                       | 29                     | 93                                   | 20                                   | 6          | 9                              | 24       | 27               | 1                 | 6            | 252                             |
| 2012/13 | 34      | 0                       | 32                     | 82                                   | 18                                   | 6          | 11                             | 24       | 28               | 1                 | 6            | 241                             |
| 2013/14 | 25      | 0                       | 31                     | 99                                   | 22                                   | 7          | 11                             | 21       | 24               | 1                 | 5            | 246                             |
| 2014/15 | 28      | 5                       | 32                     | 112                                  | 25                                   | 7          | 9                              | 24       | 26               | 1                 | 4            | 272                             |
| 2015/16 | 24      | 4                       | 42                     | 124                                  | 27                                   | 8          | 9                              | 28       | 24               | 2                 | 4            | 297                             |
| 2016/17 | 30      | 5                       | 42                     | 108                                  | 22                                   | 9          | 10                             | 26       | 25               | 2                 | 4            | 281                             |
| 2017/18 | 29      | 5                       | 46                     | 103                                  | 26                                   | 9          | 12                             | 28       | 24               | 2                 | 4            | 287                             |
| 2018/19 | 30      | 4                       | 43                     | 115                                  | 26                                   | 9          | 14                             | 27       | 21               | 2                 | 3            | 295                             |
| 2019/20 | 22      | 2                       | 23                     | 106                                  | 19                                   | 9          | 13                             | 27       | 20               | 2                 | 2            | 247                             |
| 2020/21 | 18      | 2                       | 36                     | 71                                   | 12                                   | 8          | 14                             | 24       | 19               | 1                 | 3            | 209                             |

<sup>a</sup> Excludes retained by-catch of Octopus and Southern Calamari.

<sup>b</sup> 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.

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

<sup>d</sup> 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 (2022c)

Appendix Table 2-3 Cost of management in South Australian commercial fisheries, 2020/21

|                               | Licence Fees  | GVP            | Fees/ GVP   | Catch <sup>a</sup> | 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 <sup>b</sup>    | 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 <sup>c</sup>        | 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 <sup>d</sup> | 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        |
| <b>Total SA</b>               | <b>13,129</b> | <b>208,604</b> | <b>6.3%</b> | <b>46,215</b>      | <b>\$0.28</b> | <b>787</b>      | <b>\$16,683</b> |

<sup>a</sup> 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.

<sup>b</sup> Management costs for the Charter Boat Fishery are reported per client rather than per kg of catch.

<sup>c</sup> Excludes West Coast Prawn Fishery.

<sup>d</sup> 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 (2022c)

Appendix Table 2-4 Financial performance in South Australian commercial fisheries, 2020/21, (average per boat) <sup>b</sup>

|   | Abalone   | Charter Boats | GSV Prawns | SG Prawns | Sth'n Zone Rock Lob | Nth'n Zone Rock Lob | Blue Crabs <sup>a</sup> | 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%             |

<sup>a</sup> Estimates of financial performance for the blue crab fishery have been presented on a whole of fishery basis.

<sup>b</sup> 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 (2022c)

Appendix Table 2-5 Costs as a percentage of total cash costs in South Australian commercial fisheries, 2020/21 <sup>a</sup>

|                             | 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 |
|-----------------------------|-------------|---------------|------------------------|---------------------|---------------------|---------------------|-------------|------------------|-------------|-------------------|
| <b>Variable Costs</b>       |             |               |                        |                     |                     |                     |             |                  |             |                   |
| 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%                |
| <b>Fixed Costs</b>          |             |               |                        |                     |                     |                     |             |                  |             |                   |
| 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%                |
| <b>Total Variable Costs</b> | <b>63%</b>  | <b>60%</b>    | <b>71%</b>             | <b>78%</b>          | <b>75%</b>          | <b>64%</b>          | <b>69%</b>  | <b>65%</b>       | <b>73%</b>  | <b>66%</b>        |
| <b>Total Fixed Costs</b>    | <b>37%</b>  | <b>40%</b>    | <b>29%</b>             | <b>22%</b>          | <b>25%</b>          | <b>36%</b>          | <b>31%</b>  | <b>35%</b>       | <b>27%</b>  | <b>34%</b>        |
| <b>Total Cash Costs</b>     | <b>100%</b> | <b>100%</b>   | <b>100%</b>            | <b>100%</b>         | <b>100%</b>         | <b>100%</b>         | <b>100%</b> | <b>100%</b>      | <b>100%</b> | <b>100%</b>       |

<sup>a</sup> 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 (2022c)

Appendix Table 2-6 Economic contributions of South Australian commercial fisheries, 2020/21 <sup>a,b</sup>

