



ECONOMIC AND SOCIAL INDICATORS FOR THE SOUTH AUSTRALIAN MARINE SCALEFISH FISHERY 2021/22

A Report for the Department of
Primary Industries and Regions

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ABBREVIATIONS

ABS	Australian Bureau of Statistics
CPI	Consumer Price Index
FRDC	Fisheries Research and Development Corporation
fte	full time equivalent
GRP	gross regional product
GSP	gross state product
GSV/KI	Gulf St Vincent/Kangaroo Island
GVP	gross value of production
ITQ	individual transferable quota
MFA	Marine Fisheries Association
MSF	Marine Scalefish Fishery
NER	net economic return
PIRSA	Department of Primary Industries and Regions
R&M	repairs and maintenance
SA	South Australia
SARDI	South Australian Research and Development Institute
VLSP	Voluntary Licence Surrender Program

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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 Marine Scalefish Fishery (MSF) 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.

South Australia's transformative reform of the commercial MSF came into effect on 1 July 2021 in order to strengthen the long-term financial and ecological sustainability of the industry. The reform included the establishment of four fishing zones and an individual transferable quota (ITQ) management system for King George Whiting, Snapper, Southern Garfish and Southern Calamari. Prior to 1 July 2023 the Government provided funding to support the removal of fishing licences under a voluntary surrender scheme, allowing fishers to exit the fishery prior to the reform taking place. It also involved the separation of the commercial taking of Vongole and Sardine from the MSF and the creation of these as new fisheries under their own regulations. This report provides economic and social indicators for the first full year since the introduction of these changes.

Economic Performance Indicators

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

Table ES-1 MSF performance indicators, reference points or triggers and three year trend

Performance Indicator	Reference Points/Triggers	3 year Trend
<p>1. Contribution of fishery to local economic activity (measured as trends in local and regional expenditure by fishers)</p> <p>Proportion of direct and indirect employment in a region dependent on fishing</p> <p>Level of community support activities</p>	<p>Downward trend in employment, expenditure and community support activities.</p>	<p>Decreasing trend in contribution to GDP (down 19% in 3yrs to 2021/22).</p> <p>Decreasing trend in household income (down 28%)</p> <p>Decreasing trend in real output (down 24%).</p> <p>Decreasing trend in employment (down 43%).</p> <p>Decreasing trend in community support activities (down 33% from the previous survey estimates).</p>
<p>2. Key economic indicators: operating surplus, profit at full equity, rate of return on total boat capital and licence value</p>	<p>Declining trends in economic indicators and licence value.</p>	<p>Decreasing trend in real GOS (down 4% in 3yrs to 2021/22).</p> <p>Increasing trend in real profit at full equity (up 7%).</p> <p>Decreasing trend in rate of return on total boat capital (2.9% in 2018/19 and 1.6% in 2021/22).</p>

Performance Indicator	Reference Points/Triggers	3 year Trend
		Increasing trend in real licence value (including quota) (over double in 3yrs to 2021/22).
3. Delivery of annual economic reports assessing economic performance of the fishery from periodic economic surveys Social fishery surveys undertaken periodically and reported when data is available	N/A	See whole report
4. Provision of a livelihood opportunity: How is the ability of fishers to access livelihood changing	Cost of entry and of maintaining access have risen relative to returns from the fishery for more than one year.	Decreasing livelihood opportunity as the cost of entry increased relative to returns in 2020/21 and 2021/22.
5. Perceptions of flexibility: fishers believe fisheries management processes are flexible enough to adapt to changing conditions (fisher survey)	The proportion of fishers who think fisheries management is flexible enough decreasing over time.	Increasing trend 24% of the survey respondents in 2023 agreed that fisheries management is flexible enough to allow fishers to adapt to changing conditions (up from 12% in 2017 and 19% in 2020).
6. How equitable/fair fishers feel the processes and outcomes of fisheries management are (fisher survey)	>50% of fishers believe that they are treated unfairly on more than one of the relevant survey questions.	Over 50% of all survey participants indicated that they are treated unfairly on 3 of the 5 relevant survey questions (an improvement from all 5 survey questions in the 2017 survey).
7. Proportion of fishers who believe that, overall, most fishers comply with fishing rules (fisher survey)	There is an ongoing decline in the proportion of fishers who agree with the statement 'most fishers comply with fishing rules'.	Decreasing trend 74% of survey participants agreed or strongly agreed that most commercial fishers comply with rules and regulations and fish responsibly (down from 78% in 2020 but up from 50% in 2017).
8. Extent fishers accurately understand regulations (fisher survey)	There is an ongoing decline in the proportion of fishers who correctly identify rules and regulations over time.	No change Around half of survey participants in 2020 and 2023 agreed that fishing rules and regulations are easy to understand (although up from 32% in 2017).

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

Indicator	2018/19	2019/20	2020/21	2021/22
Catch	2,032t	2,067t	1,618t	1,851t
GVP	\$21.5m	\$20.8m	\$19.1m	\$20.7m
Active licences (no.)	276	269	241	191
Fee/licence	\$6,708	\$5,270	\$3,948	\$3,440
Fee/GVP	13.8%	14.3%	15.2%	12.3%
Return on fishing gear and equip	6.2%	7.6%	12.1%	6.1%
Return on total capital	2.9%	3.2%	4.8%	1.6%
Licence Value ^b	\$207,437	\$228,624	\$240,492	\$556,749
Gross state product (GSP)	\$40.3m	\$42.2m	\$39.1m	\$32.8m
Employment	482 fte	484 fte	469 fte	275 fte
NER	-\$5.1m	-\$4.1m	-\$1.8m	\$0.7m
NER/GVP	-23%	-20%	-9%	3%

^a This table presents estimates in real 2021/22 dollars (excluding catch, active licences and employment).

^b Licence value for 2021/22 includes the value of quota (\$355,103).

Catch and Gross Value of Production

Total catch in the fishery followed a declining trend between 2002/03 and 2021/22. The fall, from 4,175t to 1,851t, is due to a decrease in catch of a number of key species including Australian Salmon (in 2020/21), Shark, King George Whiting and Garfish, and increased pressure from other sectors that share the same resource. Catch of Snapper followed an increasing trend between 2003/04 and 2010/11, although it has declined significantly since and the fishery was closed to taking Snapper in November 2019 for a period of six years, with some exceptions ¹.

The value of catch in the MSF fluctuated between years but also followed a decreasing trend between 2002/03 and 2021/22, falling in real terms from \$50.2 million to \$20.7 million. The fall in GVP is attributable to the decline in catch of key species as the average real price of most of the key species increased over the period, and the average price for the fishery as a whole actually declined slightly. Between 2002/03 and 2021/22, the 48 per cent increase in nominal average price of Marine Scalefish species was equivalent to a 7 per cent real price decline.

Management Costs

Licence fees as a percentage of GVP fluctuated over the period 2002/03 to 2021/22 but followed an increasing trend overall, from 4.9 per cent to 12.3 per cent. This was the result of a reduction in GVP (59 per cent), and despite little change in real aggregate licence fees (2 per cent increase), over the same period.

¹ Except for the South East fishing zone which has been and will be open for the entire period.

The average management cost per licence holder, across all licence types, declined from \$4,680 in 2002/03 to \$3,440² in 2021/22, in real terms. In 2021/22, the average management cost per net entitled licence was \$7,710 and for line only licences it was \$2,772 (including the fee relief provided for both the Snapper closure and the reform). From 2022/23 only licence holders who hold Snapper quota will receive 50 per cent fee relief on their base fees.

Financial Performance Indicators

The decline in the total number of active licence holders in the fishery between 2002/03 and 2021/22 is due to natural attrition in the restricted MSF, the licence amalgamation scheme, the 2005 voluntary net buyback scheme, the buy-back of licences associated with the implementation of marine parks and the most recent voluntary licence surrender program (VLSP) and ITQ introduction. As a result of the decrease in the number of active licence holders, and despite a decrease in fishery GVP, the average income per boat in the fishery increased from almost \$86,000 in 2002/03 to \$119,000 in 2021/22 (real 2021/22 dollars).

Despite the number of licence holders decreasing significantly between 2020/21 and 2021/22 (98 licences were surrendered as part of the VLSP³), the average income per boat in the fishery did not follow a corresponding increase. This appears to be the result of the 2023 survey data being much more representative than the last two surveys and has reduced the bias towards higher income respondents. It may also be due, in part, to a change in the composition of the survey sample, i.e. a higher proportion of licence holders and a corresponding lower proportion of fishers with net entitlements in 2023 compared to 2020⁴. Also, assuming those active licence holders in 2020/21 who remained in the fishery stayed active in 2021/22 then 48 of the 98 licences removed would have been considered inactive which would have been a contributing factor in the average income per boat in the fishery not increasing.

It should be noted that total allowable commercial catches (TACCs) for the four key species were not reached in 2021/22. However, this is common after a fishery restructure where the fishery is still adjusting and operators are restructuring their businesses. Additionally, licence holders who were predominantly issued Snapper quota and are impacted by the Snapper closure, cannot take other key species (Garfish, King George Whiting and Southern Calamari) unless they have quota. Another factor for lower boat income in 2021/22 relates to the fact that every licence holder receiving a base allocation of quota for all four species in all regions resulting in average quota holdings that are not viable to catch (MFA pers. comm.).

Labour costs accounted for the largest share of total cash costs (41 per cent) in 2021/22. Labour costs are comprised of payments to licence owners and crew as well as an imputed wage to those licence owners and other family members who are not paid a wage directly by the business. Other significant cash costs were fuel (16 per cent), repairs and maintenance (11 per cent) and office and administration (7 per cent).

Between 2002/03 and 2021/22, the average price of Marine Scalefish species decreased by approximately 7 per cent in real terms. The average costs of catching Marine Scalefish species followed an increasing trend over the period, increasing by 31 per cent in real terms. Considering this together with the fall in catch suggests a cost-price squeeze for the average business. Whilst this statement holds for the 20-year period, it is important to note that the cost-price squeeze eased between 2020/21 and 2021/22 with the significant reduction in labour costs associated with the VLSP and ITQ implementation.

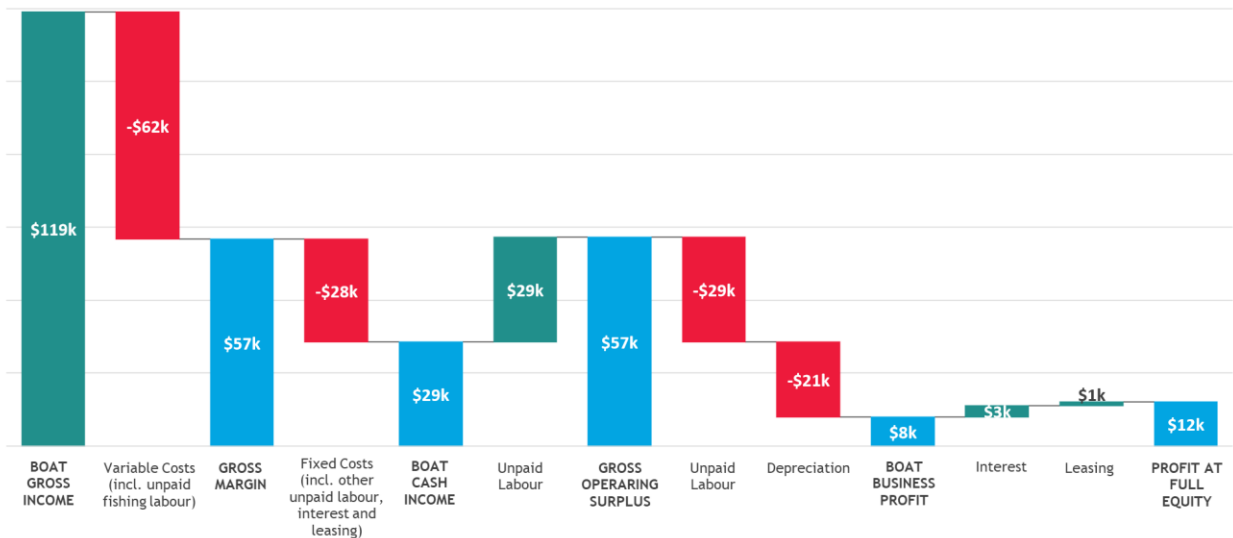
² The average amount for 2021/22 includes a base fee reduction as a result of the Snapper recovery measures.

³ A further two licences were surrendered in 2022/23 bringing the total number of licences surrendered through the VLSP to 100.

⁴ See Appendix 1 for how the survey bias has been mitigated.

Changes in each of the profitability measures for the fishery were closely related to changes in the average income earned. Profitability measures followed a decreasing trend between 2002/03 and 2005/06 and an increasing trend since. For example, average profit at full equity was estimated to be around -\$25,000 in 2005/06, which increased to \$12,000 in 2021/22 (real 2021/22 dollars). The calculation of profit at full equity is illustrated in Figure ES-1 for 2021/22.

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



Overall, the average rate of return to total capital for the fishery has fluctuated year to year but has generally followed an increasing trend (from -1.4 per cent in 2002/03 to 1.6 per cent in 2021/22). The average value of licences in the fishery increased steadily between 2002/03 and 2008/09 despite year to year variation. Between 2008/09 to 2013/14, licence values followed a declining trend but increased slightly through to 2020/21 in real terms. The rise in licence value in recent years, prior to the VLSP, was possibly in response to raised expectations around the scheme. The estimate of licence value was adjusted to include the value of quota for key species allocated for the first time in 2021/22 and corresponds with the sharp increase in value for that year.

Economic Contribution of the Fishery

Output, household income and GSP all fluctuated in cycles of several years with a downward trend over the period. There was also a decline in the employment contribution of the fishery over the whole period. This is mainly due to a decrease in the number of licence holders and a general decline in the fishery overall.

In 2021/22, the total MSF related contribution to GSP in SA was \$32.8 million, including \$13.1 million generated by fishing directly, \$2.3 million generated by downstream activities (transport, processing, retailing, etc.) and \$17.4 million generated in other sectors (input suppliers to the fishing industry). In 2021/22, the MSF supported employment of around 117 full-time equivalents (fte) and downstream activities supported employment of around 25 fte jobs state-wide. Flow-on business activity was estimated to support a further 133 fte jobs state-wide. The total employment contribution in SA was estimated to be 275 fte jobs.

There was decline in all economic contribution indicators between 2020/21 and 2021/22 as a result of the significant reduction of licences as part of the VLSP and the introduction of ITQ management arrangements. This is an expected outcome as reducing the number of businesses means the fishery incurs less fixed costs in aggregate, which decreases flow-on economic contribution (due to less spending into the economy) and increases net economic return received by licence holders (due to the fishery having lower aggregate costs relative to revenue).

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 fluctuated between years but has improved in recent years to be positive at \$0.7 million. Continuing high licence values, previous years of negative NER and the lifestyle/part-time nature of the fishery may lead the method for calculating NER to produce an underestimate for the fishery. Under the assumptions of lower opportunity cost for capital and labour⁵, NER would be \$3.7 million in 2021/22.

NER expressed as a percentage of GVP is a useful indicator for analysing a fishery over time and for comparing different fisheries. The indicator shows a decline between 2002/03 (13 per cent) and 2007/08 (-36 per cent) and an increase since (3 per cent in 2021/22).

MSF Reform

This report provides economic and social indicators for the first full year since the introduction of the changes as part of the transformative reform of the commercial MSF (the reform). The licence holder survey undertaken in 2023 included a set of questions that collected licence holder perceptions of the reform. Of the 191 active licences in the fishery in 2021/22, responses to the survey questions relating to the reform were received from 78 licences (41 per cent of active licences). Concerns from licence holders about the future of the MSF were echoed throughout the survey, with many unsatisfied with the reform process, in particular the allocation of quota for the quota species (King George Whiting, Snapper, Garfish and Southern Calamari).

There is a widely held view in the MSF that PIRSA has not handled the Reform process well. The survey indicated that 86 per cent of respondents disagreed with the statement ‘PIRSA handled the Reform process well’. However, 13 per cent were neutral or agreed to some extent.

For some fishers, the process has clearly been cause for deep distress. However, this is not the case for all MSF fishers. A significant proportion of fishers have also experienced either positive or neutral impacts on their business and wellbeing. Patterns in fisher wellbeing mirror the business impacts, with similar proportions of fishers reporting negative wellbeing impacts.

The survey results also indicate that the reform has not had a positive impact on the future outlook of MSF fishers at this stage. However, it is important to recognise that despite some positive changes occurring in the indicators for 2021/22 (e.g. improvements in NER and licence values), not all of the expected positive effects of the reform have yet been realised. For the positive economic effects to be felt, firstly those depleted fish stocks (i.e. Snapper and Garfish stocks in the Spencer Gulf and Gulf St Vincent) must recover and, as the Snapper closure has demonstrated, this takes time to occur. Secondly, economic changes (e.g. consolidation of businesses, increase in technical efficiency, facilitation of vertical integration, lower labour

⁵ That is, a zero per cent risk premium and two-thirds opportunity cost of labour.

costs, rent payments to quota holders, increase in economic yield, etc.) related to the implementation of ITQ management arrangements need to be realised. Thirdly, the transfer of quota and establishment of quota holdings at licence holder/fishing business level may take some time to resolve so that businesses can acquire the level of quota holdings to run efficient fishing businesses. Finally, relief from the extra pressure and competition applied from competing sectors in regards to King George Whiting and Southern Calamari.

Contrary to the initial negative perceptions above, the economic data reveal a common pattern seen after the implementation of ITQ management arrangements. Fishery income has been fairly stable as a result of limited by stock productivity or slightly higher because of price recovery post the COVID-19 pandemic. However, the VLSP and ITQ arrangements have enabled the industry to contract with fewer active licences and almost 100 fewer people employed in fishing businesses with associated lower labour costs. The labour cost savings have already flowed through to a higher NER and a significant capital gain in licence value (mostly as a result of quota value) for those remaining in the fishery.

Social Indicators

The social indicators produced from the 2023 licence holder survey showed that MSF fishers have a high level of satisfaction with their lives but lower levels of satisfaction with many aspects of fishery management. The survey was undertaken on licence holders remaining in the fishery following the VLSP.

They had high levels of satisfaction with their *'standard of living'* (74 per cent satisfaction level) and their *'personal relationships'* (79 per cent satisfaction level). However, they also indicated lower levels of satisfaction with their *'future security'* (42 per cent satisfaction level). Since 2020, fisher satisfaction with feeling a part of their community declined the most significantly (19 per cent). When asked to compare their satisfaction to three, five and ten years ago, the majority of respondents felt their satisfaction was lower or much lower now compared to three, five and ten years ago.

Only 24 per cent of licence holders indicated that fisheries management is flexible enough to allow fishers to adapt to changing conditions. However, this was a significant improvement on the results in 2020 with 18 per cent more fishers indicating agreeance with the statement. Responses indicated that 39 per cent agreed with the statement *'I understand how decisions about fisheries management are made'* and 47 per cent of licence holders agreed *'if I want to have a say in the management of the fishery I know how to'*. In comparison to the 2020 survey, these indicators have seen a significant decline, with a drop of 26 and 32 per cent of licence holders agreeing with the statements, respectively.

Approximately 75 per cent of respondents felt that the processes used to make decisions about fisheries management and allocation of catch were unfair or very unfair. Notably, the proportion of respondents between the 2020 survey and 2023 survey stating they felt the processes used to make decisions about fisheries management and allocation of catch were unfair or very unfair increased by 50 per cent.

Although the survey indicated that 74 per cent of licence holders agreed that *'most fishers comply with fishing rules and regulations'* only 46 per cent agreed that *'fishing rules and regulations are easy to understand'* and 35 per cent agreed *'fishers are provided with adequate training and advice'*. This indicates that while fishers try to comply with fishing rules and regulations, survey respondents felt it creates a challenge when trying to fish in a more efficient and viable way. Noting that the high number of species caught and many and varied gear types used in the MSF are complicating factors together with a range of both input and output controls.

1. INTRODUCTION

Under the *Fisheries Management Act 2007*, all the major fisheries in South Australia (SA) operate in accordance with fishery management plans that determine the primary management objectives of the fishery. Economic performance indicators are a feature of these plans and annual reports on them are required for the Minister for Primary Industries and Regional Development to meet the obligations of Section 7 of the *Fisheries Management Act 2007*. The *Management Plan for the South Australian Commercial Marine Scalefish Fishery* came into effect on 1 October 2013 for a period of 10 years (PIRSA 2013). A notice of intention to prepare a new management plan for the South Australian Commercial Marine Scalefish Fishery has been issued (PIRSA n.d.).

This report is the twenty-fifth annual economic indicators report for the SA Marine Scalefish Fishery (MSF). The objective of this report, *Economic Indicators for the South Australian Marine Scalefish Fishery 2021/22*, is to provide an update of the fishery's most recent economic and social performance based on the eighth licence holder survey, undertaken in 2023.

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

- gross value of production (catch and price)
- the cost of management of the fishery
- financial performance indicators (income, costs, profit and return on investment)
- the economic contribution of the fishery
- net economic return
- external factors that influence the economic condition of the fishery
- prices for MSF products in SA and other domestic markets
- contribution to the community
- social and demographic indicators.