|                                  | 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 |
|----------------------------------|-------------|---------------|-----------------------|--------------|---------------------|---------------------|-------------|------------------|-------------|-------------------|---------------|
| <b>Output (\$m)</b>              |             |               |                       |              |                     |                     |             |                  |             |                   |               |
| 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         |
| <b>Total</b>                     | <b>90.5</b> | <b>23.0</b>   | <b>11.6</b>           | <b>163.0</b> | <b>226.8</b>        | <b>47.3</b>         | <b>34.4</b> | <b>85.1</b>      | <b>48.3</b> | <b>39.8</b>       | <b>769.8</b>  |
| 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      |
| <b>Contribution to GSP (\$m)</b> |             |               |                       |              |                     |                     |             |                  |             |                   |               |
| 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         |
| <b>Total</b>                     | <b>45.9</b> | <b>12.1</b>   | <b>6.3</b>            | <b>95.9</b>  | <b>137.4</b>        | <b>23.7</b>         | <b>20.8</b> | <b>44.8</b>      | <b>32.3</b> | <b>25.5</b>       | <b>444.6</b>  |
| 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       |
| <b>Employment (fte jobs)</b>     |             |               |                       |              |                     |                     |             |                  |             |                   |               |
| 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         |
| <b>Total</b>                     | <b>323</b>  | <b>128</b>    | <b>70</b>             | <b>834</b>   | <b>1,105</b>        | <b>268</b>          | <b>169</b>  | <b>540</b>       | <b>199</b>  | <b>238</b>        | <b>3,874</b>  |
| 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           |
| <b>Household Income (\$m)</b>    |             |               |                       |              |                     |                     |             |                  |             |                   |               |
| 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         |
| <b>Total</b>                     | <b>23.8</b> | <b>7.1</b>    | <b>4.5</b>            | <b>57.9</b>  | <b>80.1</b>         | <b>18.3</b>         | <b>11.2</b> | <b>31.5</b>      | <b>14.3</b> | <b>12.0</b>       | <b>260.7</b>  |
| 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       |

<sup>a</sup> 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.

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

Source: BDO EconSearch (2022c)



Appendix Table 2-7    **NER in South Australian commercial fisheries <sup>a</sup>, 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 <sup>a</sup> |
|---|------------|-------------|-------------|---------------------|---------------------|------------|------------------|------------|-------------------|----------------------------|
| 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                       |
| <b>NER</b>                              | <b>4</b>   | <b>-1</b>   | <b>-2</b>   | <b>6</b>            | <b>-5</b>           | <b>2</b>   | <b>-1</b>        | <b>3</b>   | <b>7</b>          | <b>14</b>                  |
| <b>NER/GVP</b>                          | <b>24%</b> | <b>-64%</b> | <b>-5%</b>  | <b>8%</b>           | <b>-42%</b>         | <b>28%</b> | <b>-5%</b>       | <b>14%</b> | <b>49%</b>        | <b>5%</b>                  |

<sup>a</sup> 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 (2022c)

## APPENDIX 3 Financial Performance, 2002/03 - 2018/19

Appendix Table 3-1 Financial performance of the SA Commercial Blue Crab Fishery, 2002/03 to 2004/05 (total fishery) <sup>a</sup>

|  | 2002/03       |                            | 2003/04       |                            | 2004/05       |                            |
|--|---------------|----------------------------|---------------|----------------------------|---------------|----------------------------|
|  | Fishery Total | Share of TBCC <sup>b</sup> | Fishery Total | Share of TBCC <sup>b</sup> | Fishery Total | Share of TBCC <sup>b</sup> |
| (1) Total Boat Gross Income                        | \$3,574,000   |                            | \$3,638,000   |                            | \$4,413,305   |                            |
| Variable Costs                                     |               |                            |               |                            |               |                            |
| Fuel   | \$327,517     | 12%                        | \$316,403     | 11%                        | \$649,768     | 18%                        |
| Repairs & Maintenance <sup>c</sup>                 | \$210,582     | 8%                         | \$213,222     | 7%                         | \$588,094     | 16%                        |
| Bait/Ice   | \$81,262      | 3%                         | \$81,448      | 3%                         | \$72,758      | 2%                         |
| Provisions   | \$561         | 0%                         | \$431         | 0%                         | \$12,424      | 0%                         |
| Labour - paid                                      | \$1,398,264   | 51%                        | \$1,471,305   | 51%                        | \$932,163     | 25%                        |
| (2) Labour - unpaid <sup>d</sup>                   | \$384,407     | 14%                        | \$366,592     | 13%                        | \$124,378     | 3%                         |
| Other  | \$9,678       | 0%                         | \$9,970       | 0%                         | \$17,561      | 0%                         |
| (3) Total Variable Costs                           | \$2,412,272   | 88%                        | \$2,459,370   | 85%                        | \$2,397,145   | 65%                        |
| Fixed Costs  |               |                            |               |                            |               |                            |
| Licence Fee  | \$168,109     | 6%                         | \$227,097     | 8%                         | \$338,476     | 9%                         |
| Insurance  | \$37,030      | 1%                         | \$42,489      | 1%                         | \$71,403      | 2%                         |
| (4) Interest                                       | \$13,940      | 1%                         | \$15,314      | 1%                         | \$615,601     | 17%                        |
| (5) Labour - unpaid <sup>d</sup>                   | \$46,668      | 2%                         | \$52,719      | 2%                         | \$41,460      | 1%                         |
| (6) Leasing  | \$0           | 0%                         | \$0           | 0%                         | \$0           | 0%                         |
| Legal & Accounting                                 | \$12,754      | 0%                         | \$14,696      | 1%                         | \$41,437      | 1%                         |
| Telephone etc.                                     | \$31,605      | 1%                         | \$36,760      | 1%                         | \$20,923      | 1%                         |
| Slipping & Mooring                                 | \$1,613       | 0%                         | \$1,898       | 0%                         | \$30,451      | 1%                         |
| Travel   | \$6,409       | 0%                         | \$7,543       | 0%                         | \$26,553      | 1%                         |
| Office & Admin                                     | \$25,600      | 1%                         | \$29,357      | 1%                         | \$81,954      | 2%                         |
| (7) Total Fixed Costs                              | \$343,728     | 12%                        | \$427,873     | 15%                        | \$1,268,258   | 35%                        |
| (8) Total Boat Cash Costs (3+7)                    | \$2,756,000   | 100%                       | \$2,887,243   | 100%                       | \$3,665,402   | 100%                       |
| Boat Gross Margin (1-3)                            | \$1,161,728   |                            | \$1,178,630   |                            | \$2,016,161   |                            |
| (9) Total Unpaid Labour (2+5)                      | \$431,076     |                            | \$419,311     |                            | \$165,838     |                            |
| Gross Operating Surplus (1-8+9)                    | \$1,249,075   |                            | \$1,170,068   |                            | \$913,741     |                            |
| (10) Boat Cash Income (1-8)                        | \$818,000     |                            | \$750,757     |                            | \$747,903     |                            |
| (11) Depreciation                                  | \$179,280     |                            | \$204,720     |                            | \$385,363     |                            |
| (12) Boat Business Profit (10-11)                  | \$638,720     |                            | \$546,037     |                            | \$362,540     |                            |
| (13) Profit at Full Equity (12+4+6)                | \$652,660     |                            | \$561,350     |                            | \$978,141     |                            |
| Boat Capital                                       |               |                            |               |                            |               |                            |
| (14) Fishing Gear & Equip                          | \$1,469,232   |                            | \$1,690,853   |                            | \$3,781,064   |                            |
| Licence Value                                      | \$4,984,703   |                            | \$5,783,722   |                            | \$22,575,060  |                            |
| (15) Total Boat Capital                            | \$6,453,935   |                            | \$7,474,575   |                            | \$26,356,124  |                            |
| Rate of Return on Fishing Gear & Equip (13/14*100) | 44.4%         |                            | 33.2%         |                            | 25.9%         |                            |
| Rate of Return on Total Boat Capital (13/15*100)   | 10.1%         |                            | 7.5%          |                            | 3.7%          |                            |

<sup>a</sup> 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.

<sup>b-d</sup> See Table 3-4 footnotes.

Source: BDO EconSearch (2022b)

Appendix Table 3-2 Financial performance of the SA Commercial Blue Crab Fishery, 2005/06 to 2007/08 (total fishery) <sup>a</sup>

|  | 2005/06       |                            | 2006/07       |                            | 2007/08       |                            |
|--|---------------|----------------------------|---------------|----------------------------|---------------|----------------------------|
|  | Fishery Total | Share of TBCC <sup>b</sup> | Fishery Total | Share of TBCC <sup>b</sup> | Fishery Total | Share of TBCC <sup>b</sup> |
| (1) Total Boat Gross Income                        | \$5,235,840   |                            | \$5,469,000   |                            | \$5,563,643   |                            |
| Variable Costs                                     |               |                            |               |                            |               |                            |
| Fuel   | \$673,203     | 17%                        | \$600,702     | 15%                        | \$734,680     | 18%                        |
| Repairs & Maintenance <sup>c</sup>                 | \$589,589     | 15%                        | \$533,281     | 14%                        | \$610,241     | 15%                        |
| Bait/Ice   | \$70,526      | 2%                         | \$66,933      | 2%                         | \$75,196      | 2%                         |
| Provisions   | \$12,810      | 0%                         | \$11,125      | 0%                         | \$0           | 0%                         |
| Labour - paid                                      | \$1,147,096   | 29%                        | \$1,260,901   | 32%                        | \$1,299,682   | 31%                        |
| (2) Labour - unpaid <sup>d</sup>                   | \$187,531     | 5%                         | \$173,265     | 4%                         | \$124,583     | 3%                         |
| Other  | \$18,232      | 0%                         | \$18,544      | 0%                         | \$132,766     | 3%                         |
| (3) Total Variable Costs                           | \$2,698,987   | 68%                        | \$2,664,751   | 68%                        | \$2,977,149   | 71%                        |
| Fixed Costs  |               |                            |               |                            |               |                            |
| Licence Fee  | \$294,763     | 7%                         | \$291,352     | 7%                         | \$279,665     | 7%                         |
| Insurance  | \$74,131      | 2%                         | \$75,401      | 2%                         | \$105,287     | 3%                         |
| (4) Interest                                       | \$639,122     | 16%                        | \$650,071     | 17%                        | \$629,053     | 15%                        |
| (5) Labour - unpaid <sup>d</sup>                   | \$42,767      | 1%                         | \$44,440      | 1%                         | \$68,197      | 2%                         |
| (6) Leasing  | \$0           | 0%                         | \$0           | 0%                         | \$0           | 0%                         |
| Legal & Accounting                                 | \$43,021      | 1%                         | \$43,758      | 1%                         | \$23,507      | 1%                         |
| Telephone etc.                                     | \$21,722      | 1%                         | \$22,095      | 1%                         | \$29,350      | 1%                         |
| Slipping & Mooring                                 | \$31,615      | 1%                         | \$32,156      | 1%                         | \$0           | 0%                         |
| Travel   | \$27,567      | 1%                         | \$28,040      | 1%                         | \$16,691      | 0%                         |
| Office & Admin                                     | \$85,085      | 2%                         | \$86,543      | 2%                         | \$45,117      | 1%                         |
| (7) Total Fixed Costs                              | \$1,259,793   | 32%                        | \$1,273,855   | 32%                        | \$1,196,868   | 29%                        |
| (8) Total Boat Cash Costs (3+7)                    | \$3,958,780   | 100%                       | \$3,938,606   | 100%                       | \$4,174,016   | 100%                       |
| Boat Gross Margin (1-3)                            | \$2,536,853   |                            | \$2,804,249   |                            | \$2,586,494   |                            |
| (9) Total Unpaid Labour (2+5)                      | \$230,298     |                            | \$217,705     |                            | \$192,780     |                            |
| Gross Operating Surplus (1-8+9)                    | \$1,507,358   |                            | \$1,748,099   |                            | \$1,582,407   |                            |
| (10) Boat Cash Income (1-8)                        | \$1,277,060   |                            | \$1,530,394   |                            | \$1,389,627   |                            |
| (11) Depreciation                                  | \$375,549     |                            | \$349,342     |                            | \$551,976     |                            |
| (12) Boat Business Profit (10-11)                  | \$901,511     |                            | \$1,181,052   |                            | \$837,650     |                            |
| (13) Profit at Full Equity (12+4+6)                | \$1,540,633   |                            | \$1,831,123   |                            | \$1,466,704   |                            |
| Boat Capital                                       |               |                            |               |                            |               |                            |
| (14) Fishing Gear & Equip                          | \$3,699,640   |                            | \$3,468,510   |                            | \$2,907,618   |                            |
| Licence Value                                      | \$26,792,164  |                            | \$28,043,844  |                            | \$24,255,246  |                            |
| (15) Total Boat Capital                            | \$30,491,804  |                            | \$31,512,354  |                            | \$27,162,863  |                            |
| Rate of Return on Fishing Gear & Equip (13/14*100) | 41.6%         |                            | 52.8%         |                            | 50.4%         |                            |
| Rate of Return on Total Boat Capital (13/15*100)   | 5.1%          |                            | 5.8%          |                            | 5.4%          |                            |