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

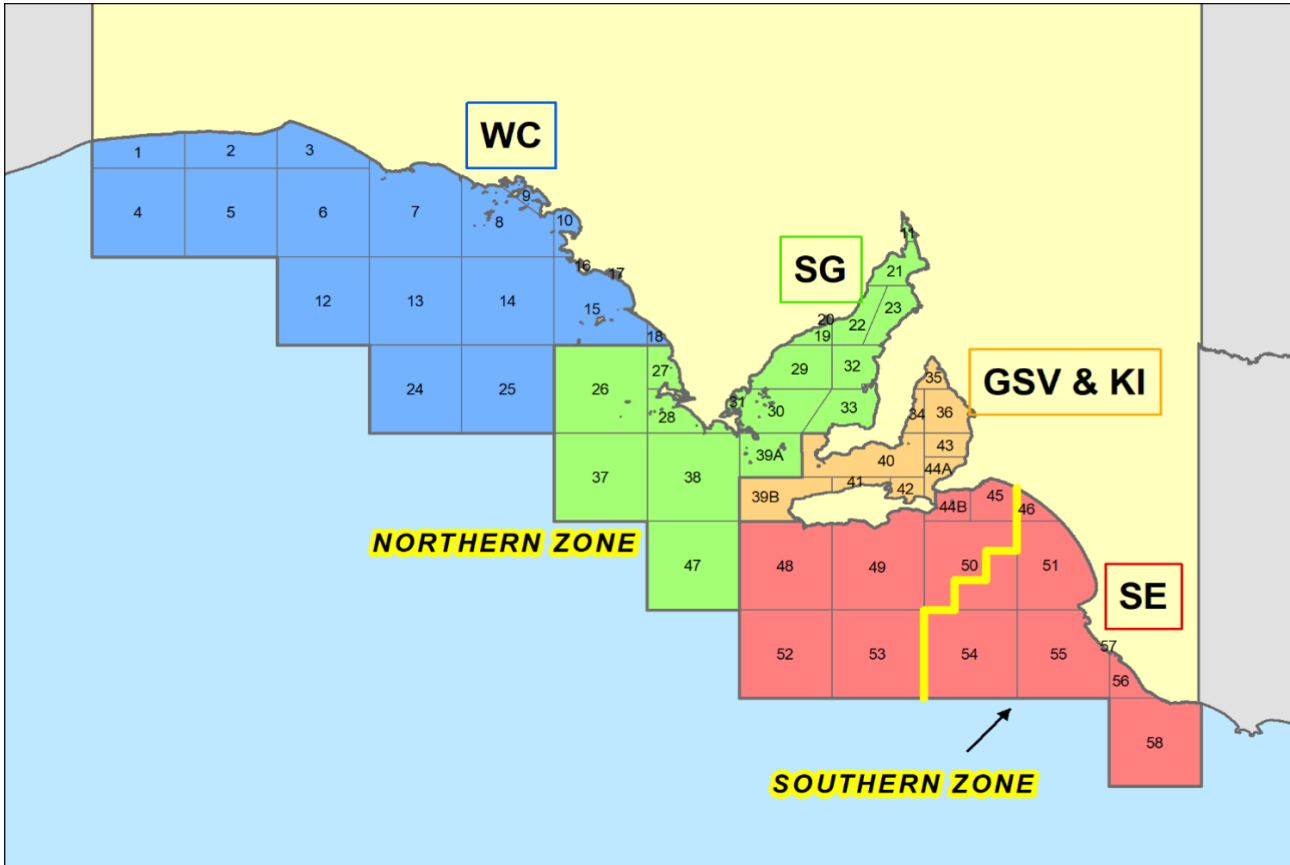
Financial performance estimates and economic contributions are presented on a regional basis in accordance with PIRSA's zones of management as illustrated in Figure 1-1.

In 2014, the economic indicator surveys of commercial fisheries were extended to include the collection of social indicators. The results of the social indicators component of the 2023 survey are detailed in Section 5.

South Australia's transformative reform of the commercial MSF came into effect on 1 July 2021 in order to strengthen the long-term financial and ecological sustainability of the industry. The reform included the establishment of four fishing zones (see Figure 1-1) and an individual transferable quota (ITQ) management system for King George Whiting, Snapper, Southern Garfish and Southern Calamari. Prior to 1 July 2023 the Government provided funding to support the removal of Fishing Licences under a Voluntary Surrender scheme, allowing fishers to exit the Fishery prior to the reform taking place. It also involved the separation of the commercial taking of Vongole and Sardine from the MSF and the creation of the new fisheries under

their own regulations. This report provides economic and social indicators for the first full year since the introduction of these changes.

Figure 1-1 SA MSF zones of management^a



^a Northern Zone and Southern Zone refers to Northern Zone Rock Lobster Fishery and Southern Zone Rock Lobster Fishery; yellow line delineates boundary between the two Rock Lobster fisheries.
Source: PIRSA 2021

2. METHOD OF ANALYSIS AND DEFINITION OF TERMS

2.1. Survey of Licence Holders, 2021/22

The questionnaire for the survey of licence holders in 2023 was based on previous economic indicator surveys. The questionnaire for the survey was drafted by BDO EconSearch and subsequently modified after consultation with members of the Marine Fishers Association (MFA). Additionally, since the MSF has recently undergone significant reform, members of the MFA requested the collection of information to understand fisher perceptions of the reform, which were included and are reported on in Section 4.1.2.

The sampling frame for the survey included all active licence holders in the MSF (191 in total in 2021/22). The time period for which information was sought was the 2021/22 financial year. All licence holders were sent an introductory email outlining the project and seeking their support. Telephone calls were then made to all licence holders to seek their participation in the survey. Completed questionnaires were received from a combination of methods including online and over the telephone.

A total of 71 usable responses were received representing 37 per cent of the total active licence holders in the fishery⁶. Of the 191 active licence holders in the fishery, 120 did not complete the survey for the following reasons:

- could not be contacted
- minimal fishing or not interested in participating in the survey
- were unable or unwilling to provide sufficient detail about their fishing operations to make the survey data usable.

Whilst the target sample size is a 50 per cent response rate in other smaller fisheries, 37 per cent is a reasonable sample for the larger MSF, noting that the response rate was 35% (95 returns) in the 2020 survey, 32% (90 returns) in the 2017 survey and 39% (120 returns) in the 2014 survey. A fairly representative sample was obtained in each region, licence type and days fished, with very few outliers. This gives us confidence in the data provided by the participants.

2.2. Definition of Terms

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

⁶ A number of licence holders (16 in total) did not fish in 2021/22 and were, therefore, excluded from the population of active licence holders. A licence holder is considered 'active' if they fished for one day or more during the 2021/22 financial year.

- fishing equipment, purchase and repairs (nets, lines, etc.)
- repairs & maintenance: ongoing (slipping, painting, overhaul motor).

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.

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.

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

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

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

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

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.

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.

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

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.

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.

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.

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 and where the licence fee is not intended to include any access payment or royalty, 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).

3. ECONOMIC INDICATORS FOR THE SA MARINE SCALEFISH FISHERY

3.1. Economic Objectives of the SA Marine Scalefish Fishery

According to the management plan for the SA Marine Scalefish Fishery (PIRSA 2013), management of the fishery has four key goals:

1. *Ensure the Marine Scalefish Fishery resources are harvested within ecologically sustainable limits.*
2. *Optimum utilisation and equitable distribution of the Marine Scalefish Fishery resources.*
3. *Minimise impacts on the ecosystem.*
4. *Cost effective and participative management of the Marine Scalefish Fishery.*

In order to achieve these goals, the management plan sets out specific biological, ecological, social and economic objectives for the fishery. The economic and social objectives of the SA MSF, as described in the management plan for the fishery, are summarised in Table 3-1. These performance indicators are presented in the following sections of this report. A notice of intention to prepare a new management plan for the South Australian Commercial Marine Scalefish Fishery has been issued (PIRSA n.d.).

Table 3-1 Economic and social objectives of the SA MSF ^a

Goal	Objective	Strategies	Performance Indicator	Description	Trigger Reference Point
Goal 2: Optimum utilisation and equitable distribution of the Marine Scalefish Fishery resources	2b. Increase the flow of economic and social benefit from the fishery to the broader community	2b (i). Positively influence fisheries related socioeconomic benefits for regional communities 2b (ii). Communicate information about ESD outcomes of the fishery to the broader community in a timely and publicly assessable manner 2b (iii). Develop and maintain positive relationships with the regional communities in the area of the fishery	Contribution of fishery to local economic activity (measured as trends in local and regional expenditure by fishers) Proportion of direct and indirect employment in a region dependent on fishing Level of community support activities	Economic Indicator Report (annual)	Downward trends in employment, expenditure and community support activities
	2c. Improve economic efficiencies and financial returns within the constraints of sustainability imperatives	2c (i). Develop and implement management arrangements that allow commercial operators to maximise operational flexibility, economic efficiency, value and returns 2c (ii). Provide opportunities for diversification and developmental fishing	Key economic indicators: operating surplus, profit at full equity and rate of return on total boat capital Licence value		Declining trends in economic indicators and licence value
	2d. Monitor the economic and social performance of the fishery and ensure the collection of economic and social data	2d (i). Undertake periodic economic and social surveys of the commercial fishery to assess economic and social performance against a set of economic and social indicators 2d (ii). Undertake and further refine indicators and trigger reference points as more information becomes available	Delivery of annual economic reports assessing economic performance of the fishery from periodic economic surveys Social fishery surveys undertaken periodically and reported when data is available	An economic and social indicator report is currently prepared annually)	N/A
	2f. Provide flexible	2f (i). When implementing management changes, where possible ensure that the	Provision of a livelihood opportunity: How is the ability of		Cost of entry and of maintaining access have risen

Goal	Objective	Strategies	Performance Indicator	Description	Trigger Reference Point
Goal 4: Cost-effective and participative management of the Marine Scalefish Fishery	opportunities to ensure fishers can maintain or enhance their livelihood	management framework does not unnecessarily reduce ability of fishers to successfully run a business 2f (ii). When implementing management changes where possible enable adequate and secure access to fish stocks that is flexible	fishers to access livelihood changing Perceptions of flexibility: fishers believe fisheries management processes are flexible enough to adapt to changing conditions (fisher survey)		relative to returns from the fishery for more than one year The proportion of fishers who think fisheries management is flexible enough and is decreasing over time
	2g. Ensure equitable treatment and access for fishers	2g (ii). Consultation process designed and undertaken for input of different fishers and stakeholders	How equitable/fair fishers feel the processes and outcomes of fisheries management are (fisher survey)		>50% of fishers believe they are treated unfairly on more than one of the relevant survey questions
	4c. Maximise stewardship of fisheries resources	4c (i). Where possible simplify and standardise the regulatory rules, to ensure the rules and easier to comply with, easier to enforce and that fisheries management will be more efficient Ensure any management changes (and reasoning) are communicated with fishers	Proportion of fishers who believe that, overall, most fishers comply with fishing rules (fisher survey) Extent fishers accurately understand regulations (fisher survey) Fishers find it easy to comply with fishing rules and regulations (fisher survey)		There is an ongoing decline in the proportion of fishers who agree with the statement 'most fishers comply with fishing rules' There is an ongoing decline in the proportion of fishers who correctly identify rules and regulations over time There is an ongoing decline in the proportion of fishers who agree with the statement 'Fishers find it easy to comply with fishing rules and regulations'

Indicators reported in economic reports

Trigger points that can be calculated from reported economic indicators

^a With reference to those objectives reported on in this report.
Source: PIRSA Fisheries and Aquaculture (2013)

3.2. Catch and Gross Value of Production

The principal information used to estimate the gross value of production for the MSF is derived from the catch and effort database provided by SARDI Aquatic Sciences. Production figures are collated from the monthly fishing returns provided by commercial fishers while average values are based on Adelaide market prices. Table 3-2 shows the catch of Marine Scalefish species each year since 2016/17, together with the estimated GVP and the average unit values.

Care is required in using the catch and effort database to derive the GVP for the MSF. SARDI's estimates of the GVP of fish harvested from the MSF are potentially underestimated because average values are based on wholesale prices received at the Adelaide market. Survey information indicated that a significant proportion of some species are marketed either at the Sydney or Melbourne markets, or to local fish processors and restaurants, where prices received are often higher than can be obtained at the Adelaide market. For the purpose of this study, SARDI's estimates of GVP have been re-valued using price data obtained from fishers.

The catch and gross value of the major Marine Scalefish species shown in Table 3-2 represent the catch of all Marine Scalefish species taken by licence holders in the MSF. Adjustments have been made to exclude the catch and value of Blue Swimmer Crabs (except for those taken by MSF licence holders on the West Coast), Sardines and Vongole taken by specialist fishers which are reported in the economic indicator reports for those fisheries⁷. Total catch also excludes catch from the Miscellaneous Fishery (e.g. Giant (King) Crabs, Seaworms and Fish Roe) and Commonwealth managed fisheries.

The total catch of Marine Scalefish species in 2021/22 was 1,851 tonnes, a 14 per cent increase compared with the previous year (1,618 tonnes) but still lower than the average for the 20 year period 2002/03 to 2021/22 (2,750 tonnes). The gross value of production of the MSF in 2021/22 was \$20.7 million, 8 per cent higher than in 2020/21 (\$19.1 million). This was mostly a result of an increase in catch of key species (except for Snapper) and despite a small average price decline across all species.

The long-term trends in the catch of six of the main species are shown in Figure 3-1. Notable trends include:

- a steady decrease in King George Whiting, Garfish, Australian Herring and Shark catch
- a considerable increase in the catch of Snapper from 2003/04 to 2010/11, then a decline through to 2021/22, significantly impacted between 2019/20 and 2021/22 by the state wide ban on the taking of Snapper⁸.
- significant annual variability in Southern Calamari catch with no clear trend.

⁷ No economic indicators reporting has been prepared for the Vongole Fishery.

⁸ Except for in the South East of SA.

Table 3-2 Catch and value of catch of the SA MSF, 2016/17 to 2021/22 ^a

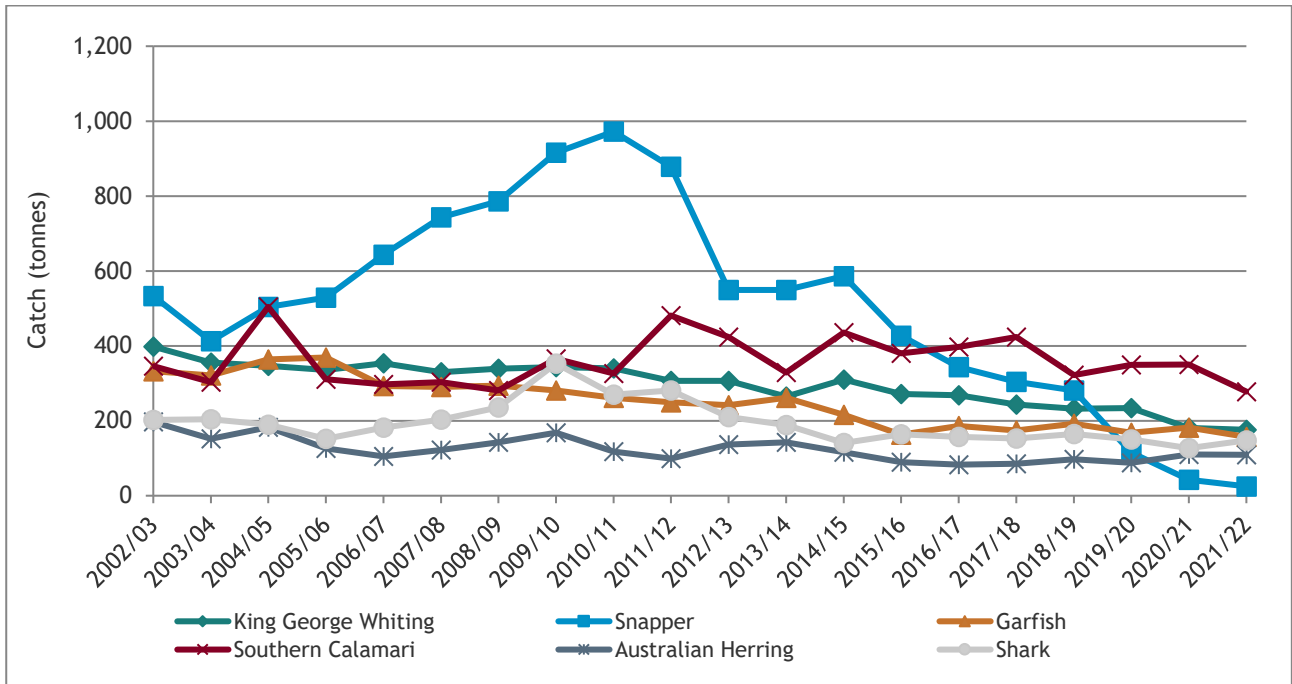
Species	2016/17			2017/18			2018/19			2019/20			2020/21			2021/22		
	catch	value	avg value	catch	value	avg value	catch	value	avg value	catch	value	avg value	catch	value	avg value	catch	value	avg value
	'000 kg	\$,000	\$/kg	'000 kg	\$,000	\$/kg	'000 kg	\$,000	\$/kg	'000 kg	\$,000	\$/kg	'000 kg	\$,000	\$/kg	'000 kg	\$,000	\$/kg
King George whiting	268	5,034	\$18.78	243	4,794	\$19.73	232	4,644	\$20.02	234	4,349	\$18.59	181	3,599	\$19.89	176	3,891	\$22.11
Snapper	343	4,274	\$12.46	304	3,608	\$11.87	281	3,140	\$11.18	115	1,307	\$11.36	43	555	\$12.91	25	451	\$18.05
Southern calamari	397	6,293	\$15.85	424	7,261	\$17.13	322	5,620	\$17.45	349	6,243	\$17.89	350	6,299	\$18.00	278	6,627	\$23.84
Garfish	186	2,033	\$10.93	174	1,906	\$10.95	192	1,985	\$10.34	168	1,816	\$10.81	182	2,332	\$12.81	157	2,068	\$13.17
Shark	157	1,327	\$8.45	153	1,375	\$8.99	165	1,504	\$9.11	150	1,390	\$9.26	127	1,313	\$10.34	148	1,773	\$11.98
Australian Salmon	270	683	\$2.53	321	784	\$2.44	182	281	\$1.54	189	303	\$1.60	90	238	\$2.65	323	787	\$2.44
Sand crabs	50	516	\$10.33	35	390	\$11.13	64	532	\$8.32	51	419	\$8.21	63	616	\$9.78	56	512	\$9.14
Yellowfin whiting	133	1,269	\$9.54	140	1,196	\$8.54	126	1,141	\$9.05	132	1,154	\$8.74	81	976	\$12.05	125	1,250	\$10.00
Blue crabs	47	656	\$13.97	31	480	\$15.48	47	546	\$11.61	51	588	\$11.52	74	829	\$11.21	58	764	\$13.18
Australian herring (tommy ruff)	83	387	\$4.66	85	343	\$4.04	97	341	\$3.51	88	355	\$4.04	110	449	\$4.08	109	404	\$3.70
Snook	48	275	\$5.74	42	258	\$6.15	41	237	\$5.78	39	248	\$6.36	32	214	\$6.68	24	170	\$7.08
Leatherjackets	328	1,362	\$4.15	121	858	\$7.09	148	611	\$4.13	366	1,624	\$4.44	163	659	\$4.05	267	1,160	\$4.35
Other msf species	148	990	\$6.69	171	1,216	\$7.11	135	961	\$7.12	135	967	\$7.16	122	1,048	\$8.59	105	819	\$7.80
TOTAL ^b	2,458	25,101	\$10.21	2,244	24,469	\$10.90	2,032	21,542	\$10.60	2,067	20,761	\$10.04	1,618	19,128	\$11.82	1,851	20,677	\$11.17

^a SARDI estimates of GVP have been re-valued to reflect price differentials between Adelaide, interstate and local markets. GVP and Price are presented in real 2021/22 dollars.

^b Does not include Sardines, Vongole or Blue Crab Pot Fishery catch (but does include Blue Crabs taken by Marine Scalefish licence holders). Also excludes catch from the Miscellaneous Fishery (e.g. Giant (King) Crabs, Seaworms and Fish Roe) and Commonwealth managed fisheries.