<sup>a</sup> 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.

<sup>b-d</sup> See Table 3-4 footnotes.

Source: BDO EconSearch (2022b)

Appendix Table 3-3 Financial performance of the SA Commercial Blue Crab Fishery, 2008/09 to 2010/11 (total fishery) <sup>a</sup>

|  | 2008/09       |                            | 2009/10       |                            | 2010/11       |                            |
|--|---------------|----------------------------|---------------|----------------------------|---------------|----------------------------|
|  | Fishery Total | Share of TBCC <sup>b</sup> | Fishery Total | Share of TBCC <sup>b</sup> | Fishery Total | Share of TBCC <sup>b</sup> |
| (1) Total Boat Gross Income                        | \$5,325,984   |                            | \$4,379,286   |                            | \$5,728,490   |                            |
| Variable Costs                                     |               |                            |               |                            |               |                            |
| Fuel   | \$600,204     | 15%                        | \$469,724     | 13%                        | \$447,508     | 12%                        |
| Repairs & Maintenance <sup>c</sup>                 | \$527,752     | 13%                        | \$449,087     | 12%                        | \$152,849     | 4%                         |
| Bait/Ice   | \$72,169      | 2%                         | \$72,786      | 2%                         | \$75,415      | 2%                         |
| Provisions   | \$0           | 0%                         | \$0           | 0%                         | \$14,052      | 0%                         |
| Labour - paid                                      | \$1,283,159   | 32%                        | \$1,069,845   | 30%                        | \$1,426,179   | 38%                        |
| (2) Labour - unpaid <sup>d</sup>                   | \$125,643     | 3%                         | \$108,707     | 3%                         | \$206,840     | 6%                         |
| Other  | \$134,905     | 3%                         | \$138,628     | 4%                         | \$14,684      | 0%                         |
| (3) Total Variable Costs                           | \$2,743,833   | 69%                        | \$2,308,777   | 64%                        | \$2,337,526   | 63%                        |
| Fixed Costs  |               |                            |               |                            |               |                            |
| Licence Fee  | \$279,665     | 7%                         | \$337,962     | 9%                         | \$289,768     | 8%                         |
| Insurance  | \$106,984     | 3%                         | \$109,936     | 3%                         | \$143,655     | 4%                         |
| (4) Interest                                       | \$639,187     | 16%                        | \$656,828     | 18%                        | \$771,310     | 21%                        |
| (5) Labour - unpaid <sup>d</sup>                   | \$70,881      | 2%                         | \$72,865      | 2%                         | \$41,368      | 1%                         |
| (6) Leasing  | \$0           | 0%                         | \$0           | 0%                         | \$8,045       | 0%                         |
| Legal & Accounting                                 | \$23,885      | 1%                         | \$24,545      | 1%                         | \$54,471      | 1%                         |
| Telephone etc.                                     | \$29,823      | 1%                         | \$30,646      | 1%                         | \$13,880      | 0%                         |
| Slipping & Mooring                                 | \$0           | 0%                         | \$0           | 0%                         | \$16,103      | 0%                         |
| Travel   | \$16,960      | 0%                         | \$17,428      | 0%                         | \$2,593       | 0%                         |
| Office & Admin                                     | \$45,844      | 1%                         | \$47,109      | 1%                         | \$51,623      | 1%                         |
| (7) Total Fixed Costs                              | \$1,213,229   | 31%                        | \$1,297,319   | 36%                        | \$1,392,816   | 37%                        |
| (8) Total Boat Cash Costs (3+7)                    | \$3,957,061   | 100%                       | \$3,606,096   | 100%                       | \$3,730,342   | 100%                       |
| Boat Gross Margin (1-3)                            | \$2,582,151   |                            | \$2,070,509   |                            | \$3,390,964   |                            |
| (9) Total Unpaid Labour (2+5)                      | \$196,524     |                            | \$181,572     |                            | \$248,208     |                            |
| Gross Operating Surplus (1-8+9)                    | \$1,565,446   |                            | \$954,762     |                            | \$2,246,355   |                            |
| (10) Boat Cash Income (1-8)                        | \$1,368,922   |                            | \$773,190     |                            | \$1,998,147   |                            |
| (11) Depreciation                                  | \$484,711     |                            | \$344,971     |                            | \$1,118,538   |                            |
| (12) Boat Business Profit (10-11)                  | \$884,211     |                            | \$428,219     |                            | \$879,609     |                            |
| (13) Profit at Full Equity (12+4+6)                | \$1,523,398   |                            | \$1,085,046   |                            | \$1,658,964   |                            |
| Boat Capital                                       |               |                            |               |                            |               |                            |
| (14) Fishing Gear & Equip                          | \$2,536,588   |                            | \$1,868,043   |                            | \$5,615,027   |                            |
| Licence Value                                      | \$23,294,974  |                            | \$19,263,659  |                            | \$29,445,169  |                            |
| (15) Total Boat Capital                            | \$25,831,562  |                            | \$21,131,702  |                            | \$35,060,196  |                            |
| Rate of Return on Fishing Gear & Equip (13/14*100) | 60.1%         |                            | 58.1%         |                            | 29.5%         |                            |
| Rate of Return on Total Boat Capital (13/15*100)   | 5.9%          |                            | 5.1%          |                            | 4.7%          |                            |