Source: SARDI Aquatic Sciences, 2023 survey data and BDO EconSearch analysis

Figure 3-1 Catch of selected major Marine Scalefish species, SA, 2002/03 to 2021/22

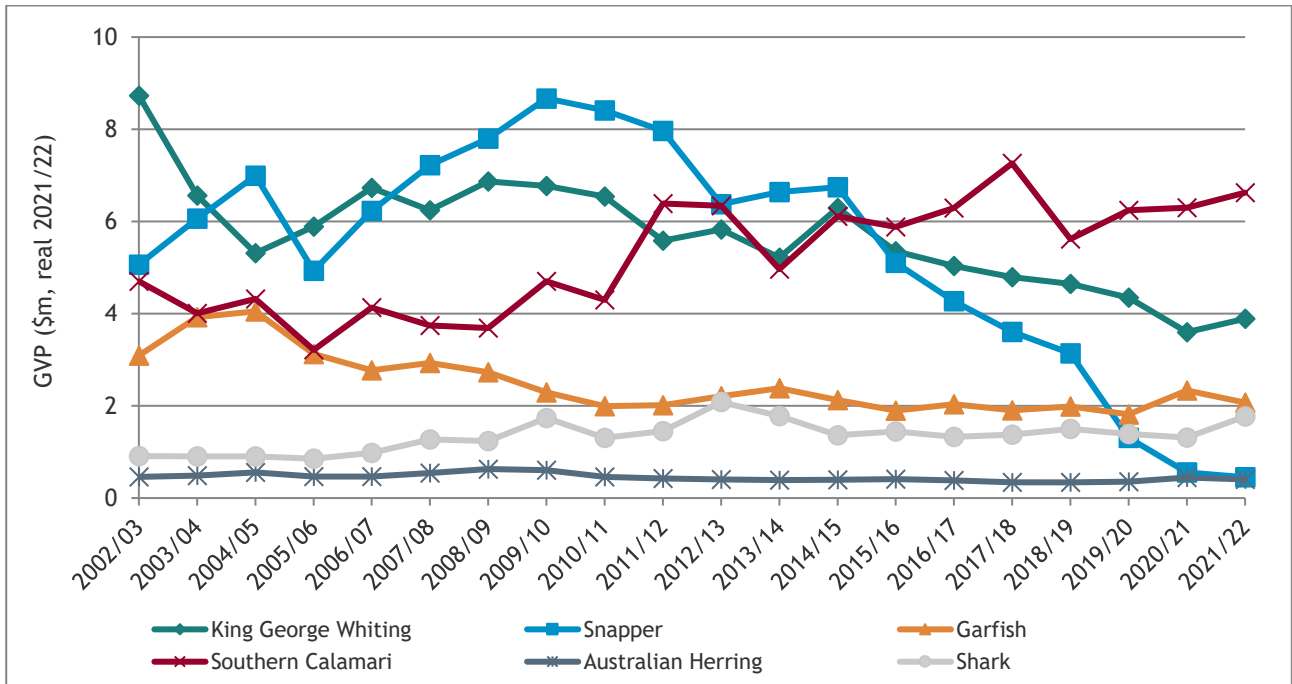


Source: SARDI Aquatic Sciences

Figure 3-2 shows the GVP of the six most important species over the period 2002/03 to 2021/22. King George Whiting, Snapper, Southern Calamari and Garfish accounted for approximately 63 per cent of the total value of the MSF in 2021/22 but only 34 per cent of total catch. In real terms, the value of King George Whiting and Garfish have declined over the last 20 years, with some fluctuations, mostly the result of a declining catch for both species. The landed value of Snapper increased significantly between 2002/03 and 2009/10 as a result of increasing catch but has declined markedly since, especially between 2019/20 and 2021/22 with the ban on taking Snapper. The real GVP of Southern Calamari has increased significantly over the last 20 years, primarily due to an increase in real price. The low cost of catching Southern Calamari, no bait requirements, close to shore fishing grounds and the increase in the real price, have made it increasingly attractive for MSF licence holders to target Southern Calamari.

Figure 3-3 presents the real average price for six of the main species between 2002/03 to 2021/22. Over the 20-year period there has been a real price increase for all of the six main species with Southern Calamari and Shark real prices more than doubling. One contributing factor to the increase in the real shark price could be the significant reduction in Commonwealth shark fishing in SA and hence, less shark product available in the Adelaide market.

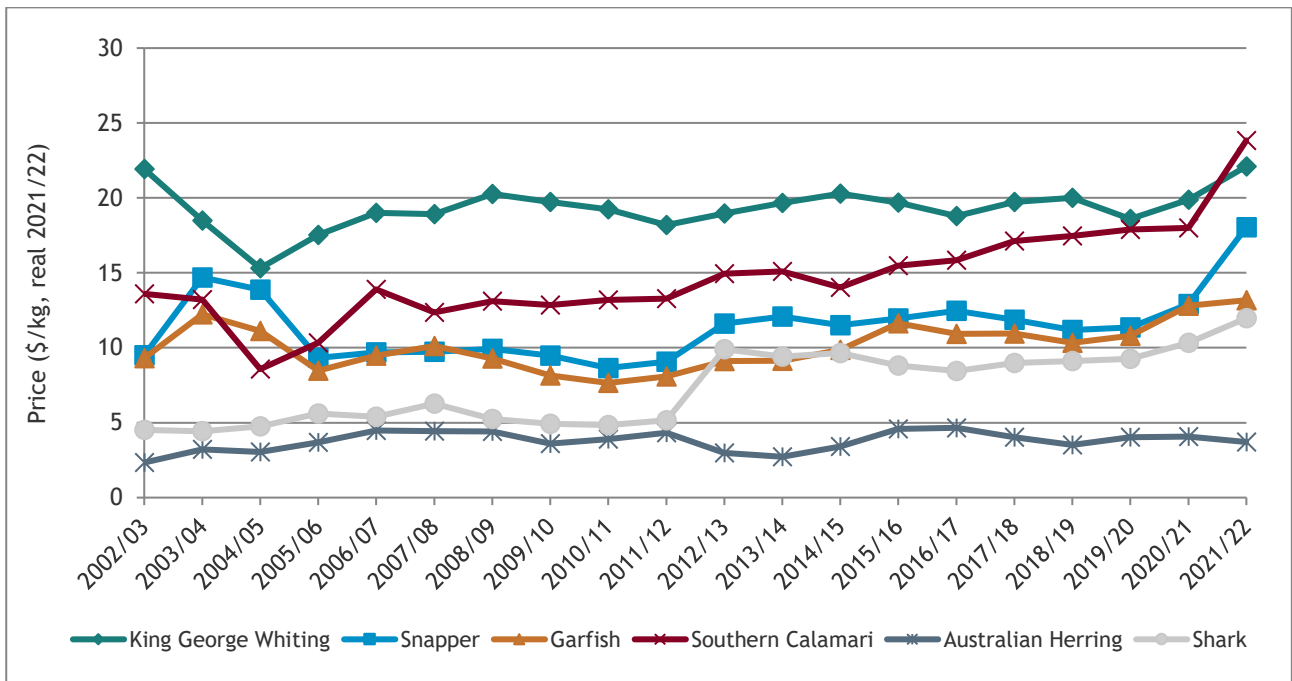
Figure 3-2 GVP of selected major Marine Scalefish species, SA, 2002/03 to 2021/22 ^a



^a GVP of selected major Marine Scalefish species are in real 2021/22 dollars.

Source: SARDI Aquatic Sciences and BDO EconSearch analysis

Figure 3-3 Price for selected major Marine Scalefish species, SA, 2002/03 to 2021/22 ^a

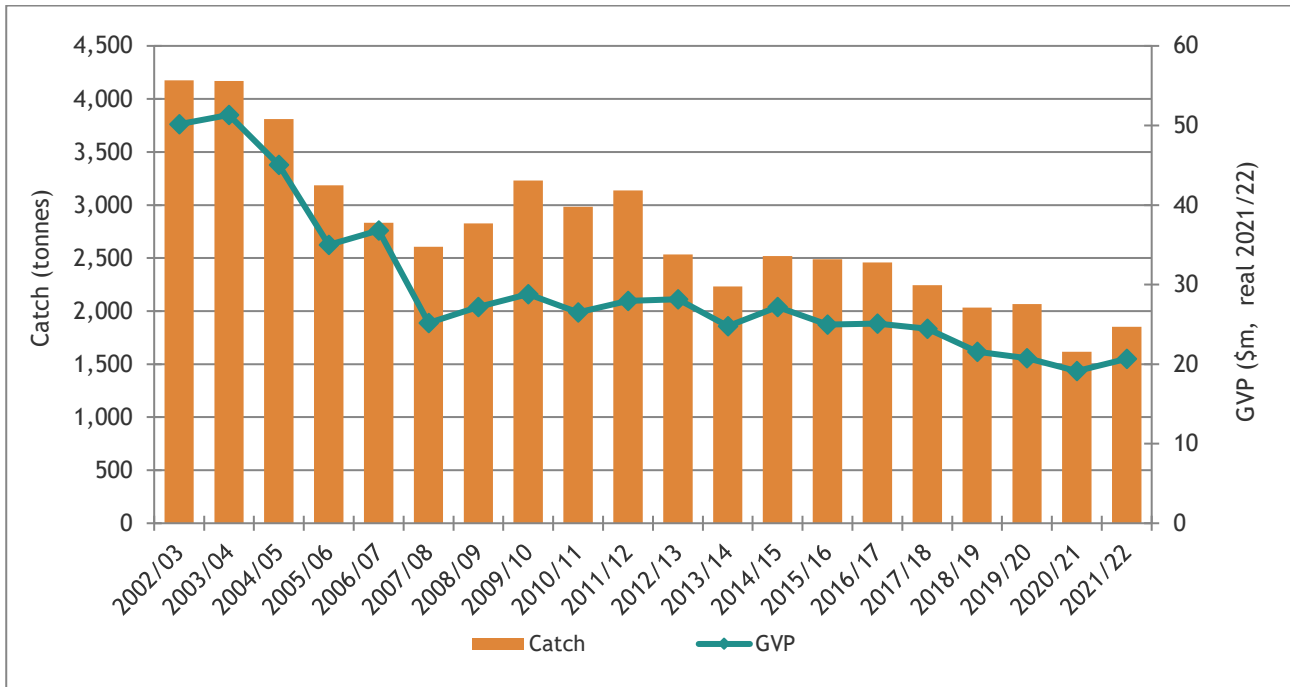


^a GVP of selected major Marine Scalefish species are in real 2021/22 dollars.

Source: SARDI Aquatic Sciences and BDO EconSearch analysis

Figure 3-4 shows the total catch and landed value of all Marine Scalefish species taken by licence holders in the MSF since 2002/03. Real GVP decreased by 59 per cent between 2002/03 and 2021/22, due to a significant decrease in catch (56 per cent) and real price (7 per cent).

Figure 3-4 Catch and GVP of all Marine Scalefish species, SA, 2002/03 to 2021/22^a

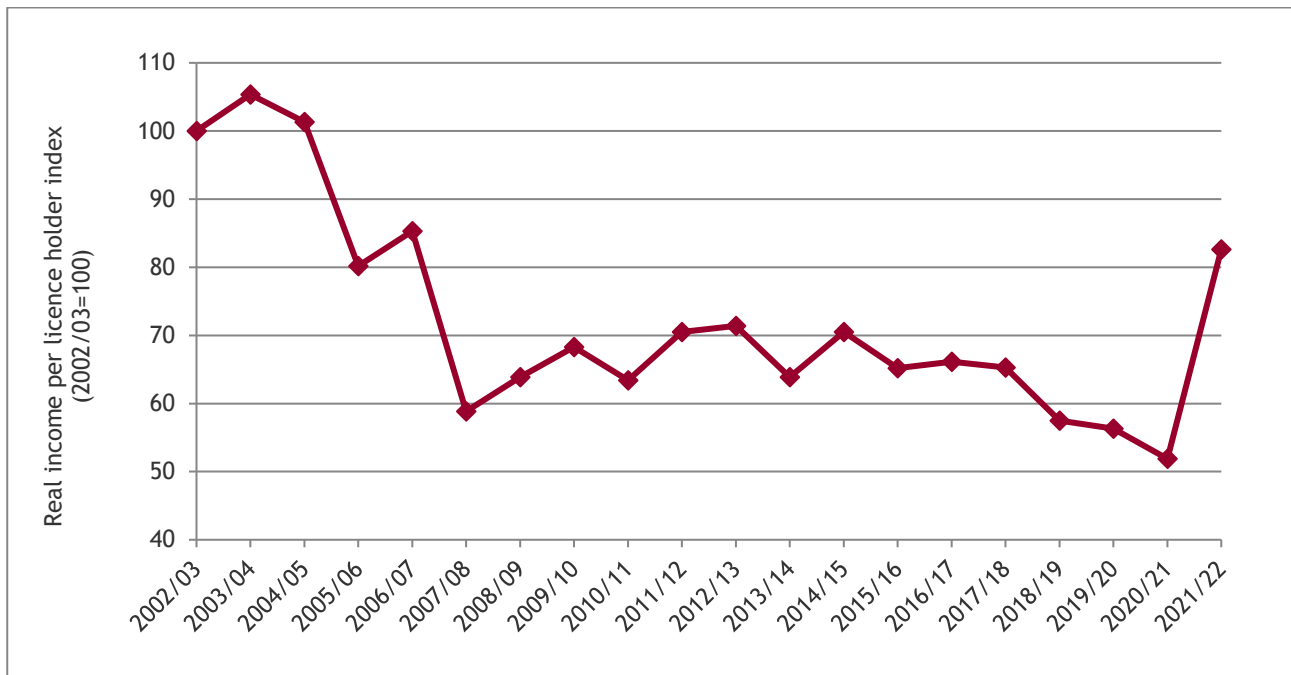


^a GVP of selected major Marine Scalefish species are in real 2021/22 dollars.

Source: SARDI Aquatic Sciences and BDO EconSearch analysis

Figure 3-5 illustrates that despite significant fluctuations, there was little change in the average real value of catch per licence holder over the period 2002/03 to 2014/15. However, between 2014/15 and 2020/21 the fishery experienced a decrease in gross revenue per licence. This is principally a result of a fall in real GVP (mostly catch effects), with little change in the number of licence holders. Following the VLSP, gross revenue per licence increased significantly as a result of a significant reduction in the number of licences. Between 2020/21 and 2021/22 the total number of MSF licence holders declined by one-third from 305 to 207.

Figure 3-5 Index of average real income per licence holder in the SA MSF^a



^a Calculated as real fishery GVP divided by the total number of licences.

Source: Derived from information in Table 3-2. Real value of catch calculated using the consumer price index for Adelaide (ABS 2022)

3.3. Cost of Management

Licence fees from MSF 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 MSF. For the purpose of this analysis, the cost of providing these management services has been assumed to be equal to the gross receipts from licence fees in the fishery (PIRSA, pers. comm.), although this excludes some known small subsidies, such as federal government grants for research and stock status assessments, and contributions from the SA Government.

Management services include:

- annual reports on biological and economic indicators
- policy and management services
- regulatory/legislation and licensing services
- compliance services
- directorate services
- co-management services
- research services (including the FRDC levy used to leverage Government research subsidy).

Table 3-3 shows actual licence fee receipts (real terms) for the fishery for the period 2002/03 to 2022/23. The aggregate licence fee is the total amount collected across all MSF endorsements (e.g. MSF line and net endorsements and those Rock Lobster and Lakes and Coorong MSF endorsed licences before any subsidies (e.g. the total cost of management) and are shown in Table 3-4. The fee per licence is simply aggregate

licence fees for the MSF base fee and MSF net fee divided by the total number of MSF licences. It includes the Snapper fee relief and the fee relief associated the VLSP.

In September 2019, the SA Government announced that MSF licence holders impacted by the Snapper recovery measures (detailed in Section 4.1.3) would have their base licence fees (not net fees) reduced by 50 per cent for the duration of the measures. As the measures were introduced part way through the 2019/20 financial year, a 25 per cent reduction in the MSF base licence fee was applied for the 2019/20 year. This resulted in a \$432,000 reduction to the MSF aggregate licence fee. The 50 per cent reduction to the base fees resulted in a reduction of the MSF aggregate licence fee of \$899,000 in 2020/21, \$845,000 in 2021/22 and \$854,000 in 2022/23 (PIRSA, pers. comm.) (Table 3-3).

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

	Aggregate Licence Fee ^d	GVP	Fee/GVP	Catch	Fee/Catch	Licences ^b	Fee/Licence ^c
	(\$'000)	(\$'000)	(%)	(tonnes)	(\$/kg)	(No.)	(\$/licence)
2002/03	2,482	50,159	4.9%	4,175	\$0.59	415	\$4,680
2003/04	2,787	51,320	5.4%	4,168	\$0.67	403	\$5,372
2004/05	2,865	45,058	6.4%	3,810	\$0.75	368	\$6,047
2005/06	2,912	34,980	8.3%	3,186	\$0.91	361	\$6,258
2006/07	2,891	36,797	7.9%	2,834	\$1.02	357	\$5,871
2007/08	2,810	25,173	11.2%	2,605	\$1.08	354	\$5,881
2008/09	2,652	27,170	9.8%	2,827	\$0.94	352	\$5,503
2009/10	2,578	28,808	8.9%	3,231	\$0.80	349	\$5,386
2010/11	2,581	26,513	9.7%	2,983	\$0.87	346	\$5,439
2011/12	2,681	27,946	9.6%	3,136	\$0.85	328	\$5,965
2012/13	2,923	28,134	10.4%	2,533	\$1.15	326	\$6,558
2013/14	2,948	24,778	11.9%	2,231	\$1.32	321	\$6,769
2014/15	3,008	27,178	11.1%	2,518	\$1.19	319	\$7,013
2015/16	2,943	24,986	11.8%	2,488	\$1.18	317	\$6,937
2016/17	2,711	25,101	10.8%	2,458	\$1.10	314	\$6,410
2017/18	2,787	24,469	11.4%	2,244	\$1.24	310	\$6,651
2018/19	2,813	21,542	13.1%	2,032	\$1.38	310	\$6,708
2019/20	2,799	20,761	13.5%	2,067	\$1.35	305	\$6,819
2020/21	2,899	19,128	15.2%	1,618	\$1.79	305	\$3,948
2021/22	2,544	20,677	12.3%	1,851	\$1.37	207	\$3,440
2022/23 ^e	2,584	n.a.	-	n.a.	-	205	\$5,255

^a Licence fees and GVP are presented in real 2021/22 dollars. Nominal values are provided in Appendix Table 5-1.

^b Figures indicate the licence holder numbers at the start of the financial year, which may be different to the end of the financial year due to amalgamation of licences.

^c Determined by allocating total licence fees (including MSF base fees and net fees but excluding licence fees paid by Rock Lobster and Lakes and Coorong licence holders to take Marine Scalefish species) for the fishery across all MSF licence holders. For licence holders that only pay the base fee, average fees for the 2021/22 were \$2,771.50 per licence holder. For licence holders who pay the base fee and net fee, average fees for the 2021/22 were \$7,709.72 per licence holder.

^d The licence fees for 2019/20, 2020/21 and 2021/22 include a base fee reduction of \$432,000, \$899,000 and \$845,000, respectively, as a result of the Snapper recovery measures.

^e Figures for 2022/23 have not been adjusted for CPI but do include a base fee reduction of \$854,000, as a result of the Snapper recovery measures.

Source: PIRSA Fisheries, SARDI Aquatic Sciences

Table 3-4 Costs of management by endorsed sector in the SA MSF, 2002/03 to 2022/23 ^a

	MSF Base	MSF Net	NZRL MSF Base	NZRL MSF Net	SZRL MSF Base	SZRL MSF Net	L&C MSF Net	Total
2002/03	1,564	378	114	48	277	62	38	2,482
2003/04	1,728	436	129	58	316	74	45	2,787
2004/05	1,777	449	136	61	322	79	42	2,865
2005/06	1,801	458	140	60	327	82	43	2,912
2006/07	1,838	258	171	74	405	92	53	2,891
2007/08	1,822	260	159	69	358	90	50	2,810
2008/09	1,619	318	157	63	369	82	46	2,652
2009/10	1,570	310	153	61	360	80	45	2,578
2010/11	1,571	311	153	61	360	80	45	2,581
2011/12	1,664	293	159	66	371	83	46	2,681
2012/13	1,837	301	172	71	402	90	50	2,923
2013/14	1,882	290	175	59	409	91	40	2,948
2014/15	1,935	302	179	53	419	78	42	3,008
2015/16	1,901	298	173	51	406	73	41	2,943
2016/17	1,747	266	159	44	388	70	36	2,711
2017/18	1,786	276	165	46	403	73	38	2,787
2018/19	1,801	279	167	46	407	74	38	2,813
2019/20	1,804	276	162	46	400	73	38	2,799
2020/21	1,837	286	168	48	414	76	34	2,899
2021/22	1,624	237	148	42	365	67	27	2,544
2022/23	1,641	257	151	43	368	63	28	2,584

^a Licence fees and GVP are presented in real 2021/22 dollars. Nominal values are provided in Appendix Table 5-2.

Source: PIRSA Fisheries, SARDA Aquatic Sciences

The following can be observed for the fishery for the period 2002/03 to 2021/22:

- For 2021/22, the total cost of management was \$2.5 million, a 12 per cent decrease from the previous year and a only 2 per cent higher than 2002/03 in real terms.
- Management costs as a percentage of GVP fluctuated between 2002/03 and 2021/22 but increased overall, from 4.9 per cent in 2002/03 to 12.3 per cent in 2021/22, as a result of a reduction in GVP and despite little change in aggregate licence fees.
- The management cost per kilogram of fish caught followed an increasing trend between 2002/03 (\$0.59/kg) and 2021/22 (\$1.37/kg), principally the result of a reduction in catch and despite little change in aggregate licence fees.
- Over the period 2002/03 to 2021/22, the number of licence holders in the fishery declined by 208 (50 per cent) due to natural attrition in the restricted MSF, the licence amalgamation scheme and the 2005 voluntary net buyback scheme (24 full licences were surrendered and 37 fishers surrendered their net endorsement), the implementation of marine parks, and the 2021 VLSP (98 licence were surrendered).

Under a system of full cost recovery, this has contributed to an increase in the average fees paid per licence holder for most of this period.

- The average fee per licence holder decreased by 27 per cent between 2002/03 and 2021/22 (real terms), from \$4,680 to \$3,440⁹. For licence holders that only pay the base fee, average fees paid for the 2021/22 were \$2,772 per licence holder. For licence holders who pay the base fee and net fee, average fees paid for the 2021/22 were \$7,710 per licence holder.

3.4. Financial Performance Indicators

The major measures of financial performance of licence holders in the MSF for the years 2019/20 to 2021/22 are shown in Table 3-5. Financial performance estimates for 2019/20 to 2020/21 are based on the 2020 survey which represented 35 per cent of the fishery¹⁰. Financial performance estimates for 2021/22 are based on the 2023 survey which represented 37 per cent of the fishery¹⁰. The survey data collection for the 2023 survey is much more representative than the last two surveys and has reduced the bias towards higher income respondents, see Appendix 1 for more detail. Estimates of financial performance for 2021/22 are presented for all licence holders (Table 3-5), on a regional basis (Table 3-6), by fishing method (Table 3-7) and by number of days fished (Table 3-8). Financial performance estimates for 2002/03 to 2018/19, are provided in Appendix 4.

As a result of the large sample size in the 2023 survey, it was possible to divide the survey responses into quartiles for both line-only licence holders (78 per cent) and net licence holders (22 per cent), according to rate of return to capital. The first quartile comprises the 25 per cent of boats with the lowest rate of return and the fourth quartile includes the 25 per cent with the highest return to capital. The financial performance measures for 'return to capital' quartiles for 2021/22 are detailed for line fishers (Table 3-9) and for net fishers (Table 3-10).

Income

Average gross income per surveyed boat, across all gear types, regions and sizes of operations, decreased by 3 per cent from \$122,000 in 2020/21 to \$119,000 in 2021/22 (Table 3-5). This is despite a slight increase in GVP for the fishery and a significant decline in the number of licence holders. There was some variation in gross income between regions. Estimated mean gross income ranged from almost \$92,000 in the West Coast region to almost \$136,000 in the Spencer Gulf region (Table 3-6).

Financial performance estimates by method highlight the significant difference in average gross income between fishing methods. The average gross income for fishers with a line entitlement only was estimated to be almost \$104,000 in 2021/22, while fishers with both line and net entitlements were estimated to have an average gross income of \$174,000 (Table 3-7).

As would be expected, average gross income increased as the number of days fished increased. The average gross income for fishers who fished 50 days or less was estimated to be almost \$71,000 in 2021/22, while fishers who fished for more than 150 days had an average gross income of almost \$188,000 (Table 3-8).

⁹ The average amount for 2021/22 includes a base fee reduction as a result of the Snapper recovery measures.

¹⁰ In terms of active licence holders.

Table 3-5 Financial performance in the SA MSF, 2019/20 to 2021/22 (average per licence)^a

	2019/20		2020/21		2021/22	
	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b
(1) Total Boat Gross Income	\$127,532		\$122,224		\$119,125	
Variable Costs						
Fuel	\$15,804	16%	\$13,025	15%	\$14,054	16%
Repairs & Maintenance ^c	\$9,547	10%	\$8,151	9%	\$9,712	11%
Bait/Ice	\$2,824	3%	\$2,411	3%	\$1,991	2%
Provisions	\$1,147	1%	\$980	1%	\$859	1%
Labour - paid	\$14,983	15%	\$12,639	14%	\$8,542	9%
(2) Labour - unpaid ^d	\$21,942	22%	\$18,510	21%	\$23,964	26%
Other variable costs	\$1,525	2%	\$1,568	2%	\$3,350	4%
(3) Total Variable Costs	\$67,772	68%	\$57,283	65%	\$62,472	69%
Fixed Costs						
Licence Fee ^e	\$6,653	7%	\$5,769	7%	\$3,964	4%
Insurance	\$2,953	3%	\$3,036	3%	\$3,149	3%
(4) Interest	\$4,800	5%	\$4,239	5%	\$3,267	4%
(5) Labour - unpaid ^d	\$4,963	5%	\$5,041	6%	\$4,810	5%
(6) Leasing	\$0	0%	\$0	0%	\$960	1%
Legal & Accounting	\$2,230	2%	\$2,292	3%	\$2,650	3%
Telephone etc.	\$1,232	1%	\$1,266	1%	\$1,389	2%
Slipping & Mooring	\$1,584	2%	\$1,629	2%	\$503	1%
Travel	\$578	1%	\$594	1%	\$868	1%
Office & Admin	\$7,169	7%	\$7,369	8%	\$6,591	7%
(7) Total Fixed Costs	\$32,162	32%	\$31,234	35%	\$28,151	31%
(8) Total Boat Cash Costs (3+7)	\$99,935	100%	\$88,517	100%	\$90,623	100%
Boat Gross Margin (1-3)	\$59,760		\$64,941		\$56,653	
(9) Total Unpaid Labour (2+5)	\$26,905		\$23,550		\$28,774	
Gross Operating Surplus (1-8+9)	\$54,503		\$57,258		\$57,276	
(10) Boat Cash Income (1-8)	\$27,597		\$33,707		\$28,502	
(11) Depreciation	\$20,557		\$19,848		\$20,658	
(12) Boat Business Profit (10-11)	\$7,040		\$13,859		\$7,844	
(13) Profit at Full Equity (12+4+6)	\$11,840		\$18,097		\$12,071	
Boat Capital						
(14) Fishing Gear & Equip	\$155,418		\$150,058		\$198,260	
Licence Value	\$209,100		\$226,097		\$201,645	
Quota Value	\$0		\$0		\$355,103	
(15) Total Boat Capital	\$364,518		\$376,155		\$755,009	
Rate of Return on Fishing Gear & Equip (13/14*100)	7.6%		12.1%		6.1%	
Rate of Return on Total Boat Capital (13/15*100)	3.2%		4.8%		1.6%	

^a Financial performance estimates for the years 2019/20 and 2020/21 are based on the 2020 licence holder survey and those estimates for 2021/22 are based on the 2023 licence holder survey.

^b Total boat cash costs.

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

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

^e Licence fee estimates are based on survey responses as individual fishing operations will pay different licence fees depending on their entitlements.

Source: BDO EconSearch analysis

Table 3-6 Financial performance in the SA MSF, by fishing region, 2021/22 (average per licence)^a

	West Coast	Spencer Gulf	Gulf St Vincent/KI	South East	South Australia
(1) Total Boat Gross Income	\$91,801	\$135,534	\$116,889	\$131,860	\$119,125
Variable Costs					
Fuel	\$11,144	\$12,681	\$19,206	\$17,800	\$14,054
Repairs & Maintenance	\$8,696	\$9,503	\$16,907	\$16,640	\$9,712
Bait/Ice	\$2,291	\$1,639	\$1,804	\$3,400	\$1,991
Provisions	\$1,425	\$613	\$929	\$0	\$859
Labour - paid	\$2,944	\$8,553	\$12,840	\$16,600	\$8,542
(2) Labour - unpaid	\$13,954	\$15,747	\$25,861	\$6,611	\$23,964
Other variable costs	\$3,006	\$1,655	\$373	\$170	\$3,350
(3) Total Variable Costs	\$43,461	\$50,391	\$77,921	\$61,221	\$62,472
Fixed Costs					
Licence Fee	\$2,960	\$3,952	\$5,809	\$2,480	\$3,964
Insurance	\$2,578	\$3,383	\$2,954	\$1,460	\$3,149
(4) Interest	\$1,927	\$1,133	\$10,422	\$100	\$3,267
(5) Labour - unpaid	\$3,573	\$6,219	\$5,302	\$10,396	\$4,810
(6) Leasing	\$483	\$196	\$36	\$0	\$960
Legal & Accounting	\$1,855	\$2,214	\$5,055	\$1,536	\$2,650
Telephone etc.	\$1,184	\$1,180	\$2,018	\$1,440	\$1,389
Slipping & Mooring	\$583	\$441	\$204	\$1,400	\$503
Travel	\$967	\$708	\$1,336	\$0	\$868
Office & Admin	\$7,580	\$6,716	\$6,318	\$1,660	\$6,591
(7) Total Fixed Costs	\$23,689	\$26,141	\$39,453	\$20,472	\$28,151
(8) Total Boat Cash Costs (3+7)	\$67,150	\$76,532	\$117,373	\$81,693	\$90,623
Boat Gross Margin (1-3)	\$48,340	\$85,143	\$38,968	\$70,639	\$56,653
(9) Total Unpaid Labour (2+5)	\$17,527	\$21,965	\$31,163	\$17,007	\$28,774
Gross Operating Surplus (1-8+9)	\$42,179	\$80,968	\$30,679	\$67,174	\$57,276
(10) Boat Cash Income (1-8)	\$24,652	\$59,002	-\$485	\$50,167	\$28,502
(11) Depreciation	\$12,025	\$24,026	\$25,329	\$19,803	\$20,963
(12) Boat Business Profit (10-11)	\$12,627	\$34,977	-\$25,813	\$30,364	\$7,539
(13) Profit at Full Equity (12+4+6)	\$15,037	\$36,305	-\$15,356	\$30,464	\$11,766
Boat Capital					
(14) Fishing Gear & Equip	\$156,409	\$173,516	\$277,055	\$266,860	\$191,891
Licence Value	\$139,556	\$254,414	\$203,669	\$124,000	\$201,645
Quota Value	\$168,303	\$414,267	\$351,053	\$707,610	\$355,103
(15) Total Boat Capital	\$464,268	\$842,196	\$831,777	\$1,098,470	\$748,639
Rate of Return on Fishing Gear & Equip (13/14*100)	9.6%	20.9%	-5.5%	11.4%	6.1%
Rate of Return on Total Boat Capital (13/15*100)	3.2%	4.3%	-1.8%	2.8%	1.6%

^a See footnotes to Table 3-5.

Source: BDO EconSearch analysis

Table 3-7 Financial performance in the SA MSF, by fishing method, 2021/22 (average per licence)^a

	Line		Line & Net		All Boats	
	Average per Licence	Share of TBCC	Average per Licence	Share of TBCC	Average per Licence	Share of TBCC
(1) Total Boat Gross Income	\$103,941		\$174,440		\$119,125	
Variable Costs						
Fuel	\$10,495	16%	\$27,021	18%	\$14,054	16%
Repairs & Maintenance	\$8,668	14%	\$21,462	14%	\$9,712	11%
Bait/Ice	\$1,927	3%	\$2,224	1%	\$1,991	2%
Provisions	\$803	1%	\$1,061	1%	\$859	1%
Labour - paid	\$5,280	8%	\$20,427	13%	\$8,542	9%
(2) Labour - unpaid	\$14,282	22%	\$25,632	17%	\$23,964	26%
Other variable costs	\$1,956	3%	\$484	0%	\$3,350	4%
(3) Total Variable Costs	\$43,410	68%	\$98,310	65%	\$62,472	69%
Fixed Costs						
Licence Fee	\$2,736	4%	\$8,435	6%	\$3,964	4%
Insurance	\$2,998	5%	\$3,700	2%	\$3,149	3%
(4) Interest	\$1,290	2%	\$10,468	7%	\$3,267	4%
(5) Labour - unpaid	\$3,199	5%	\$10,678	7%	\$4,810	5%
(6) Leasing	\$190	0%	\$357	0%	\$960	1%
Legal & Accounting	\$1,881	3%	\$5,452	4%	\$2,650	3%
Telephone etc.	\$1,101	2%	\$2,436	2%	\$1,389	2%
Slipping & Mooring	\$537	1%	\$379	0%	\$503	1%
Travel	\$697	1%	\$1,491	1%	\$868	1%
Office & Admin	\$5,721	9%	\$9,762	6%	\$6,591	7%
(7) Total Fixed Costs	\$20,350	32%	\$53,157	35%	\$28,151	31%
(8) Total Boat Cash Costs (3+7)	\$63,760	100%	\$151,467	100%	\$90,623	100%
Boat Gross Margin (1-3)	\$60,531		\$76,129		\$56,653	
(9) Total Unpaid Labour (2+5)	\$17,481		\$36,309		\$28,774	
Gross Operating Surplus (1-8+9)	\$57,662		\$59,282		\$57,276	
(10) Boat Cash Income (1-8)	\$40,181		\$22,972		\$28,502	
(11) Depreciation	\$17,563		\$31,933		\$20,658	
(12) Boat Business Profit (10-11)	\$22,617		-\$8,960		\$7,844	
(13) Profit at Full Equity (12+4+6)	\$24,097		\$1,864		\$12,071	
Boat Capital						
(14) Fishing Gear & Equip	\$165,530		\$317,489		\$198,260	
Licence Value	\$176,563		\$293,016		\$201,645	
Quota Value	\$325,920		\$461,414		\$355,103	
(15) Total Boat Capital	\$668,013		\$1,071,919		\$755,009	
Rate of Return on Fishing Gear & Equip (13/14*100)	14.6%		0.6%		6.1%	
Rate of Return on Total Boat Capital (13/15*100)	3.6%		0.2%		1.6%	

^a See footnotes to Table 3-5.

Source: BDO EconSearch analysis

Table 3-8 Financial performance in the SA MSF, by days fished, 2021/22 (average per licence)^a

	< 50 Days		51-150 Days		>150 Days		All Boats		
	Average per Licence	Share of TBCC	Average per Licence	Share of TBCC	Average per Licence	Share of TBCC	Average per Licence	Share of TBCC	
(1) Total Boat Gross Income	\$71,498		\$103,120		\$187,936		\$119,125		
Variable Costs									
Fuel	\$5,100	11%	\$10,356	14%	\$27,419	21%	\$14,054	16%	
Repairs & Maintenance	\$4,153	9%	\$11,003	15%	\$17,938	14%	\$9,712	11%	
Bait/Ice	\$1,506	3%	\$1,889	3%	\$2,303	2%	\$1,991	2%	
Provisions	\$140	0%	\$699	1%	\$1,425	1%	\$859	1%	
Labour - paid	\$1,444	3%	\$12,037	16%	\$6,750	5%	\$8,542	9%	
(2) Labour - unpaid	\$13,191	29%	\$12,722	17%	\$28,390	22%	\$23,964	26%	
Other variable costs	\$250	1%	\$1,615	2%	\$2,938	2%	\$3,350	4%	
(3) Total Variable Costs	\$25,784	56%	\$50,321	68%	\$87,162	68%	\$62,472	69%	
Fixed Costs									
Licence Fee	\$3,130	7%	\$4,251	6%	\$4,240	3%	\$3,964	4%	
Insurance	\$3,175	7%	\$2,470	3%	\$4,796	4%	\$3,149	3%	
(4) Interest	\$363	1%	\$1,467	2%	\$9,638	7%	\$3,267	4%	
(5) Labour - unpaid	\$3,763	8%	\$4,497	6%	\$5,965	5%	\$4,810	5%	
(6) Leasing	\$25	0%	\$381	1%	\$94	0%	\$960	1%	
Legal & Accounting	\$1,626	4%	\$1,980	3%	\$4,988	4%	\$2,650	3%	
Telephone etc.	\$1,148	2%	\$1,477	2%	\$1,440	1%	\$1,389	2%	
Slipping & Mooring	\$89	0%	\$615	1%	\$499	0%	\$503	1%	
Travel	\$596	1%	\$493	1%	\$1,863	1%	\$868	1%	
Office & Admin	\$6,237	14%	\$5,871	8%	\$8,270	6%	\$6,591	7%	
(7) Total Fixed Costs	\$20,153	44%	\$23,501	32%	\$41,791	32%	\$28,151	31%	
(8) Total Boat Cash Costs (3+7)	\$45,937	100%	\$73,822	100%	\$128,952	100%	\$90,623	100%	
Boat Gross Margin (1-3)	\$45,714		\$52,799		\$100,774		\$56,653		
(9) Total Unpaid Labour (2+5)	\$16,954		\$17,220		\$34,355		\$28,774		
Gross Operating Surplus (1-8+9)	\$42,515		\$46,517		\$93,338		\$57,276		
(10) Boat Cash Income (1-8)	\$25,561		\$29,298		\$58,984		\$28,502		
(11) Depreciation	\$27,383		\$18,712		\$23,755		\$20,658		
(12) Boat Business Profit (10-11)	-\$1,822		\$10,585		\$35,228		\$7,844		
(13) Profit at Full Equity (12+4+6)	-\$1,434		\$12,433		\$44,959		\$12,071		
Boat Capital									
(14) Fishing Gear & Equip	\$208,081		\$168,626		\$264,325		\$198,260		
Licence Value	\$162,778		\$171,992		\$300,764		\$201,645		
Quota Value	\$151,529		\$396,191		\$438,641		\$355,103		
(15) Total Boat Capital	\$522,387		\$736,809		\$1,003,730		\$755,009		
Rate of Return on Fishing Gear & Equip (13/14*100)	-0.7%		7.4%		17.0%		6.1%		
Rate of Return on Total Boat Capital (13/15*100)	-0.3%		1.7%		4.5%		1.6%		

^a See footnotes to Table 3-5.

Source: BDO EconSearch analysis

Table 3-9 Financial performance of line entitlement only licence holders by return to capital quartile, 2021/22 (average per licence)^a

	Lowest 25%	Second Quartile	Third Quartile	Highest 25%	All Boats
(1) Total Boat Gross Income	\$39,634	\$63,638	\$120,345	\$189,045	\$103,941
Variable Costs					
Fuel	\$5,697	\$6,308	\$14,073	\$15,580	\$10,495
Repairs & Maintenance	\$7,822	\$7,324	\$11,435	\$7,988	\$8,668
Bait/Ice	\$1,309	\$717	\$3,601	\$1,987	\$1,927
Provisions	\$415	\$275	\$1,077	\$1,404	\$803
Labour - paid	\$5,615	\$1,374	\$10,522	\$3,308	\$5,280
(2) Labour - unpaid	\$15,005	\$11,296	\$11,356	\$19,240	\$14,282
Other variable costs	\$417	\$3,081	\$277	\$4,135	\$1,956
(3) Total Variable Costs	\$36,281	\$30,374	\$52,340	\$53,641	\$43,410
Fixed Costs					
Licence Fee	\$3,020	\$2,587	\$2,554	\$2,773	\$2,736
Insurance	\$2,294	\$2,304	\$2,411	\$4,928	\$2,998
(4) Interest	\$0	\$564	\$797	\$3,743	\$1,290
(5) Labour - unpaid	\$4,710	\$3,991	\$1,658	\$2,500	\$3,199
(6) Leasing	\$58	\$0	\$54	\$633	\$190
Legal & Accounting	\$2,053	\$1,803	\$1,320	\$2,342	\$1,881
Telephone etc.	\$1,126	\$1,010	\$953	\$1,311	\$1,101
Slipping & Mooring	\$314	\$556	\$677	\$603	\$537
Travel	\$269	\$675	\$829	\$1,013	\$697
Office & Admin	\$4,535	\$6,338	\$5,439	\$6,620	\$5,721
(7) Total Fixed Costs	\$18,378	\$19,826	\$16,692	\$26,465	\$20,350
(8) Total Boat Cash Costs (3+7)	\$54,658	\$50,201	\$69,032	\$80,106	\$63,760
Boat Gross Margin (1-3)	\$3,353	\$33,264	\$68,005	\$135,405	\$60,531
(9) Total Unpaid Labour (2+5)	\$19,715	\$15,287	\$13,013	\$21,740	\$17,481
Gross Operating Surplus (1-8+9)	\$4,691	\$28,724	\$64,326	\$130,680	\$57,662
(10) Boat Cash Income (1-8)	-\$15,025	\$13,437	\$51,313	\$108,940	\$40,181
(11) Depreciation	\$17,967	\$18,527	\$14,665	\$19,169	\$17,563
(12) Boat Business Profit (10-11)	-\$32,991	-\$5,090	\$36,648	\$89,771	\$22,617
(13) Profit at Full Equity (12+4+6)	-\$32,934	-\$4,526	\$37,499	\$94,147	\$24,097
Boat Capital					
(14) Fishing Gear & Equip	\$145,942	\$163,325	\$165,882	\$186,802	\$165,530
Licence Value	\$177,903	\$138,333	\$258,846	\$128,231	\$176,563
Quota Value	\$99,681	\$303,643	\$492,337	\$406,304	\$325,920
(15) Total Boat Capital	\$423,525	\$605,302	\$917,066	\$721,337	\$668,013
Rate of Return on Fishing Gear & Equip (13/14*100)	-22.6%	-2.8%	22.6%	50.4%	14.6%
Rate of Return on Total Boat Capital (13/15*100)	-7.8%	-0.7%	4.1%	13.1%	3.6%

^a See footnotes to Table 3-5.