<sup>a</sup> 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.

<sup>b-d</sup> See Table 3-4 footnotes.

Source: BDO EconSearch (2022b)

Appendix Table 3-4 Financial performance of the SA Commercial Blue Crab Fishery, 2011/12 to 2013/14 (total fishery) <sup>a</sup>

|  | 2011/12       |                            | 2012/13       |                            | 2013/14       |                            |
|--|---------------|----------------------------|---------------|----------------------------|---------------|----------------------------|
|  | Fishery Total | Share of TBCC <sup>b</sup> | Fishery Total | Share of TBCC <sup>b</sup> | Fishery Total | Share of TBCC <sup>b</sup> |
| (1) Total Boat Gross Income                        | \$6,449,729   |                            | \$5,513,130   |                            | \$5,883,495   |                            |
| Variable Costs                                     |               |                            |               |                            |               |                            |
| Fuel   | \$478,346     | 13%                        | \$442,637     | 12%                        | \$563,368     | 13%                        |
| Repairs & Maintenance <sup>c</sup>                 | \$158,500     | 4%                         | \$150,170     | 4%                         | \$414,009     | 10%                        |
| Bait/Ice   | \$78,203      | 2%                         | \$74,093      | 2%                         | \$105,057     | 2%                         |
| Provisions   | \$14,571      | 0%                         | \$13,805      | 0%                         | \$31,599      | 1%                         |
| Labour - paid                                      | \$1,510,633   | 40%                        | \$1,440,559   | 40%                        | \$1,630,532   | 39%                        |
| (2) Labour - unpaid <sup>d</sup>                   | \$219,088     | 6%                         | \$208,925     | 6%                         | \$94,548      | 2%                         |
| Other  | \$14,862      | 0%                         | \$15,262      | 0%                         | \$4,017       | 0%                         |
| (3) Total Variable Costs                           | \$2,474,203   | 65%                        | \$2,345,451   | 65%                        | \$2,843,130   | 68%                        |
| Fixed Costs  |               |                            |               |                            |               |                            |
| Licence Fee  | \$256,473     | 7%                         | \$298,108     | 8%                         | \$286,605     | 7%                         |
| Insurance  | \$145,397     | 4%                         | \$149,314     | 4%                         | \$165,975     | 4%                         |
| (4) Interest                                       | \$709,330     | 19%                        | \$640,463     | 18%                        | \$460,773     | 11%                        |
| (5) Labour - unpaid <sup>d</sup>                   | \$43,818      | 1%                         | \$41,785      | 1%                         | \$72,505      | 2%                         |
| (6) Leasing  | \$9,057       | 0%                         | \$7,742       | 0%                         | \$195,745     | 5%                         |
| Legal & Accounting                                 | \$55,131      | 1%                         | \$56,617      | 2%                         | \$44,986      | 1%                         |
| Telephone etc.                                     | \$14,048      | 0%                         | \$14,427      | 0%                         | \$11,284      | 0%                         |
| Slipping & Mooring                                 | \$16,698      | 0%                         | \$15,821      | 0%                         | \$41,898      | 1%                         |
| Travel   | \$2,624       | 0%                         | \$2,695       | 0%                         | \$6,082       | 0%                         |
| Office & Admin                                     | \$52,249      | 1%                         | \$53,656      | 1%                         | \$74,345      | 2%                         |
| (7) Total Fixed Costs                              | \$1,304,825   | 35%                        | \$1,280,629   | 35%                        | \$1,360,198   | 32%                        |
| (8) Total Boat Cash Costs (3+7)                    | \$3,779,028   | 100%                       | \$3,626,079   | 100%                       | \$4,203,328   | 100%                       |
| Boat Gross Margin (1-3)                            | \$3,975,526   |                            | \$3,167,679   |                            | \$3,040,365   |                            |
| (9) Total Unpaid Labour (2+5)                      | \$262,906     |                            | \$250,710     |                            | \$167,053     |                            |
| Gross Operating Surplus (1-8+9)                    | \$2,933,606   |                            | \$2,137,761   |                            | \$1,847,220   |                            |
| (10) Boat Cash Income (1-8)                        | \$2,670,701   |                            | \$1,887,051   |                            | \$1,680,167   |                            |
| (11) Depreciation                                  | \$1,061,488   |                            | \$1,020,270   |                            | \$710,742     |                            |
| (12) Boat Business Profit (10-11)                  | \$1,609,212   |                            | \$866,781     |                            | \$969,425     |                            |
| (13) Profit at Full Equity (12+4+6)                | \$2,327,600   |                            | \$1,514,986   |                            | \$1,625,942   |                            |
| Boat Capital                                       |               |                            |               |                            |               |                            |
| (14) Fishing Gear & Equip                          | \$5,328,640   |                            | \$5,121,726   |                            | \$5,389,360   |                            |
| Licence Value                                      | \$33,152,430  |                            | \$28,338,191  |                            | \$24,758,229  |                            |
| (15) Total Boat Capital                            | \$38,481,070  |                            | \$33,459,917  |                            | \$30,147,589  |                            |
| Rate of Return on Fishing Gear & Equip (13/14*100) | 43.7%         |                            | 29.6%         |                            | 30.2%         |                            |
| Rate of Return on Total Boat Capital (13/15*100)   | 6.0%          |                            | 4.5%          |                            | 5.4%          |                            |

<sup>a</sup> 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.

<sup>b-d</sup> See Table 3-4 footnotes.

Source: BDO EconSearch (2022b)

Appendix Table 3-5 Financial performance of the SA Commercial Blue Crab Fishery, 2014/15 to 2016/17 (total fishery) <sup>a</sup>

|  | 2014/15       |                            | 2015/16       |                            | 2016/17       |                            |
|--|---------------|----------------------------|---------------|----------------------------|---------------|----------------------------|
|  | Fishery Total | Share of TBCC <sup>b</sup> | Fishery Total | Share of TBCC <sup>b</sup> | Fishery Total | Share of TBCC <sup>b</sup> |
| (1) Total Boat Gross Income                        | \$5,994,928   |                            | \$7,094,400   |                            | \$8,143,163   |                            |
| Variable Costs                                     |               |                            |               |                            |               |                            |
| Fuel   | \$629,990     | 13%                        | \$666,195     | 13%                        | \$466,408     | 12%                        |
| Repairs & Maintenance <sup>c</sup>                 | \$480,223     | 10%                        | \$518,690     | 10%                        | \$423,078     | 11%                        |
| Bait/Ice   | \$121,860     | 3%                         | \$131,621     | 3%                         | \$106,500     | 3%                         |
| Provisions   | \$36,653      | 1%                         | \$39,589      | 1%                         | \$37,342      | 1%                         |
| Labour - paid                                      | \$1,916,027   | 41%                        | \$2,102,140   | 42%                        | \$1,613,261   | 42%                        |
| (2) Labour - unpaid <sup>d</sup>                   | \$111,103     | 2%                         | \$121,895     | 2%                         | \$59,498      | 2%                         |
| Other  | \$4,066       | 0%                         | \$4,093       | 0%                         | \$7,436       | 0%                         |
| (3) Total Variable Costs                           | \$3,299,922   | 71%                        | \$3,584,223   | 72%                        | \$2,713,522   | 70%                        |
| Fixed Costs  |               |                            |               |                            |               |                            |
| Licence Fee  | \$317,673     | 7%                         | \$282,509     | 6%                         | \$305,255     | 8%                         |
| Insurance  | \$168,020     | 4%                         | \$169,121     | 3%                         | \$174,856     | 5%                         |
| (4) Interest                                       | \$436,000     | 9%                         | \$431,045     | 9%                         | \$362,390     | 9%                         |
| (5) Labour - unpaid <sup>d</sup>                   | \$74,358      | 2%                         | \$76,025      | 2%                         | \$15,370      | 0%                         |
| (6) Leasing  | \$199,029     | 4%                         | \$224,103     | 5%                         | \$47,669      | 1%                         |
| Legal & Accounting                                 | \$45,541      | 1%                         | \$45,839      | 1%                         | \$39,782      | 1%                         |
| Telephone etc.                                     | \$11,423      | 0%                         | \$11,497      | 0%                         | \$11,876      | 0%                         |
| Slipping & Mooring                                 | \$42,415      | 1%                         | \$42,693      | 1%                         | \$87,148      | 2%                         |
| Travel   | \$6,157       | 0%                         | \$6,198       | 0%                         | \$11,009      | 0%                         |
| Office & Admin                                     | \$75,261      | 2%                         | \$75,754      | 2%                         | \$86,631      | 2%                         |
| (7) Total Fixed Costs                              | \$1,375,877   | 29%                        | \$1,364,785   | 28%                        | \$1,141,986   | 30%                        |
| (8) Total Boat Cash Costs (3+7)                    | \$4,675,799   | 100%                       | \$4,949,008   | 100%                       | \$3,855,508   | 100%                       |
| Boat Gross Margin (1-3)                            | \$2,695,006   |                            | \$3,510,177   |                            | \$5,429,641   |                            |
| (9) Total Unpaid Labour (2+5)                      | \$185,461     |                            | \$197,920     |                            | \$74,867      |                            |
| Gross Operating Surplus (1-8+9)                    | \$1,504,590   |                            | \$2,343,313   |                            | \$4,362,523   |                            |
| (10) Boat Cash Income (1-8)                        | \$1,319,129   |                            | \$2,145,392   |                            | \$4,287,655   |                            |
| (11) Depreciation                                  | \$778,945     |                            | \$839,216     |                            | \$1,010,153   |                            |
| (12) Boat Business Profit (10-11)                  | \$540,184     |                            | \$1,306,177   |                            | \$3,277,502   |                            |
| (13) Profit at Full Equity (12+4+6)                | \$1,175,213   |                            | \$1,961,325   |                            | \$3,687,562   |                            |
| Boat Capital                                       |               |                            |               |                            |               |                            |
| (14) Fishing Gear & Equip                          | \$5,906,528   |                            | \$6,363,541   |                            | \$5,176,069   |                            |
| Licence Value                                      | \$25,261,684  |                            | \$25,740,137  |                            | \$31,909,439  |                            |
| (15) Total Boat Capital                            | \$31,168,212  |                            | \$32,103,678  |                            | \$37,085,507  |                            |
| Rate of Return on Fishing Gear & Equip (13/14*100) | 19.9%         |                            | 30.8%         |                            | 71.2%         |                            |
| Rate of Return on Total Boat Capital (13/15*100)   | 3.8%          |                            | 6.1%          |                            | 9.9%          |                            |