Source: BDO EconSearch analysis

Table 3-10 Financial performance by net and line licence holders by return to capital quartile, 2021/22 (average per licence) ^a

	Lowest 25%	Second Quartile	Third Quartile	Highest 25%	All Boats
(1) Total Boat Gross Income	\$54,525	\$150,833	\$165,076	\$319,082	\$174,440
Variable Costs					
Fuel	\$21,975	\$16,930	\$11,000	\$51,650	\$27,021
Repairs & Maintenance	\$36,875	\$9,500	\$15,434	\$19,542	\$21,462
Bait/Ice	\$3,545	\$1,500	\$700	\$2,588	\$2,224
Provisions	\$1,290	\$0	\$2,067	\$875	\$1,061
Labour - paid	\$8,250	\$24,467	\$24,858	\$26,250	\$20,427
(2) Labour - unpaid	\$20,397	\$11,118	\$29,077	\$39,168	\$25,632
Other variable costs	\$643	\$415	\$253	\$550	\$484
(3) Total Variable Costs	\$92,975	\$63,929	\$83,389	\$140,622	\$98,310
Fixed Costs					
Licence Fee	\$6,625	\$8,500	\$10,863	\$8,375	\$8,435
Insurance	\$5,612	\$2,040	\$3,150	\$3,448	\$3,700
(4) Interest	\$34,400	\$2,000	\$582	\$300	\$10,468
(5) Labour - unpaid	\$1,710	\$33,296	\$9,578	\$3,506	\$10,678
(6) Leasing	\$0	\$0	\$1,667	\$0	\$357
Legal & Accounting	\$3,090	\$1,900	\$2,000	\$13,066	\$5,452
Telephone etc.	\$3,448	\$1,447	\$2,231	\$2,319	\$2,436
Slipping & Mooring	\$375	\$0	\$933	\$250	\$379
Travel	\$4,000	\$667	\$250	\$532	\$1,491
Office & Admin	\$15,810	\$2,033	\$11,069	\$8,530	\$9,762
(7) Total Fixed Costs	\$75,069	\$51,882	\$42,324	\$40,326	\$53,157
(8) Total Boat Cash Costs (3+7)	\$168,044	\$115,812	\$125,713	\$180,948	\$151,467
Boat Gross Margin (1-3)	-\$38,450	\$86,904	\$81,687	\$178,460	\$76,129
(9) Total Unpaid Labour (2+5)	\$22,107	\$44,413	\$38,655	\$42,674	\$36,309
Gross Operating Surplus (1-8+9)	-\$91,413	\$79,435	\$78,018	\$180,808	\$59,282
(10) Boat Cash Income (1-8)	-\$113,519	\$35,022	\$39,363	\$138,134	\$22,972
(11) Depreciation	\$47,196	\$31,007	\$19,109	\$26,981	\$31,933
(12) Boat Business Profit (10-11)	-\$160,715	\$4,015	\$20,254	\$111,152	-\$8,960
(13) Profit at Full Equity (12+4+6)	-\$126,315	\$6,015	\$22,502	\$111,452	\$1,864
Boat Capital					
(14) Fishing Gear & Equip	\$645,425	\$201,300	\$182,583	\$177,875	\$317,489
Licence Value	\$250,000	\$256,667	\$151,667	\$469,305	\$293,016
Quota Value	\$314,184	\$425,537	\$802,417	\$379,801	\$461,414
(15) Total Boat Capital	\$1,209,609	\$883,504	\$1,136,667	\$1,026,981	\$1,071,919
Rate of Return on Fishing Gear & Equip (13/14*100)	-19.6%	3.0%	12.3%	62.7%	0.6%
Rate of Return on Total Boat Capital (13/15*100)	-10.4%	0.7%	2.0%	10.9%	0.2%

^a See footnotes to Table 3-5.

Source: BDO EconSearch analysis

In 2021/22, the average income for boats with line entitlements only in the lowest quartile was 62 per cent less than the average for all boats with line entitlements only. However, in the highest quartile, average gross income was 82 per cent higher than the average (Table 3-9). For boats with net and line entitlements, the average gross income in the lowest quartile was approximately 69 per cent below the all boats average, while in the highest quartile, average gross income was 83 per cent above the all boats average (Table 3-10).

Costs

Table 3-5 to Table 3-10 show total costs separated into variable costs (69 per cent of total boat cash costs for all boats in 2021/22) and fixed costs (31 per cent). Total average cash costs per boat were estimated to have increased by approximately 2 per cent from 2020/21 to 2021/22, comprised of a 9 per cent rise in variable and a 10 per cent fall in fixed costs (Table 3-5).

Average total cash costs per boat were highest in the Gulf St Vincent/Kangaroo Island (GSV/KI) region (\$117,000) when compared to the other fishing regions in SA and 30 per cent higher than the fishery average mainly due to higher variable costs (e.g. fuel, repairs and maintenance and unpaid labour) and interest costs. Conversely, average total cash costs were lowest in the West Coast region (\$67,000), 26 per cent lower than the fishery average. This was principally the result of lower variable costs, specifically paid labour, fuel and repairs and maintenance for the West Coast region (Table 3-6).

Average total cash costs per boat for fishers with both a net and line entitlement (\$151,000) were 67 per cent more than the fishery average in 2021/22 (almost \$91,000). For line entitlement only fishers, total cash costs were almost \$64,000 in 2021/22, 30 per cent less than the fishery average. The higher total cash costs for net and line entitlement holders were a result of higher costs for labour, fuel, repairs and maintenance, licence fees and interest (Table 3-7).

Average total cash costs for fishers who fished more than 150 days (almost \$129,000) were 42 per cent higher than the fishery average (almost \$91,000) and over double for those fishers who fished for 50 days or less (almost \$46,000) (Table 3-8). The differences in fixed costs are indicative of different styles of business operations rather than demonstrating a change in the fixed costs as the number of days fished increases. For example, licence fees are lower for businesses that fish 50 days or less. This does not mean that licence fees for an individual business increase as the business fishes more days, but rather on average, fishing businesses that fish less pay less in licence fees, which is most likely due to a difference in entitlements (e.g. business that fish less are generally line only fishing licences).

For line only licence holders, average total cash costs for boats in the lowest quartile were 14 per cent below the average of line only boats. Average total cash costs were more than double in the fourth quartile compared to the average of all line only boats. The cost items where the largest differences occurred between the highest quartile and the overall average were fuel, unpaid labour, insurance and interest (Table 3-9). For net licence holders, average income for boats in the lowest quartile was around 69 per cent below that of average net boats but average total cash costs were around 11 per cent higher. Average total cash costs in the fourth quartile was around 19 per cent above that of average net licence holders (Table 3-10).

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). Boat gross

margin declined by 13 per cent from 2020/21 (almost \$65,000) to 2021/22 (almost \$57,000) (Table 3-5). This was a result of the increase in variable costs and a fall in gross boat income.

Gross operating surplus (GOS) was calculated excluding imputed wages for operator and family members as a cost item. The average GOS of all surveyed boats in 2021/22 was estimated to be \$57,000, similar to the previous year (Table 3-5). However, the estimated average boat cash income (GOS including imputed wages) in 2021/22 was almost \$29,000, a 15 per cent decline from the previous year (\$34,000) principally as a result of the increase in unpaid labour (Table 3-5).

GOS and boat business profit give an indication of the capacity of the operator to remain in the fishery in the short term. In 2021/22, average boat business profit was estimated to be almost \$8,000, half that in the previous year (\$14,000) (Table 3-5). This is principally a result of the increase in unpaid labour.

For 2021/22, the average boat business profit was negative in the GSV/KI region (-\$26,000), however, the West Coast (\$13,000), South East (\$30,000) and Spencer Gulf (\$35,000) regions were all above the average across the fishery as a whole (Table 3-6).

Boat business profit was higher for fishers with a line entitlement only (\$23,000) than for fishers with both a net and line entitlement (-\$9,000). This is the opposite when compared to previous years and is a result of significantly higher cash costs and depreciation for fishers with a line and net endorsement compared to those with a line only licence (Table 3-7).

The average boat business profit for fishers who fished 50 days or less was estimated to be around -\$2,000 in 2021/22. This was lower than those fishers who fished more than 150 days, where boat business profit was estimated to be \$35,000 (Table 3-8).

The average boat business profit for boats with line entitlement only in the lowest quartile of financial performance was around -\$33,000, significantly less than the average profit for boats in the highest quartile (almost \$90,000) (Table 3-9). Similarly, the average boat business profit for boats with a net and line entitlement in the lowest quartile (around -\$161,000) was considerably less than the average profit for boats in the highest quartile (\$111,000) (Table 3-10).

Profit at full equity is a measure of the profitability of an individual licence holder, assuming the licence holder has full equity in their operation. It is a useful absolute measure of the economic performance of fishing firms. For all boats, profit at full equity in 2021/22 (\$12,000) was a 33 per cent decrease from the previous year (\$18,000) (Table 3-5).

Return to capital

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

The average capital value of fishing gear and licence per boat in the SA MSF in 2021/22 was estimated to be almost \$755,009 per licence. This estimate comprised the following components based on the fishers own estimates provided in the 2023 survey (Table 3-5):

- fishing gear and equipment \$198,000
- licence value \$202,000

- quota value \$355,000

An important consideration for the 2021/22 financial year was the value of quota entitlements for key species (King George Whiting, Snapper, Garfish and Southern Calamari) by region as this was the first year these management arrangements came into effect. Whilst it might be preliminary to present the value of quota units based on one year of trading, it gives an indication of the value licence holders currently put on being able to fish for these species. The average value of quota entitlements per licence (\$355,000 in 2021/22) was based on the average quota holding and value for each key species in each region based on the fishers own estimates provided in the 2023 survey.

The rate of return to total capital was calculated as the ratio of profit at full equity to total boat capital (i.e. fishing gear and equipment and licence and quota value). For the MSF as a whole, the average rate of return to total capital was estimated to be 1.6 per cent in 2021/22, down from the estimate for 2020/21 (4.8 per cent) (Table 3-5). However, contributing to this decline was the value created by the allocation of quota units, almost doubling the value of total of boat capital between 2020/21 and 2021/22.

The rate of return to total capital was greatest in the Spencer Gulf region, estimated to be 4.3 per cent. The lowest rate of return to total capital was in the GSV/KI region at -1.8 per cent (Table 3-6). For fishers with net and line entitlements the average rate of return to total capital was 0.2 per cent, whereas for line entitlement only fishers it was 3.6 per cent (Table 3-7).

The average rate of return to total capital was greatest for fishers who fished more than 150 days, estimated to be 4.5 per cent. The average rate of return to total capital for fishers who fished 50 days or less was -0.3 per cent in 2021/22 (Table 3-8). Some licence holders who fish for 50 days or less may be “lifestyle” fishers and may not rely on fishing activities as their primary source of income. Interestingly, the average value of licence and quota for the lifestyle fishers correlates to the number of days fished, i.e. the value of licence and quota for this group is lower than the average for all boats.

The average rate of return to total capital for line entitlement only fishers was estimated to be -7.8 per cent in the lowest financial performance quartile and 13.1 per cent in the highest quartile (Table 3-9). The average rate of return to total capital for net fishers was estimated to be -10.4 per cent in the lowest quartile and 10.9 per cent in the highest quartile (Table 3-10).

Licence values

The value of licences represents a significant proportion of the total capital used by each licence holder in the fishery. The reported average licence value of almost \$202,000 for 2021/22 for all licence types, excluding the value of quota, was based on the fishers’ own estimates of the value of their licence provided in the 2023 survey of licence holders.

The value of each individual licence varies depending on the number of fishing points allocated to the licence and, more importantly, the endorsements and entitlements on the licence. The PIRSA record of licence transfers for 2021/22 indicated that there were 10 licence transfers over the 12-month period. However, the value of these transfers is confidential and, therefore, cannot be used for comparison.

Licence value estimates reported in previous economic indicator reports (since 2002/03) (BDO EconSearch 2022a) generally followed an increasing trend over the period 2002/03 to 2008/09. Between 2008/09 to 2013/14, licence values followed a declining trend but this has turned around in subsequent years in real terms and was estimated to be \$202,000 in 2021/22 (Figure 6-11). A large number of licence holders who participated in the 2023 survey indicated that they felt their licences were generally undervalued in the most recent VLSP. It was expected that the rise in average licence values reported for 2019/20 and 2020/21

would correspond to an increase in net economic return (NER). However, as detailed in Table 3-15, there was a decrease in NER in these years. It may be that the fishery reform program raised expectations of what licence holders might receive during the VLSP which is reflected in the licence values provided by survey respondents. This assumption holds when noting the average licence value has declined by 11 per cent in the year following the VLSP (2021/22).

3.5. State and Regional Economic Contribution

Estimates of the economic contribution of the MSF in the South Australian and regional (Eyre and Western and Fleurieu and KI¹¹) economies in 2021/22 are outlined below. For purposes of comparison, economic contribution estimates of the MSF on the South Australian and regional economies in 2020/21, are presented in Appendix 1.

3.5.1. Measuring direct and flow-on effects

The method for estimating the direct economic contribution of the MSF is adapted from 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) trade¹².

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

Economic contributions at the state and regional levels were based on input-output models prepared for the Department of Premier and Cabinet (BDO EconSearch 2022c).

In order to compile a representative cost structure for the fishing sector, costs per boat were derived from data provided by operators in the fishery in the 2023 licence holder survey. On an item-by-item basis, the expenditures were allocated between those occurring in the fishing region, those occurring in SA and those goods and services imported from outside the state.

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

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

¹¹ The Eyre and Western and Fleurieu and KI regions are consistent with the SA Government Regions, as defined by the Department of Planning Transport and Infrastructure.

¹² Estimates of economic contribution prepared for this and other commercial fisheries in South Australia (except Lakes and Coorong) for 2002/03 do not include the contribution of local retail and food service trade.

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

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

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

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

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

3.5.2. Economic contributions at the state and regional levels

Estimates of the economic contribution generated in 2021/22 by the MSF in SA and in the West Coast, Spencer Gulf/Coffin Bay and Gulf St Vincent/Kangaroo Island regions¹³ are outlined in Table 3-11 to Table 3-14, respectively¹⁴.

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.

Some interpretation of the results of the impact analysis at the state level (Table 3-11) is provided below. Interpretation of the results at the regional level (Table 3-12 to Table 3-14) is similar to that at the state level.

Value of output

The value of output generated directly in SA by the MSF summed to \$20.7 million in 2021/22, while output generated in SA by associated downstream activities (processing, transport, retail/food services and capital expenditure) summed to \$5.1 million (Table 3-11).

Flow-ons to other sectors of the state economy added another \$30.8 million in output. The sectors most affected were the business services (\$4.2 million), trade (\$3.8 million), manufacturing (\$3.7 million) and

¹³ Estimates of economic contribution for the South East fishing region were not modelled as GVP for this region was less than \$500,000.

¹⁴ It should be noted that the sum of the economic contributions for the regions will not sum to the contributions for the state as a result of smaller linkages (i.e. multipliers) in the regions compared to the state as a whole.

transport sectors (\$1.7 million). The total output contribution in SA (direct and indirect) was estimated to be \$56.6 million in 2021/22.

The second to bottom row of Table 3-11 gives the total contribution/direct contribution ratio for each economic indicator. For output, the ratio of 2.2 indicates that for each dollar of sales generated by the MSF there was a total of \$2.20 of output generated by businesses throughout the state, \$1.00 in the fishing industry (fishing and downstream) and \$1.20 in other sectors of the economy. Similarly, the bottom row of Table 3-11 gives the total contribution/tonne ratio for each economic indicator. For output, the ratio indicates that for each tonne of fish sold by the MSF there was a total of \$30,500 of output generated by businesses throughout the state.

Table 3-11 Economic contribution of the SA MSF on the South Australian economy, 2021/22

Sector	Output		Employment ^a		Household Income		Contribution to GSP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	20.7	36.5%	117	42.6%	6.3	35.1%	13.1	40.1%
Processing	2.1	3.6%	2	0.7%	0.3	1.8%	0.7	2.1%
Transport	0.3	0.5%	1	0.4%	0.1	0.5%	0.1	0.3%
Retail	1.2	2.1%	9	3.3%	0.5	3.0%	0.7	2.2%
Food services	0.2	0.3%	2	0.6%	0.1	0.4%	0.1	0.3%
Capital expenditure ^b	1.4	2.5%	11	3.9%	0.5	2.9%	0.6	2.0%
Total Direct ^c	25.8	45.6%	142	51.6%	7.8	43.7%	15.4	47.0%
Flow-on effects								
Trade	3.8	6.7%	23	8.3%	1.5	8.4%	2.2	6.7%
Manufacturing	3.7	6.4%	8	3.0%	0.6	3.4%	1.1	3.3%
Business Services	4.2	7.4%	25	9.2%	2.0	11.3%	2.3	7.0%
Transport	1.7	3.1%	6	2.4%	0.5	2.8%	0.8	2.3%
Other Sectors	17.5	30.9%	70	25.4%	5.4	30.4%	11.1	33.8%
Total Flow-on ^c	30.8	54.4%	133	48.4%	10.1	56.3%	17.4	53.0%
Total ^c	56.6	100.0%	275	100.0%	17.9	100.0%	32.8	100.0%
Total/Direct	2.2	-	1.9	-	2.3	-	2.1	-
Total/Tonne	\$30,500	-	0.149	-	\$9,600	-	\$17,600	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 75 full-time jobs and 98 part-time jobs, that is, 173 jobs in aggregate, which was estimated to be equal to 117 fte jobs.

^b Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

^c Totals may not sum due to rounding.

Source: BDO EconSearch analysis

Table 3-12 Economic contribution of the SA Marine Scalefish West Coast fishing region on the Eyre and Western region, 2021/22

Sector	Output		Employment ^a		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	2.5	46.1%	18	54.4%	0.7	41.6%	1.6	50.3%
Processing	0.2	3.4%	0	0.5%	0.0	1.1%	0.0	1.4%
Transport	0.0	0.8%	0	0.4%	0.0	0.7%	0.0	0.4%
Retail	0.2	3.3%	2	4.9%	0.1	5.1%	0.1	3.4%
Food services	0.2	2.9%	1	4.0%	0.1	3.6%	0.1	2.6%
Capital expenditure ^b	0.2	3.3%	2	5.5%	0.1	5.0%	0.1	3.0%
Total Direct ^c	3.2	59.8%	23	69.8%	0.9	57.1%	2.0	61.1%
Flow-on effects								
Trade	0.3	5.4%	2	6.3%	0.1	8.1%	0.2	5.4%
Manufacturing	0.1	2.0%	0	1.1%	0.0	1.3%	0.0	1.0%
Business Services	0.3	5.2%	2	4.7%	0.1	7.9%	0.1	4.5%
Transport	0.2	3.4%	1	1.9%	0.1	3.2%	0.1	2.7%
Other Sectors	1.3	24.2%	5	16.2%	0.4	22.4%	0.8	25.3%
Total Flow-on ^c	2.1	40.2%	10	30.2%	0.7	42.9%	1.3	38.9%
Total ^c	5.3	100.0%	33	100.0%	1.6	100.0%	3.2	100.0%
Total/Direct	1.7	-	1.4	-	1.8	-	1.6	-
Total/Tonne	\$24,200	-	0.150	-	\$7,400	-	\$14,600	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 13 full-time jobs and 17 part-time jobs, that is, 31 jobs in aggregate, which was estimated to be equal to 18 fte jobs.

^b Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

^c Totals may not sum due to rounding.

Source: BDO EconSearch analysis

Table 3-13 Economic contribution of the SA Marine Scalefish Spencer Gulf fishing region on the Eyre and Western region, 2021/22

Sector	Output		Employment ^a		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	6.7	37.3%	58	50.8%	3.1	45.7%	2.4	28.0%
Processing	0.7	4.1%	1	0.6%	0.1	1.1%	0.2	2.1%
Transport	0.1	0.8%	0	0.4%	0.0	0.6%	0.0	0.5%
Retail	0.4	2.4%	4	3.6%	0.2	3.0%	0.3	3.2%
Food services	0.1	0.3%	1	0.5%	0.0	0.4%	0.0	0.4%
Capital expenditure ^b	0.6	3.4%	6	5.4%	0.3	4.1%	0.3	3.7%
Total Direct ^c	8.6	48.3%	70	61.2%	3.7	54.8%	3.3	37.8%
Flow-on effects								
Trade	1.3	7.3%	9	8.3%	0.6	8.8%	0.8	9.1%
Manufacturing	0.5	2.6%	2	1.4%	0.1	1.4%	0.1	1.5%
Business Services	1.0	5.7%	6	5.2%	0.5	7.0%	0.5	6.2%
Transport	0.8	4.4%	3	2.4%	0.2	3.4%	0.4	4.4%
Other Sectors	5.7	31.8%	24	21.4%	1.7	24.5%	3.5	40.9%
Total Flow-on ^c	9.2	51.7%	44	38.8%	3.1	45.2%	5.4	62.2%
Total ^c	17.9	100.0%	114	100.0%	6.8	100.0%	8.6	100.0%
Total/Direct	2.1	-	1.6	-	1.8	-	2.6	-
Total/Tonne	\$27,000	-	0.00	-	\$10,200	-	\$13,000	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 40 full-time jobs and 52 part-time jobs, that is, 92 jobs in aggregate, which was estimated to be equal to 58 fte jobs.

^b Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

^c Totals may not sum due to rounding.

Source: BDO EconSearch analysis

Table 3-14 Economic contribution of the SA Marine Scalefish GSV/KI fishing region on the Fleurieu and Kangaroo Island region, 2021/22

Sector	Output		Employment ^a		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	4.6	39.1%	42	51.6%	2.3	46.4%	1.4	25.5%
Processing	0.4	3.2%	0	0.5%	0.1	1.6%	0.1	1.6%
Transport	0.1	0.6%	0	0.3%	0.0	0.4%	0.0	0.4%
Retail	0.2	1.9%	2	2.4%	0.1	2.2%	0.1	2.5%
Food services	0.0	0.3%	0	0.3%	0.0	0.3%	0.0	0.3%
Capital expenditure ^b	0.3	2.6%	4	5.0%	0.1	2.8%	0.2	2.9%
Total Direct ^c	5.6	47.6%	49	60.1%	2.6	53.7%	1.8	33.2%
Flow-on effects								
Trade	0.7	6.4%	5	6.6%	0.4	7.6%	0.5	8.2%
Manufacturing	0.3	2.8%	1	1.5%	0.1	1.5%	0.1	1.8%
Business Services	0.8	7.0%	6	7.5%	0.4	8.1%	0.4	8.1%
Transport	0.3	2.3%	1	1.3%	0.1	2.0%	0.1	2.3%
Other Sectors	4.0	34.0%	19	22.9%	1.3	27.1%	2.6	46.4%
Total Flow-on ^c	6.2	52.4%	33	39.9%	2.2	46.3%	3.7	66.8%
Total ^c	11.7	100.0%	81	100.0%	4.9	100.0%	5.5	100.0%
Total/Direct	2.1	-	1.7	-	1.9	-	3.0	-
Total/Tonne	\$35,200	-	0.244	-	\$14,500	-	\$16,500	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 20 full-time jobs and 26 part-time jobs, that is, 46 jobs in aggregate, which was estimated to be equal to 42 fte jobs.

^b Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

^c Totals may not sum due to rounding.

Source: BDO EconSearch analysis

Employment and household income

In 2021/22, the MSF was responsible for the direct employment of around 117 full-time equivalents (fte) and downstream activities created employment of around 25 fte jobs state-wide. Flow-on business activity was estimated to generate a further 133 fte jobs state-wide. These state-wide jobs were concentrated in the business services (25), trade (23), manufacturing (8) and transport (6) sectors. The total employment contribution in SA was estimated to be 275 fte jobs.

For each fte job generated directly in Marine Scalefish fishing, processing and transport there were an additional 0.9 jobs (1.9 jobs in total) in the rest of the state. For each tonne of fish caught in the MSF there was around 0.149 of an fte job generated in the state.

Personal income of \$6.3 million was earned in the fishing sector (wages of employees and estimated drawings by owner/operators) and \$1.5 million in downstream activities in SA. An additional \$10.1 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 \$17.9 million in SA.

For each \$1.00 of household income generated directly by Marine Scalefish fishing, processing and transport in 2021/22 there was an additional \$1.30 (\$2.30 in total) generated in other sectors of the state economy. For each tonne of fish caught in the MSF there was approximately \$9,600 generated in household income in the state.

Contribution to GSP and GRP

As noted above, contribution to GSP or GRP is measured as value of output less the cost of goods and services (including imports) used in producing the output. In 2021/22, total MSF related contribution to GSP in SA was \$32.8 million, \$13.1 million generated by fishing directly, \$2.3 million generated by downstream activities and \$17.4 million generated in other sectors of the state economy.

For each \$1.00 contribution to GSP by the MSF and downstream industries there was an additional \$1.10 (\$2.10 in total) contribution to GSP in other sectors of the state economy. For each tonne of fish caught in the MSF there was approximately \$17,600 contribution to GSP.

Total contributions over time

Figure 3-6 and Figure 3-7 illustrate the total economic contribution of the fishery on the SA economy between 2002/03 to 2021/22. Estimates of economic contribution are expressed in real 2021/22 terms.

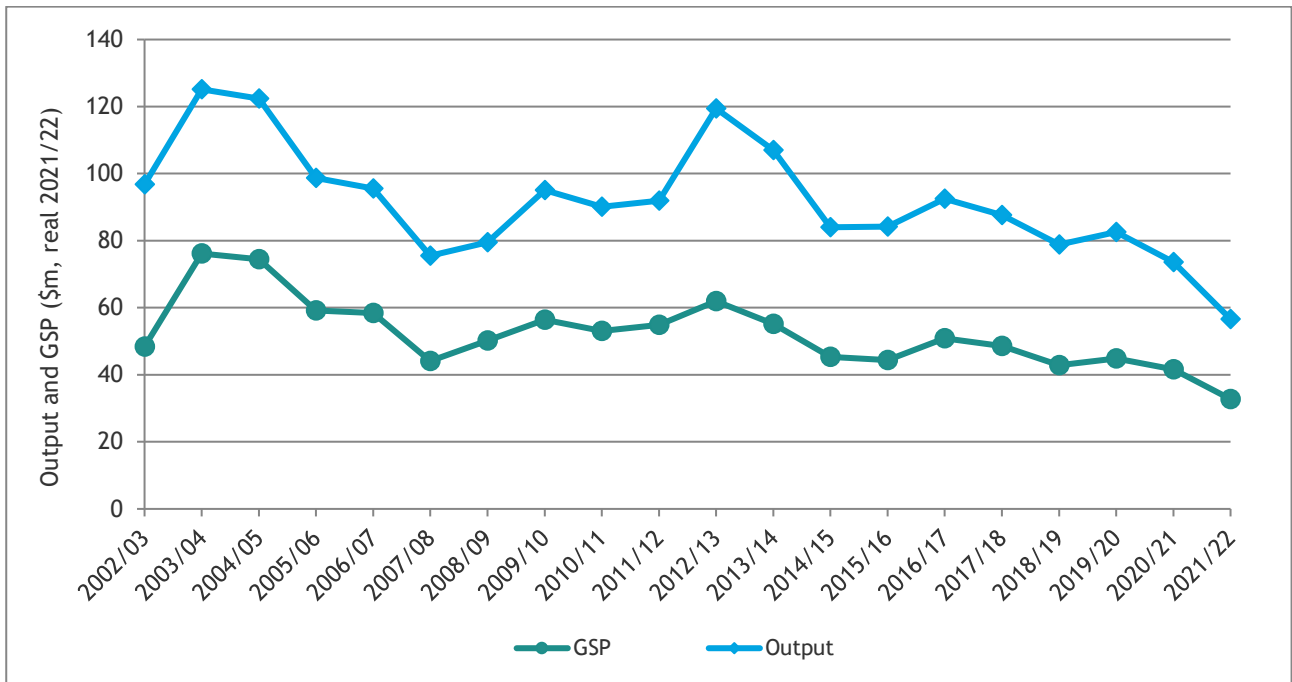
Estimates of economic contribution for 2021/22 are based on the most recent licence holder survey conducted in 2023. Estimates of economic contribution in earlier years were based on earlier economic indicator surveys. As economic contribution estimates for the years 2002/03 to 2021/22 are based on different survey samples and techniques, some of the variability between years, is therefore, attributable to sampling variability. Estimates in all years have been revised to remove survey bias as described in Appendix 1.

Estimates of economic contribution for 2002/03 do not include the impact of local retail and food service trade; these effects have been included in subsequent years.

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

In 2021/22, the total MSF related contribution to GSP in SA was \$32.8 million, including \$13.1 million generated by fishing directly, \$2.3 million generated by downstream activities (transport, processing, retailing, etc.) and \$17.4 million generated in other sectors (input suppliers to the fishing industry). In 2021/22, the MSF supported employment of around 117 full-time equivalents (fte) and downstream activities supported employment of around 25 fte jobs state-wide. Flow-on business activity was estimated to support a further 133 fte jobs state-wide. The total employment contribution in SA was estimated to be 275 fte jobs. There was decline in all economic contribution indicators between 2020/21 and 2021/22 as a result of the significant reduction of licences as part of the VLSP.

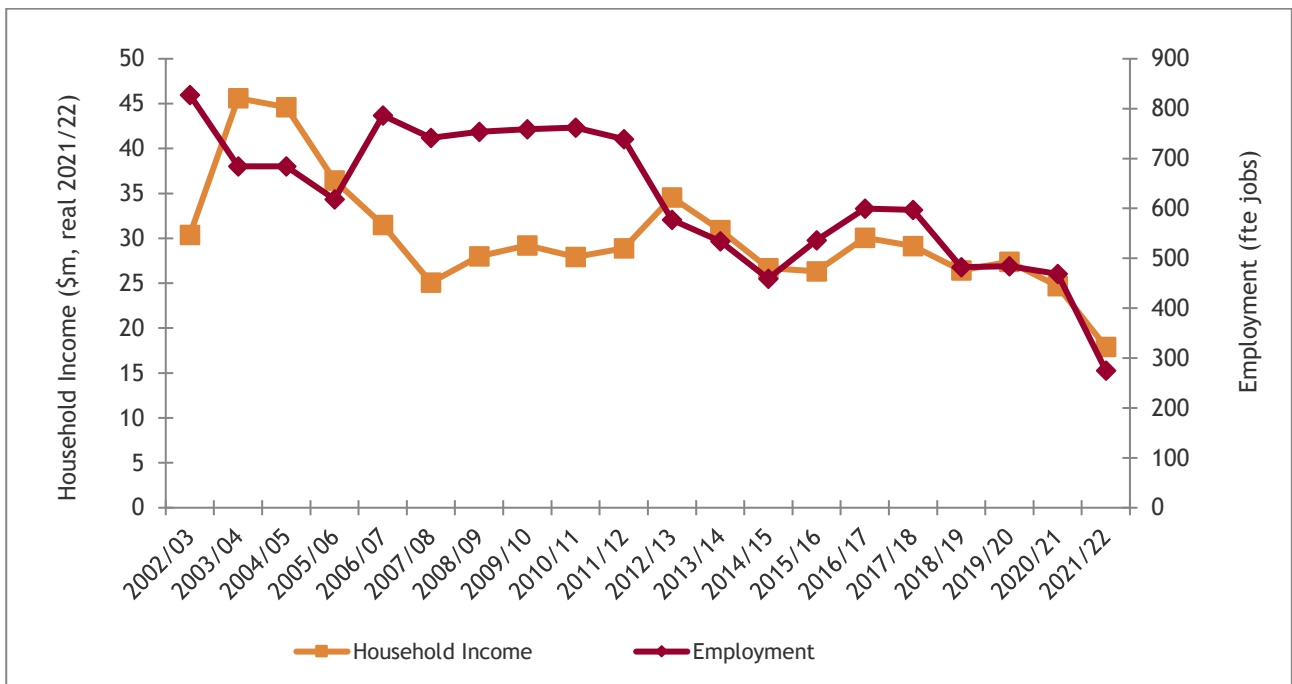
Figure 3-6 Total gross state product and output contribution of the SA MSF on the SA economy, 2002/03 to 2021/22 ^a



^a The bias correction method used to calculate these indicators has been revised, affecting the historical values, see Appendix 1.

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

Figure 3-7 Total employment and household income contribution of the SA MSF on the SA economy, 2002/03 to 2021/22 ^a



^a The bias correction method used to calculate these indicators has been revised, affecting the historical values, see Appendix 1.

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

3.6. Net Economic Return

Net economic return (NER) is the return from a fishery after all costs have been met. It is equal to fishing revenue less fishing costs (cost of labour, capital including depreciation, materials and an allowance for “normal” profit). NER is maximised when economic efficiency is maximised. NER¹⁵ 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 MSF and the good produced is the landed fish.

The unit costs or long term costs all need to be covered if the licence holder is to remain viable 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. 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.

Commercial fishing operations in Australia are not risk free. Returns can be impacted both positively and negatively by factors such as natural events, changes in market conditions, disease, and management regulations. 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 an opportunity cost of capital of 10 per cent has been used with sensitivity analysis at 5 per cent. In the case of the MSF, there is evidence that a 5 per cent risk premium (a component of the opportunity cost of capital) may be too high. The evidence includes the significant number of part-time fishers (who are less vulnerable to price fluctuations) and the existence of local markets (which are less vulnerable to exchange rate fluctuations). There is also evidence that the opportunity cost of labour (used to calculate the total value of unpaid labour) may be overestimated in the MSF as the average length of licence ownership was estimated at 23 years in the 2023 survey. Long-term ownership can create a barrier to exit and therefore licence holders could have a lower opportunity cost for time spent fishing.

NER has been estimated to be mostly negative in the fishery over the period 2002/03 to 2021/22 (Table 3-15). However, NER in 2021/22 shows signs of improvement. GVP was slightly higher because of price recovery post the COVID-19 pandemic. The VLSP and ITQ arrangements have enabled the industry to contract with fewer active licences and almost 100 fewer people employed in fishing businesses with associated lower labour costs. These labour cost savings have flowed through to a higher and positive NER (\$673,000 in 2021/22).

¹⁵ Net economic return or economic rent is comprised of three types of rent: entrepreneurial rent, quasi-rent and resource rent. As in any business some operators are more skilful than others and will therefore earn more profit. These profits, which are one component of economic rent, are *entrepreneurial rents*. In the short-term fishers may earn large surpluses over costs, which may provide prima facie evidence of substantial resource rents. However, there are some circumstances where such surpluses can occur but they are not true rents. These are referred to as *quasi-rents*. One example is where a fishery is developing or recovering and there may be under-investment in the fishery. Another example is where there is a short-term but unsustainable increase in price due to, for example, exchange rate fluctuations. However, some profits will be obtained because the natural resource being used (i.e. the fishery) has a value. These profits are described as *resource rents* and are also a component of economic rent.

With a sustained negative NER, licence values can be expected to decrease over time, however, estimated licence values have remained high (Figure 6-11) while rent has been negative. If the opportunity cost of labour and capital are assumed to be lower, the estimated NER would be higher.

Table 3-15 presents estimates of the NER (and its components) in the MSF between 2002/03 and 2021/22. The table also presents a sensitivity analysis in the far-right column to show the effect of adjusting the opportunity cost of capital (using a risk premium of zero) and labour (valuing unpaid labour at two thirds of the standard estimate) on NER. For comparison, opportunity cost of capital and labour was held constant across the time series. Under the standard assumptions, NER was estimated to be \$0.7 million in 2021/22, however, positive for the first time since 2014/15. Under the assumptions of the sensitivity analysis, NER is significantly more positive, estimated at around \$3.7 million in 2021/22.

Table 3-15 NER in the SA MSF, 2002/03 to 2021/22 (\$'000)^a

	Gross Income	Less Labour	Less Cash Costs ^b	Less Depreciation	Less Opportunity Cost of Capital (@10%)	Net Economic Return	Net Economic Return (0% risk premium, 2/3 opportunity cost of labour)
2002/03	50,159	20,687	16,345	3,707	2,966	6,455	12,740
2003/04	51,320	25,650	17,581	4,022	4,008	59	8,621
2004/05	45,058	24,387	18,527	3,733	3,721	-5,310	2,784
2005/06	34,980	19,798	15,600	3,527	3,515	-7,459	-609
2006/07	36,797	16,047	14,220	6,905	4,912	-5,287	967
2007/08	25,173	11,810	11,291	6,567	4,672	-9,167	-4,045
2008/09	27,170	13,078	10,701	6,497	4,622	-7,728	-2,342
2009/10	28,808	10,941	11,307	4,832	4,258	-2,529	2,116
2010/11	26,513	10,455	10,764	4,602	4,056	-3,364	1,068
2011/12	27,946	11,295	10,907	4,158	3,665	-2,078	2,341
2012/13	28,134	10,663	11,419	4,197	3,291	-1,436	2,847
2013/14	24,778	9,533	10,528	3,783	2,966	-2,033	1,819
2014/15	27,178	10,210	10,640	3,441	2,698	189	4,070
2015/16	24,986	8,915	10,710	4,418	3,230	-2,287	1,361
2016/17	25,101	8,856	10,560	3,970	2,902	-1,187	2,286
2017/18	24,469	8,601	10,399	3,562	2,604	-696	2,572
2018/19	21,542	7,344	10,333	5,080	3,841	-5,057	-1,571
2019/20	20,761	7,036	9,648	4,646	3,512	-4,081	-818
2020/21	19,128	5,805	8,142	3,980	3,009	-1,807	956
2021/22	20,677	6,288	7,768	3,035	2,912	673	3,746

^a Values are presented in real 2021/22 dollars. Nominal value are provided in Appendix Table 5-3. The bias correction method used to calculate these indicators has been revised, affecting the historical values, see Appendix 1.

^b Cash costs include costs of materials and services and exclude labour and interest costs. They also include the full cost of management including any fee waivers.

Source: BDO EconSearch analysis

4. OTHER INDICATORS

4.1. Factors Influencing the Economic Contribution of the MSF

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

4.1.1. Fishery stock status

In January 2018, SARDI published a report, the first in a new series, on fishery assessment relating to the MSF for 2017 (Steer et al. 2018). The most recent report in this series, Smart et al. 2022, provided an assessment of the fishery performance of 20 species comprising 30 stocks within the MSF. Of these, 23 (77 per cent) of stocks were classified as 'sustainable', 2 stocks (7 per cent) were 'depleted', 2 stocks (7 per cent) were 'recovering' and the remaining 3 stocks (10 per cent) were undefined as a result of insufficient information. The species classified as 'depleted' were Snapper in Spencer Gulf and West Coast and in Gulf St Vincent (Smart et al. 2022).

4.1.2. MSF reform

The need for reform in the MSF has been recognised for a number of years (Nurse-Bray et al. 2015). This is thought to be a result of too many commercial fishers and not enough fish to sustain a profitable industry. In 2018, the SA Government began the first steps in its efforts to reform the MSF by establishing a 'Commercial Marine Scalefish Fishery Reform Advisory Committee'. The purpose of the Committee was to investigate possible reforms such as zoning, quotas, fleet rationalisation and modernising fisheries management systems. The Committee held regional meetings with commercial licence holders as well as working with industry associations and requesting feedback on the industry consultation paper. In association with these reforms, a voluntary licence buy-back was proposed with the aim of at least removing 100 et and long line licences (CMSFRAC 2019).

In May 2020, the SA Government announced a \$24.51 million reform package for the MSF with the goals of improving the long-term sustainability of the state's fish stocks and profitability of businesses dependent on them. The package included the following key elements, beginning from 1 July 2021:

- Introduction of four management zones - West Coast, Spencer Gulf, Gulf St Vincent/Kangaroo Island and South East - to provide separate regional management arrangements for priority fish species.
- Establishment of individual transferable quota (ITQ) management systems for King George Whiting, Snapper, Southern Garfish and Southern Calamari for the MSF and the Rock Lobster fisheries, managed by a total allowable commercial catch.
- Separation of the commercial taking of Vongole and Sardine from the MSF and the constitution of the new fisheries under their own regulations.
- \$22 million to remove up to 150 licences through providing an opportunity for licence holders to voluntarily exit the fishery.
- \$2.51 million over four years to support PIRSA to deliver essential fisheries management and compliance services and cap individual licence fee increases to that of the CPI increase for four years.

On 1 July 2021, new and amended regulations were made under the Fisheries Management Act 2007 to implement these reforms; individual licence holders remaining in the fishery on that date, were allocated quota unit entitlements on their licence.

2023 Survey Responses

The licence holder survey undertaken in 2023 included a set of questions that collected licence holder perceptions of the reform. Note the sample only included licence holders who remained in the fishery post the reform and not those who exited the fishery. Concerns from licence holders about the future of the MSF were echoed throughout the survey, with many unsatisfied with the reform process, in particular the allocation of quota for the quota species (King George Whiting, Snapper, Garfish and Southern Calamari).

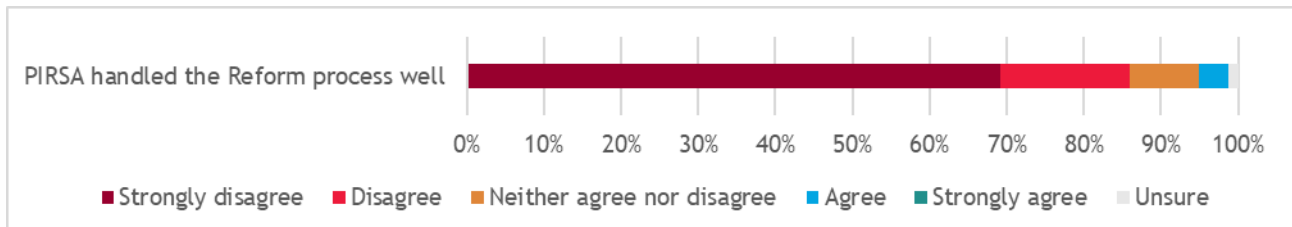
Prior to the implementation of the reform, MSF fishers were deeply concerned about the economic and biological sustainability of the fishery (Nursey-Bray et. al. 2015). The 2023 survey collected perceptions about the reforms, two years following implementation. This section provides an overview of perceptions of the respondents about how the reform has impacted their businesses and their wellbeing.

It is important to recognise that the expected positive effects of the reform for remaining businesses have not yet been realised. For the positive economic effects to be felt, those depleted fish stocks must recover (i.e. Snapper and Garfish stocks in the Spencer Gulf and Gulf St Vincent) must recover and, as the Snapper closure has demonstrated, this takes time to occur. Industry indicated further changes are required to ensure the fishery becomes more viable and efficient.

Perceptions of PIRSA handling of the reform

There is a widely held view in the MSF fishery that PIRSA has not handled the Reform process well. The survey indicated that 86 per cent of respondents disagreed with the statement ‘PIRSA handled the Reform process well’. However, 13 per cent were neutral or agreed to some extent (Figure 4-8).

Figure 4-8 Perceptions of PIRSA's handling of the reform



Source: 2023 licence holder survey

Impacts of the reform on MSF fishing businesses

There is little doubt that the reform process of the MSF has been an extremely difficult time for some MSF fishers. Some fishers have reportedly suffered significant economic losses, leading to detrimental impacts on their wellbeing. For some fishers, the process has clearly been cause for deep distress. However, this is not the case for all MSF fishers. A significant proportion of fishers have also experienced either positive or neutral impacts on their business and wellbeing (Figure 4-9).

This is shown in that 69 per cent of respondents felt that the profitability of their business had been negatively impacted, with 52 per cent of respondents indicating that it had been very negatively impacted. In contrast, 26 per cent felt that the profitability of their business had not been impacted or that it had been positively impacted.