<sup>a</sup> 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. <sup>b-d</sup> See Table 3-4 footnotes.

Source: BDO EconSearch (2022b)

Appendix Table 3-6 Financial performance of the SA Commercial Blue Crab Fishery, 2017/18 to 2018/19 (total fishery) <sup>a</sup>

|  | 2017/18       |                            | 2018/19       |                            |
|--|---------------|----------------------------|---------------|----------------------------|
|  | Fishery Total | Share of TBCC <sup>b</sup> | Fishery Total | Share of TBCC <sup>b</sup> |
| (1) Total Boat Gross Income                        | \$8,371,287   |                            | \$9,141,237   |                            |
| Variable Costs                                     |               |                            |               |                            |
| Fuel   | \$470,572     | 12%                        | \$467,495     | 12%                        |
| Repairs & Maintenance <sup>c</sup>                 | \$421,366     | 11%                        | \$414,247     | 11%                        |
| Bait/Ice   | \$106,069     | 3%                         | \$104,277     | 3%                         |
| Provisions   | \$37,191      | 1%                         | \$36,562      | 1%                         |
| Labour - paid                                      | \$1,597,514   | 42%                        | \$1,582,191   | 41%                        |
| (2) Labour - unpaid <sup>d</sup>                   | \$58,917      | 2%                         | \$58,352      | 2%                         |
| Other  | \$7,633       | 0%                         | \$7,742       | 0%                         |
| (3) Total Variable Costs                           | \$2,699,261   | 70%                        | \$2,670,866   | 69%                        |
| Fixed Costs  |               |                            |               |                            |
| Licence Fee  | \$286,718     | 7%                         | \$323,411     | 8%                         |
| Insurance  | \$179,500     | 5%                         | \$182,062     | 5%                         |
| (4) Interest                                       | \$362,390     | 9%                         | \$358,201     | 9%                         |
| (5) Labour - unpaid <sup>d</sup>                   | \$15,687      | 0%                         | \$16,029      | 0%                         |
| (6) Leasing  | \$49,004      | 1%                         | \$53,512      | 1%                         |
| Legal & Accounting                                 | \$40,838      | 1%                         | \$41,421      | 1%                         |
| Telephone etc.                                     | \$12,191      | 0%                         | \$12,365      | 0%                         |
| Slipping & Mooring                                 | \$89,462      | 2%                         | \$90,739      | 2%                         |
| Travel   | \$11,302      | 0%                         | \$11,463      | 0%                         |
| Office & Admin                                     | \$88,931      | 2%                         | \$90,201      | 2%                         |
| (7) Total Fixed Costs                              | \$1,136,024   | 30%                        | \$1,179,404   | 31%                        |
| (8) Total Boat Cash Costs (3+7)                    | \$3,835,285   | 100%                       | \$3,850,270   | 100%                       |
| Boat Gross Margin (1-3)                            | \$5,672,027   |                            | \$6,470,371   |                            |
| (9) Total Unpaid Labour (2+5)                      | \$74,604      |                            | \$74,381      |                            |
| Gross Operating Surplus (1-8+9)                    | \$4,610,606   |                            | \$5,365,349   |                            |
| (10) Boat Cash Income (1-8)                        | \$4,536,002   |                            | \$5,290,968   |                            |
| (11) Depreciation                                  | \$1,098,514   |                            | \$1,173,705   |                            |
| (12) Boat Business Profit (10-11)                  | \$3,437,488   |                            | \$4,117,262   |                            |
| (13) Profit at Full Equity (12+4+6)                | \$3,848,883   |                            | \$4,528,975   |                            |
| Boat Capital                                       |               |                            |               |                            |
| (14) Fishing Gear & Equip                          | \$5,628,834   |                            | \$6,014,118   |                            |
| Licence Value                                      | \$32,803,356  |                            | \$33,722,315  |                            |
| (15) Total Boat Capital                            | \$38,432,190  |                            | \$39,736,433  |                            |
| Rate of Return on Fishing Gear & Equip (13/14*100) | 68.4%         |                            | 75.3%         |                            |
| Rate of Return on Total Boat Capital (13/15*100)   | 10.0%         |                            | 11.4%         |                            |

<sup>a</sup> 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.

<sup>b-d</sup> See Table 3-4 footnotes.