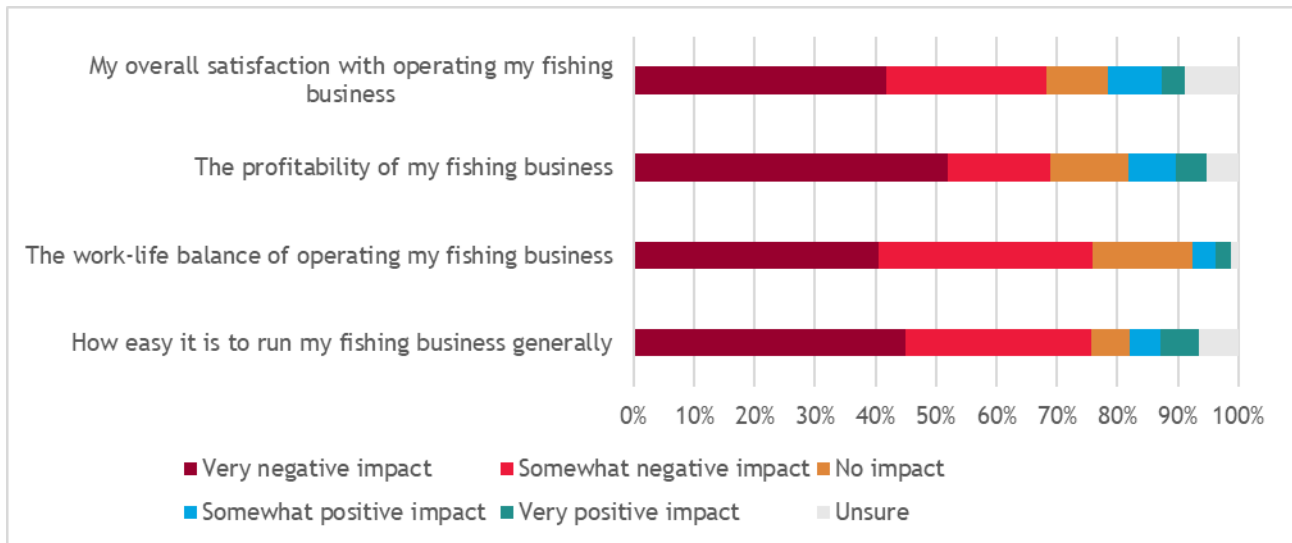
Additionally, 76 per cent indicated that it had become more difficult to run their fishing business generally, with 45 per cent indicating that the reform had had a very negative impact on how easy it was to run their

business. However, 18 per cent felt that the ease of running their business either had not been impacted or had been positively impacted.

The work-life balance of operating MSF fishing businesses has also been negatively impacted for 76 per cent of respondents, 41 per cent of whom felt it had been very negatively impacted. In contrast, 23 per cent either had not been impacted or had been positively impacted.

For 68 per cent of respondents, the overall satisfaction of operating their fishing businesses has been negatively impacted, 42 per cent of whom had been very negatively impacted. However, in contrast, 23 per cent of respondents either were not impacted or were positively impacted.

Figure 4-9 Impact of the Reform on MSF fishing businesses



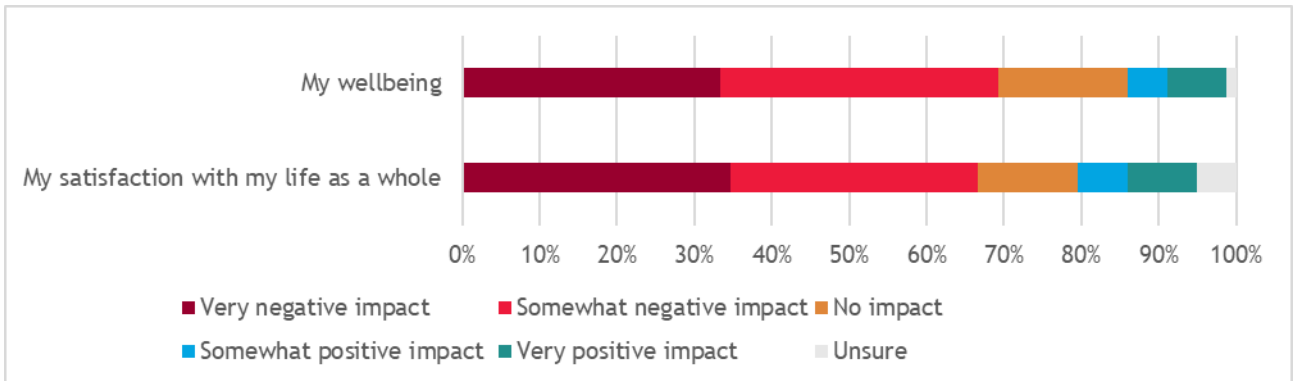
Source: 2023 licence holder survey

MSF Fisher Wellbeing

Patterns in fisher wellbeing mirror the business impacts, with similar proportions of fishers reporting negative wellbeing impacts. Responses indicated that 69 per cent of MSF fishers had experienced negative impacts on their wellbeing and 33 per cent experienced very negative impacts. However, 29 per cent had experienced either no impact or a positive impact. Interestingly 8 per cent, equalling 6 respondents had experienced very positive impacts on their personal wellbeing as a result of the Reforms (Figure 4-10).

Fisher satisfaction with their life as a whole followed a similar pattern with 67 per cent experiencing negative impacts, 35 per cent very negative, 28 per cent experienced no impact or positive impacts. As with overall wellbeing, 9 per cent (7 respondents) experienced a very positive impact on their satisfaction with life as a whole as a result of the Reforms.

Figure 4-10 Impact of the Reform on MSF fisher wellbeing

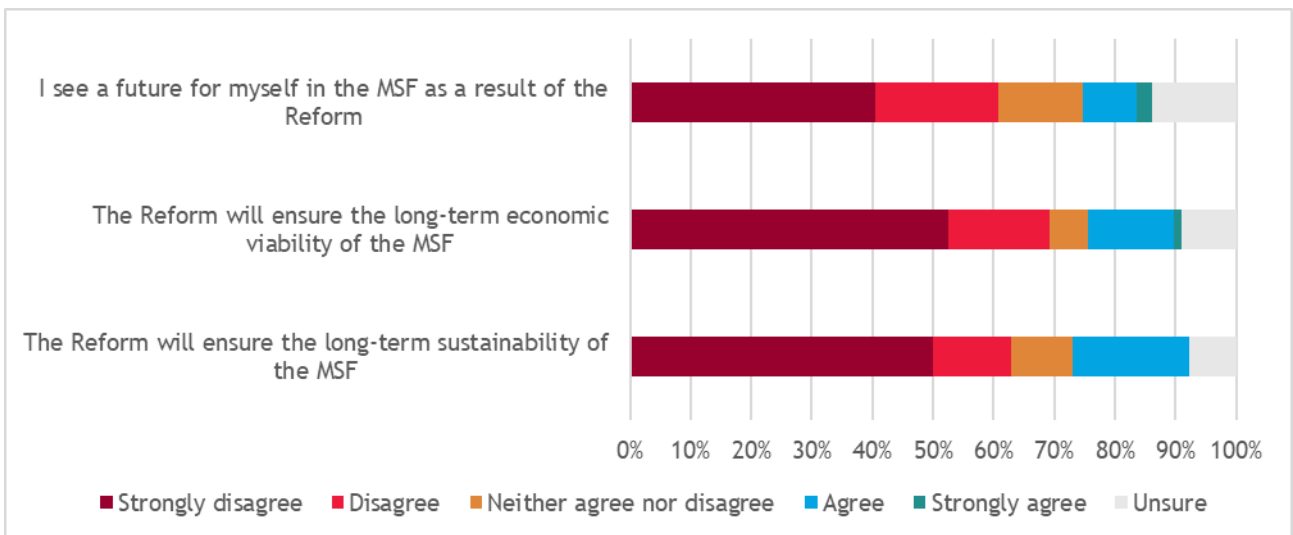


Source: 2023 licence holder survey

Future outlook of MSF fishers

The survey results indicate that the reforms have not had a positive impact on the future outlook of MSF fishers at this stage. Fisher future outlook indicates certainty about the future which influences the ability of fishers to invest and make decisions based on having a high level of confidence in and certainty about the future of the industry (Schirmer et al. 2017). Respondents indicated that 63 per cent did not agree that the reform would ensure the long-term sustainability of the MSF and 69 per cent did not agree that it would ensure the long-term economic viability of the MSF. However 19 per cent and 15 per cent, respectively, did agree with the statements (Figure 4-11).

Figure 4-11 Impact of the Reform on MSF fisher future outlook



Source: 2023 licence holder survey

It is not uncommon for the future outlook of fishers to be negatively impacted by reform, as was apparent following the NSW Commercial Fisheries Business Adjustment Program (Barclay 2020). This is likely due to the feelings of uncertainty that fishers experience as the structure of the fishery changes. Only 11 per cent of respondents agreed that they saw a future for themselves in the MSF as a result of the reform, though 28 per cent were either unsure or neither agreed nor disagreed. The remaining 61 per cent disagreed that they

saw a future for themselves in the fishery. This uncertainty was also apparent in comments provided by respondents such as:

“All these new fishing conditions have put a strain on my wife and my self, not really knowing what the outcome will be. My son left the industry as well as my Decky due to the uncertainties of where the industry is going.”

“It has been pretty tough for me because I have had to re-mortgage my house to be able to buy quota to keep fishing. I am totally unsure if it has been a good investment.”

4.1.3. Snapper management review

In June 2019, the South Australian Research and Development Institute (SARDI) provided updated information on Snapper spawning biomass estimates from the Daily Egg Production Method (DEPM) as well as other data and information sources, which identified that over the past five years, biomass in Spencer Gulf has reduced by an estimated 23 per cent and biomass in Gulf St Vincent has reduced by an estimated 87 per cent (Fowler et al. 2019).

The 2019 and 2020 Snapper assessment reports also classified the Snapper stocks in Spencer Gulf/West Coast as ‘depleted’ and in Gulf St Vincent as ‘depleting’ - the first time the Gulf St Vincent stock has received this assessment (Fowler et al. 2019, 2020).

These findings supported the need for urgent action to protect the future of Snapper stocks in SA. To help stocks recover as quickly as possible, a ban on Snapper fishing was introduced across the State with the exception of the South East zone where the population is classified as ‘sustainable’. During the ban the targeting, take and possession of Snapper is prohibited in the West Coast/Spencer Gulf and Gulf St Vincent regions. The total Snapper fishing closure began on 1 November 2019 and is in place until 30 June 2026 (PIRSA 2023). The closure has resulted in the Snapper catch declining significantly between 2019/20 and 2021/22. The decline in catch was further compounded by the VLSP and the introduction of ITQs on four key species. Prior to the reform licence holders who fished for Snapper could target Southern Calamari or Garfish when the Snapper Fishery was closed. As of 1 July 2021, fishers who predominantly targeted Snapper were issued mainly Snapper quota and, in many cases, only base allocations of the other quota species. This resulted in them losing an alternate species for revenue.

In September 2019, the SA Government announced that MSF licence holders impacted by the Snapper recovery measures would have their base licence fees (not net fees) cut by 50 per cent for the duration of the measures.

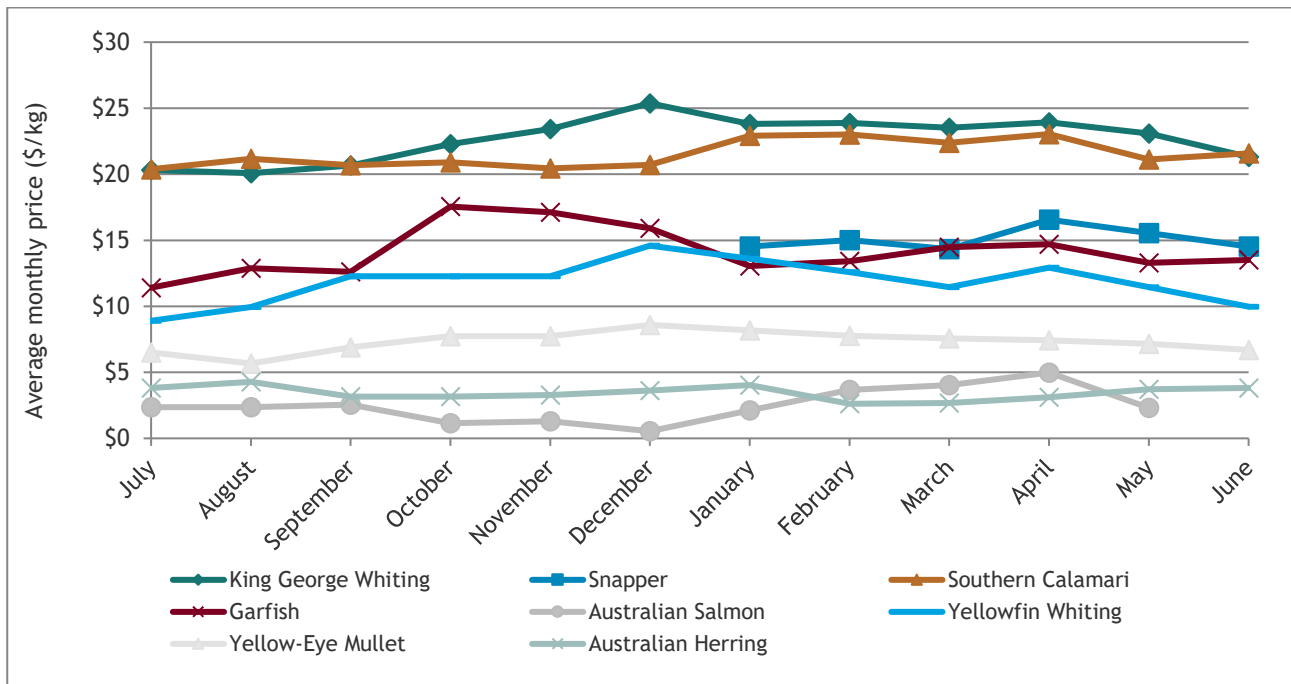
4.2. Monthly Variation of MSF Catch in SA

An outline of the seasonality of prices in SA (by month) for 2021/22 is provided in Figure 4-12 and Table 4-1.

The following can be observed for the key species in 2021/22:

- King George Whiting prices peaked in December and were lowest in July and August.
- Snapper prices peaked in April and were lowest in January, noting the only product caught in 2021/22 was from the south-east region.
- Southern Calamari prices were higher in the first half of 2022 than in the second half of 2021.
- Garfish prices peaked October and November and were lowest in July.

Figure 4-12 Average monthly prices for major Marine Scalefish species, SA, 2021/22 ^a



^a Prices for Snapper between July and December 2021 and in May 2022, Australian Salmon in January 2022 and June 2022, Yellowfin Whiting between September and November 2021, in January 2022 and in May 2022 and Yellow-Eye Mullet in October 2021, November 2021 and January 2022 were not available. The figure uses the price from the previous and subsequent months for these gaps, where possible.

Source: Table 4-1

Table 4-1 Average monthly prices (\$/kg) for major Marine Scalefish species, SA, 2021/22

	King George Whiting	Snapper	Southern Calamari	Garfish	Australian Salmon	Yellowfin Whiting	Yellow-Eye Mullet	Australian Herring
July	\$20.33	n/a	\$20.38	\$11.41	\$2.36	\$8.90	\$6.50	\$3.81
August	\$20.08	n/a	\$21.17	\$12.88	\$2.37	\$9.94	\$5.67	\$4.28
September	\$20.67	n/a	\$20.68	\$12.61	\$2.55	n/a	\$6.90	\$3.17
October	\$22.29	n/a	\$20.91	\$17.55	\$1.16	n/a	n/a	\$3.15
November	\$23.43	n/a	\$20.44	\$17.11	\$1.29	n/a	n/a	\$3.29
December	\$25.37	n/a	\$20.71	\$15.90	\$0.54	\$14.59	\$8.59	\$3.61
January	\$23.80	\$14.52	\$22.92	\$13.04	n/a	n/a	n/a	\$4.03
February	\$23.88	\$15.01	\$23.02	\$13.42	\$3.68	\$12.60	\$7.77	\$2.62
March	\$23.52	\$14.33	\$22.37	\$14.47	\$4.03	\$11.44	\$7.57	\$2.68
April	\$23.93	\$16.56	\$23.04	\$14.70	\$4.98	\$12.93	\$7.42	\$3.11
May	\$23.09	n/a	\$21.11	\$13.28	\$2.31	n/a	\$7.17	\$3.72
June	\$21.32	\$14.53	\$21.58	\$13.52	n/a	\$9.98	\$6.70	\$3.82

Source: SARDI Aquatic Sciences

4.3. Contribution to the Community

4.3.1. Community support activities

In addition to the economic contribution made to the state economies (Section 3.6), MSF 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. The estimated time spent on community based activities by licence holders (including licence holders' family members and employees) in 2021/22 is summarised in Table 4-2.

On average, each licence holder (including family members and employees) spent almost 16 hours per month on community based activities. It is likely that these estimates understate the full community impact of the fishery, as not all licence holders were confident providing estimates of the community service activities undertaken by their employees. Assuming that the average estimate provided by the survey participants is a reasonable representation of the average amount of community service for the average licence holder, MSF licence holders, as a whole, spent around 3,285 hours per month on community based activities.

Table 4-2 Estimated time per month spent on community based activities, 2021/22

Community Activity	Hours per month	
	Average Per Licence Holder	All Licence Holders ^a
Participating in conservation activities	0.4	77
Participating in marine rescue and recovery	0.7	154
Participation in fishing related research	1.7	355
Provision of technical advice to committees panels etc.	4.4	911
Volunteering for community services	1.4	282
Volunteering at local sporting clubs	5.3	1,088
Other (please specify)	2.0	417
Total^b	15.9	3,285

^a Calculation based on scaling up average hours per month per licence holder for all 207 licence holders.

^b Total may not sum due to rounding.

Source: 2023 licence holder survey

Assuming the value of time foregone is approximately \$30 per hour¹⁶, the average value of each licence holder's time spent on community based activities was around \$476 per month or around \$5,713 for the full year (2021/22). On a whole of fishery basis, the aggregate value of time spent on community based activities was around \$99,000 per month or almost \$1.2 million for the full year.

¹⁶ Valuation of time is a difficult concept. The key question is whether one should use the value of time in work to value time spent on leisure or other non-work related activities. The use of \$30 per hour is an approximation of the opportunity cost of time in work for the average person (i.e. an approximation of the average wage rate). The Australian Bureau of Statistics used 3 methods to value volunteers' time and produced a range of estimates from \$27.85/hr to \$32.49/hr in 2023 dollars (inflated from 1997 estimates (Ironmonger 2002, p. 3)).

4.3.2. Local and regional services/businesses

The operation of the MSF (and the employment the fishery generates and the households it maintains) has either directly or indirectly contributed to the provision, maintenance and expansion of a number of local and regional services and businesses. A summary of the MSF's contribution to various services and businesses is provided in Table 4-3.

Table 4-3 MSF contribution to local and regional services/businesses

Service/Business	Location	Fishery Contribution
Marine shops	Port Lincoln, Port Adelaide, Adelaide, Streaky Bay, Minlacowie, Moonta, Osborne, Port Pirie	Purchase engines and other fishing equipment, supply bait
Motor vehicle dealerships	Port Lincoln	Purchase motor vehicles
Motor vehicle parts/tyre shops	Port Lincoln, Kadina, Kingscote, Minlacowie, Ceduna, Adelaide, Ardrossan, Port Pirie	
Service stations	Port Lincoln, Elliston, Moonta, Port Wakefield, Stansbury, Edithburgh, Streaky Bay, Minlacowie, Ardrossan, Kingston, Ceduna, Wallaroo, Corny Point, Cape Jaffa, Port Pirie, Cowell, Port Augusta, Whyalla	Purchase fuel, vehicle maintenance
Boat & engine repair services	Port Lincoln, Stansbury, Kingscote, Kingston, Ceduna	Maintenance of boats and engines
Freight companies	Port Lincoln, Kadina, Port Pirie, Port Adelaide, Adelaide, Streaky Bay	Freight, packing and handling, purchase ice
Supermarkets	Port Lincoln, Stansbury, Kingscote, Port Vincent, Streaky Bay, Kingston, Point Turton, Ardrossan	Purchase provisions
Seafood retailers	Kingscote, Port Adelaide, Edithburgh, Kingston, Victor Harbor	Supply local fish
Fish & chip shops	Port Lincoln, Victor Harbor	Supply local fish
Restaurants	Port Lincoln	Supply local fish
Hardware Stores	Kingscote, Streaky Bay, Port Lincoln, Ardrossan	Misc. supplies
Accounting firms	Port Lincoln	Purchase accounting services
Construction companies	Point Turton	Fix boat ramp
Processor/wholesales	Adelaide, Ceduna	Purchase ice, supply local fish

Source: 2023 licence holder survey

Note that some of the fishery's contribution to the community is quantified in Section 3.5, but the need for services (e.g. schools and police) and the contributions to various organisations (e.g. hospitals) means the

fishery contributes to the community in more ways than just generating income and the direct purchase of goods and services.

While it was difficult to quantify the contribution the fishery makes to local and regional services and businesses, an estimate was made of the number of children from fishing families and fishing families' employees that attended local schools.

Of those who participated in the survey there were 63 dependent children (under the age of 18) who were members of fishing families and fishing families' employees in 2021/22. There were 52 children who belonged to licence holder families and 11 were children of employees. Of these 52 children, at least 43 of them attended local schools (some were younger than school age). As well as the 63 dependent children (under the age of 18) there were 47 children over the age of 18 who were members of fishing families and fishing families' employees in 2021/22 remaining in regional communities.