Source: BDO EconSearch (2022b)

## APPENDIX 4 Nominal Licence Fees and Rent

Appendix Table 4-1 Costs of management in the SA Commercial Blue Crab Fishery, 2002/03 to 2022/23<sup>a</sup>

|         | Licence Fee | GVP      | Fee/GVP | Catch    | Fee/Catch | Active Licences | Fee/Active Licence |
|---------|-------------|----------|---------|----------|-----------|-----------------|--------------------|
|         | (\$'000)    | (\$'000) | (%)     | (tonnes) | (\$/kg)   | (No.)           | (\$/licence)       |
| 2002/03 | 131         | 3,157    | 4.2%    | 515      | \$0.26    | 7               | \$18,782           |
| 2003/04 | 205         | 3,385    | 6.0%    | 559      | \$0.37    | 8               | \$25,589           |
| 2004/05 | 206         | 3,322    | 6.2%    | 584      | \$0.35    | 8               | \$25,695           |
| 2005/06 | 240         | 4,966    | 4.8%    | 600      | \$0.40    | 8               | \$29,965           |
| 2006/07 | 267         | 5,338    | 5.0%    | 617      | \$0.43    | 8               | \$33,325           |
| 2007/08 | 228         | 5,469    | 4.2%    | 625      | \$0.36    | 8               | \$28,490           |
| 2008/09 | 228         | 5,156    | 4.4%    | 604      | \$0.38    | 8               | \$28,490           |
| 2009/10 | 283         | 4,125    | 6.9%    | 539      | \$0.53    | 9               | \$31,472           |
| 2010/11 | 276         | 4,702    | 5.9%    | 591      | \$0.47    | 9               | \$30,699           |
| 2011/12 | 245         | 5,294    | 4.6%    | 611      | \$0.40    | 9               | \$27,172           |
| 2012/13 | 284         | 5,368    | 5.3%    | 511      | \$0.56    | 9               | \$31,538           |
| 2013/14 | 284         | 5,883    | 4.8%    | 571      | \$0.50    | 9               | \$31,538           |
| 2014/15 | 315         | 5,995    | 5.2%    | 576      | \$0.55    | 9               | \$34,956           |
| 2015/16 | 280         | 7,094    | 3.9%    | 625      | \$0.45    | 9               | \$31,087           |
| 2016/17 | 315         | 8,143    | 3.9%    | 627      | \$0.50    | 9               | \$34,953           |
| 2017/18 | 295         | 8,371    | 3.5%    | 603      | \$0.49    | 9               | \$32,830           |
| 2018/19 | 333         | 9,141    | 3.6%    | 616      | \$0.54    | 9               | \$37,032           |
| 2019/20 | 335         | 9,002    | 3.7%    | 620      | \$0.54    | 9               | \$37,196           |
| 2020/21 | 320         | 8,410    | 3.8%    | 592      | \$0.54    | 9               | \$35,565           |
| 2021/22 | 320         | 8,741    | 3.7%    | 521      | \$0.62    | 9               | \$35,609           |
| 2022/23 | 327         | n.a.     | -       | n.a.     | -         | 9               | \$36,362           |

<sup>a</sup> Values are in nominal terms.

Source: PIRSA Fisheries and SARDI Aquatic Sciences



Appendix Table 4-2 Net Economic Return (NER) <sup>a</sup> in the SA Commercial Blue Crab 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 | 3,157        | 1,829       | 913             | 179               | 147                                     | 89    |
| 2003/04 | 3,385        | 1,891       | 981             | 205               | 169                                     | 139   |
| 2004/05 | 3,322        | 1,098       | 1,952           | 385               | 378                                     | -491  |
| 2005/06 | 4,966        | 1,377       | 1,942           | 376               | 370                                     | 901   |
| 2006/07 | 5,338        | 1,479       | 1,810           | 349               | 347                                     | 1,353 |
| 2007/08 | 5,469        | 1,492       | 2,053           | 552               | 291                                     | 1,081 |
| 2008/09 | 5,156        | 1,480       | 1,838           | 485               | 254                                     | 1,100 |
| 2009/10 | 4,125        | 1,251       | 1,698           | 345               | 187                                     | 644   |
| 2010/11 | 4,702        | 1,442       | 1,100           | 964               | 484                                     | 712   |
| 2011/12 | 5,294        | 1,530       | 1,110           | 916               | 460                                     | 1,278 |
| 2012/13 | 5,368        | 1,504       | 1,145           | 908               | 456                                     | 892   |
| 2013/14 | 5,883        | 1,798       | 1,750           | 711               | 539                                     | 1,086 |
| 2014/15 | 5,995        | 2,101       | 1,940           | 779               | 591                                     | 583   |
| 2015/16 | 7,094        | 2,300       | 1,995           | 839               | 636                                     | 1,324 |
| 2016/17 | 8,143        | 1,688       | 1,761           | 1,010             | 518                                     | 3,166 |
| 2017/18 | 8,371        | 1,672       | 1,756           | 1,099             | 563                                     | 3,282 |
| 2018/19 | 9,141        | 1,657       | 1,786           | 1,174             | 601                                     | 3,923 |
| 2019/20 | 9,002        | 2,417       | 1,855           | 679               | 737                                     | 3,314 |
| 2020/21 | 8,410        | 2,600       | 1,930           | 741               | 804                                     | 2,335 |
| 2021/22 | 8,741        | 2,725       | 2,102           | 804               | 873                                     | 2,237 |

<sup>a</sup> Adjusted for sample bias. Values are in nominal terms.

Source: BDO EconSearch analysis



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