In the 2023 survey, licence holders were also asked about other immediate family living in their regional community (i.e. parents and partners). Survey participants indicated that there were 116 immediate family members of licence holders or licence holders' employees living in the region.

4.4. Other Indicators

4.4.1. Time in fishery

In the 2023 survey, the number of years that individual licence holders in the MSF had owned fishing licences ranged from 1 year to 60 years, with an average length of ownership by individual licence holders of 23 years. The average length of time spent working in commercial fishing was slightly longer, 28 years.

Several fishing families have had family members working in commercial fishing for a number of generations. The number of generations involved in commercial fishing ranged from 1 to 7, with the average 2.

4.4.2. Age of licence holders

The average age of licence holders at the time of the 2023 survey was 54 years. The average age of licence holders at the time of the 2020 survey was 53 years. This can be used to show that the average age of licence holders has not changed significantly since the VLSP. However, the average age of MSF licence holders (in both the 2020 and 2023 surveys) is below that for SA owner/managers of broad acre and livestock properties. In 2021, the average age of farm owner/managers was 62 years (DAFF 2023).

4.4.3. Fishing location

Survey respondents fished in four broadly defined regional locations: the West Coast (i.e. the west coast of Eyre Peninsula to the Western Australian border), Spencer Gulf, Gulf St Vincent/Kangaroo Island and the South East (see Figure 1-1). Some licence holders (approximately 23 per cent) indicated that they fished in more than one of these locations during the 2021/22 season.

In 2021/22, the Spencer Gulf region was the most popular location fished with 43 per cent of survey respondents (52 licence holders) indicating that they fished in that region. Approximately 27 per cent (33 licence holders) fished in the Gulf St Vincent/Kangaroo Island region, 21 per cent fished on the West Coast (26 licence holders) and 8 per cent fished in the South East region (10 licence holders).

5. SOCIAL INDICATORS

Survey respondents were asked about their perceptions of various aspects of the MSF including the outlook for the fishery, management, equity of treatment and their satisfaction with fishing. These perceptions and views are summarised in Figure 5-1 to Figure 5-2.

5.1. Perceptions of fishery management and stewardship

Figure 5-1 shows fisher perceptions about various aspects of fishery management and stewardship. Firstly, they were asked about the flexibility of management in the MSF. This is an important indicator to understand whether fishers feel that management processes enable adequate flexibility to ensure an ongoing viable livelihood (Triantafillos et. al. 2014). The survey showed that only 24 per cent of licence holders indicated that fisheries management is flexible enough to allow fishers to adapt to changing conditions. However, this was a significant improvement on the results in 2020 with 18 per cent more fishers indicating agreement with the statement.

Lack of awareness and understanding of consultation processes are a common reason for a lack of participation in consultative processes (Triantafillos et. al. 2014). To understand the level of knowledge of ways to participate in fishery management survey respondents were asked whether they understood how decisions are made and whether they know how to have a say. Responses indicated that 39 per cent agreed with the statement *'I understand how decisions about fisheries management are made'* and 47 per cent of licence holders agreed *'If I want to have a say in the management of the fishery I know how to'*. In comparison to the 2020 survey these indicators have seen a significant decline with a drop of 26 and 32 per cent of licence holders agreeing with the statements, respectively. However, fishers were also asked whether they knew how to contact the people who represent their interests on the fisheries advisory committees, to which 90 per cent responded that they did.

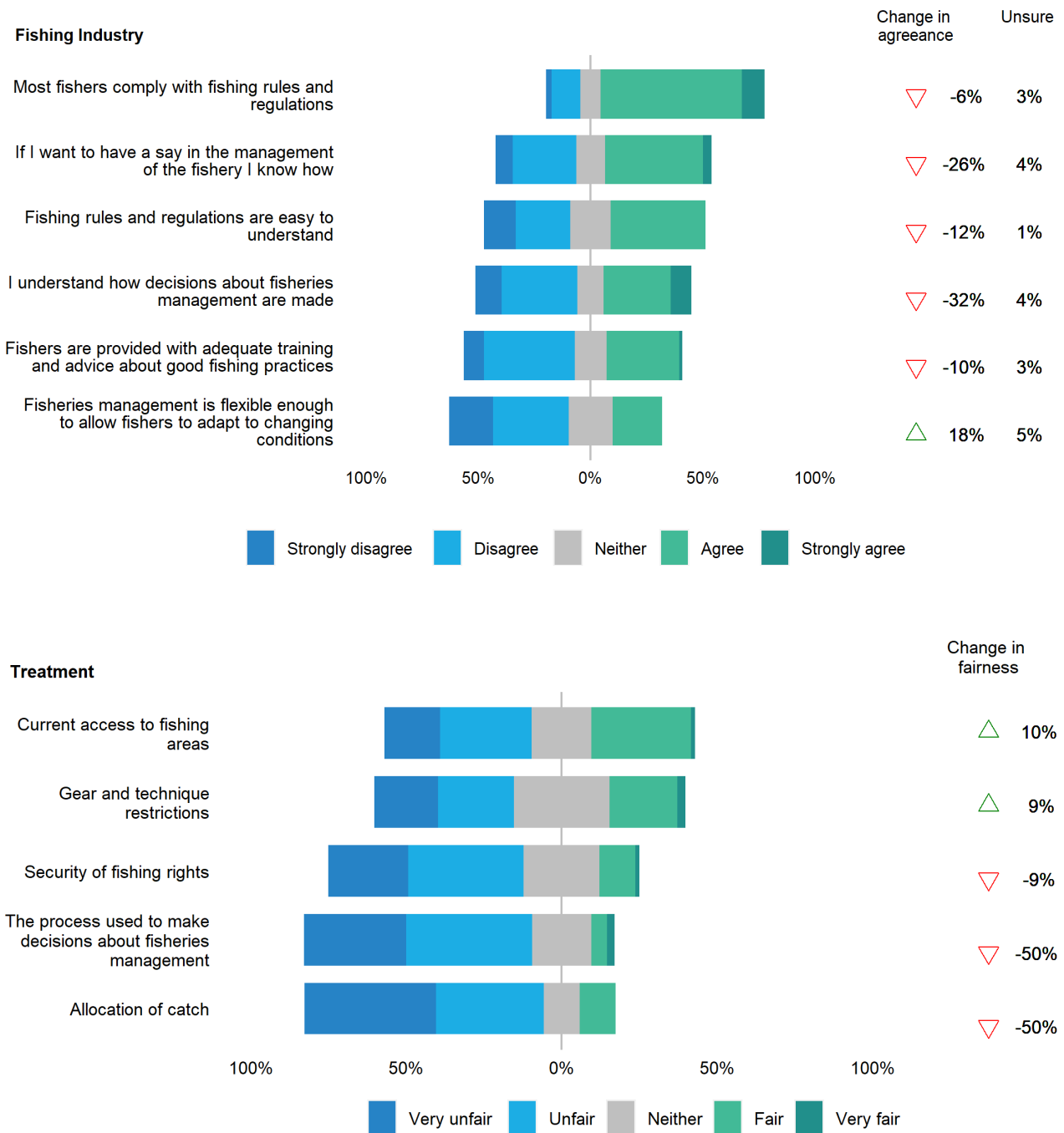
Fishers were also asked about the equity of their treatment in the MSF across various fishery aspects relative to other users of the resource (Figure 5-1). This indicator relies on perception, this perception is the reality as experienced by fishers, regardless of management intent (Triantafillos et. al. 2014). The responses were again mostly negative overall. Approximately 75 per cent of respondents felt that the processes used to make decisions about fisheries management and allocation of catch were unfair or very unfair. Around 64 per cent of licence holders felt that the security of fishing rights was unfair or very unfair. Approximately 47 per cent of respondents felt that access to fishing areas was unfair or very unfair and 42 per cent felt gear restrictions were unfair or very unfair. Notably, the proportion of respondents between the 2020 and 2023 surveys stating they felt the processes used to make decisions about fisheries management and allocation of catch were unfair or very unfair increased by 50 per cent. This is largely as a result of the increased pressure and competition of the growing recreational sector (Marine Fishers Association (MFA) pers. Comm.).

Fishers were also asked about their level of support for co-management arrangements. Although previous studies have indicated that co-management has not been a popular option in the MSF (Nurse-Bray et. al. 2015), responses to the survey indicated that 72 per cent of respondents did support co-management and 53 per cent supported the principle of representative bodies collecting fees through their license to ensure their interests are represented. However, 28 per cent were opposed to representative bodies collecting fees for this purpose.

Three questions were asked in the survey to understand how fishers perceive stewardship in the MSF (Figure 5-1). Fishers were asked whether they believed that *'most fishers comply with fishing rules and regulations'*. This indicator can be used to monitor changes in the proportion of fishers who comply with

and feel motivated as stewards of the resource (Triantafillos et. al. 2014). If most people feel that most fishers comply with fishing rules and regulations, they are more likely to feel influenced to comply themselves. The survey indicated that 74 per cent of licence holders agreed with the statement which showed a 6 per cent drop in agreeance in comparison to the 2020 survey.

Figure 5-1 Fisher’ perceptions of fishery management, stewardship and fairness in the MSF ^a



^a 72 licence holders provided responses to these social questions.

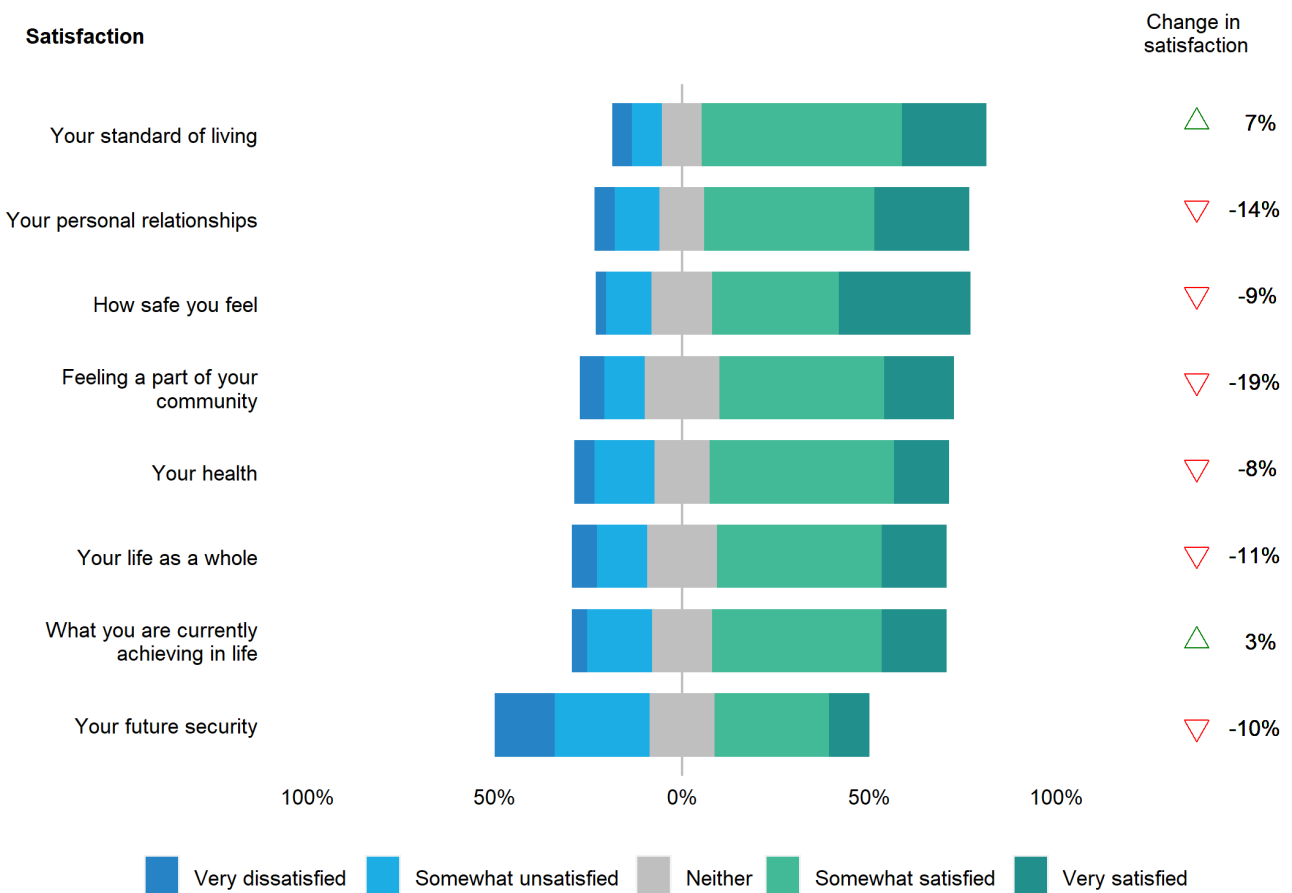
Source: 2023 Licence Holder Survey

The ability of fishers to comply with rules and regulations also impacts their stewardship of the resource. Fishers cannot be successful stewards if they lack knowledge of fishing rules and regulations (Triantafillos et. al. 2014). The survey indicated that 46 per cent agreed that *'fishing rules and regulations are easy to understand'* and 35 per cent agreed *'fishers are provided with adequate training and advice'*. Both of these indicators showed a decline in agreeance of 12 per cent and 10 per cent, respectively.

5.2. Fisher satisfaction

A fisher's overall satisfaction with their fishing is a useful indicator of whether they are achieving the benefits they consider important from fishing (Triantafillos et. al. 2014). Fishers were asked to indicate their satisfaction with 8 aspects of fishing in the MSF (Figure 5-2). Responses were somewhat positive overall, with 6 out of the 7 aspects receiving a majority satisfaction level. The 2 aspects with the highest satisfaction were *'your standard of living'* (74 per cent satisfaction level) and *'your personal relationships'* (79 per cent satisfaction level). The lowest rated component of satisfaction was the *'your future security'* (42 per cent satisfaction level). Since 2020, fisher satisfaction with these aspects mostly declined between 9 and 19 per cent. Satisfaction with *'feeling a part of your community'* declined the most significantly since 2020 (19 per cent), followed by *'your personal relationships'* (14 per cent).

Figure 5-2 Fisher satisfaction in the MSF ^a

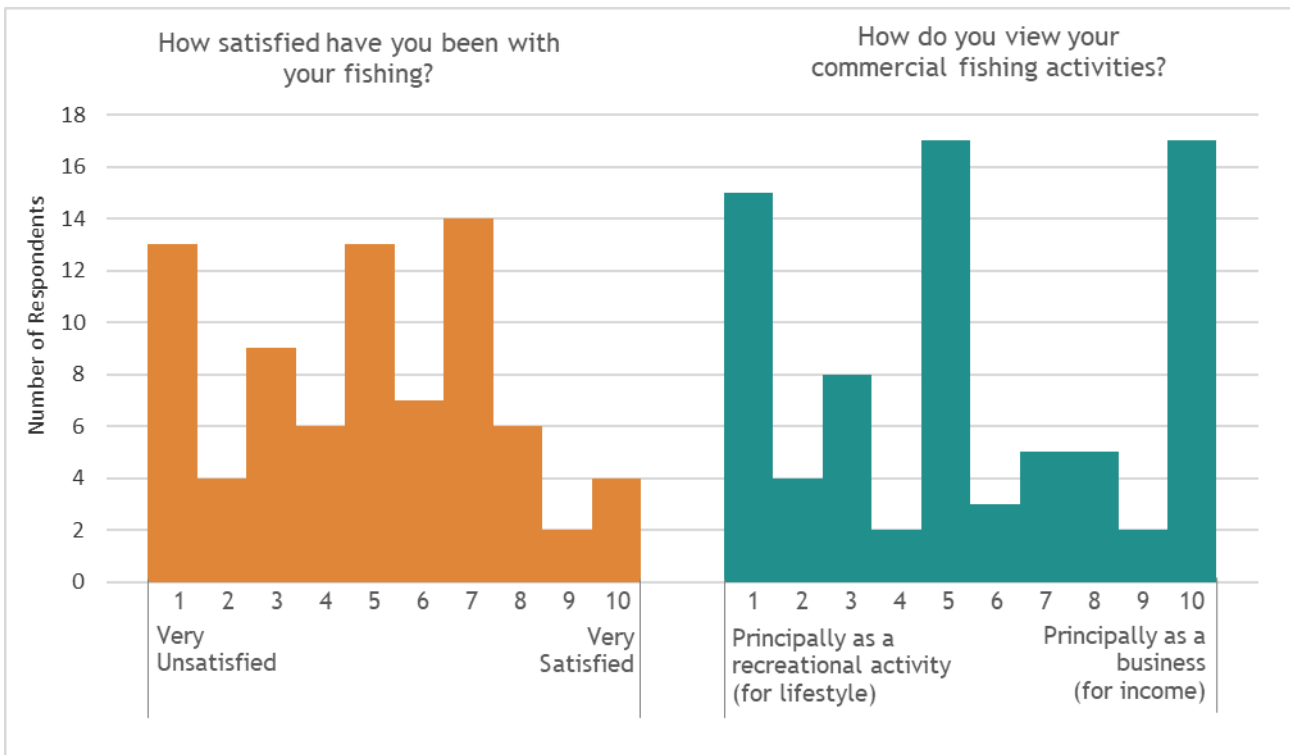


^a 72 licence holders provided responses to these social questions.

Source: 2023 Licence Holder Survey

In 2022, how survey participants viewed their commercial fishing activities was quite evenly split between viewing it principally as a business and principally for the lifestyle. Interestingly, there were a large number of respondents who indicated that the lifestyle aspects of fishing were just as important as the income earned. Responses were mixed when licence holders were asked how satisfied they have been with their fishing activities with more respondents favouring being unsatisfied. When asked to compare their satisfaction to three, five and ten years ago, the majority of respondents felt their satisfaction was lower or much lower.

Figure 5-3 Fishers' satisfaction with fishing and how they view their commercial fishing activities in the MSF



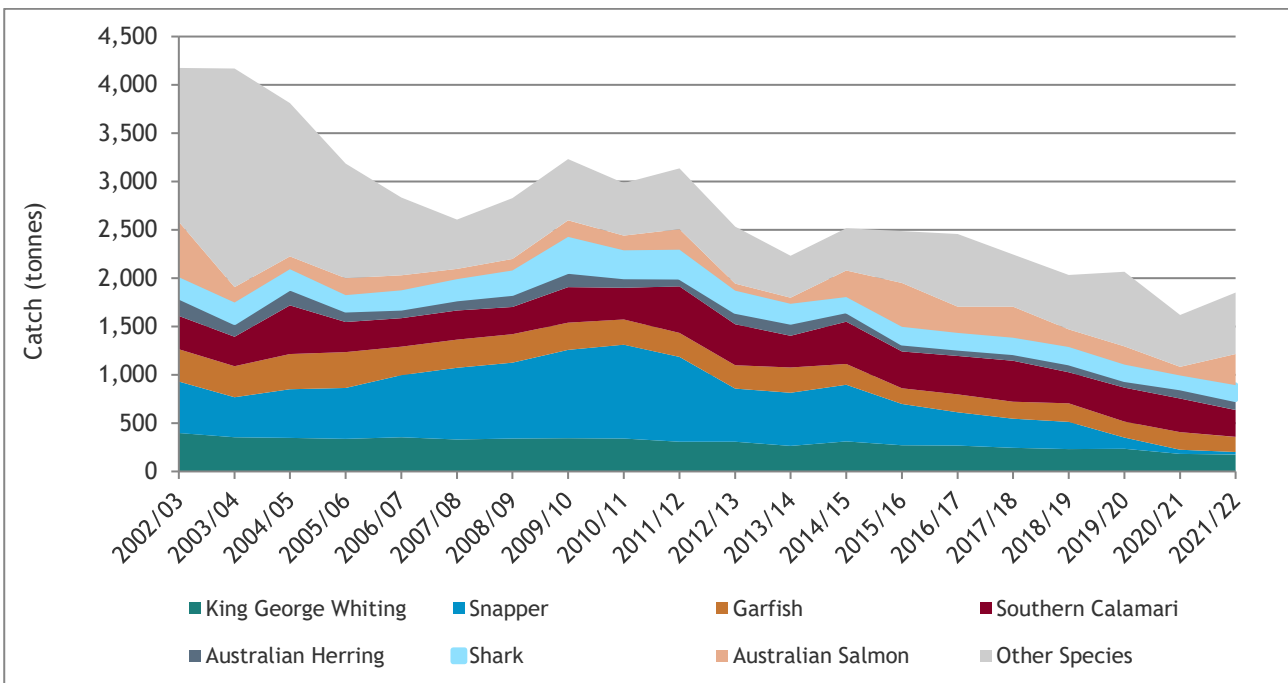
Source: 2023 Licence Holder Survey

6. ECONOMIC TRENDS IN THE FISHERY

6.1. Catch and Gross Value of Production

Figure 6-1 illustrates that total catch in the fishery followed a declining trend between 2002/03 and 2021/22. The fall, from 4,175t to 1,851t, is due to a decrease in catch of a number of key species including Australian Salmon, Shark, King George Whiting and Garfish. Catch of Snapper followed an increasing trend between 2003/04 and 2010/11, although it has declined significantly since and the fishery was closed to taking Snapper in November 2019 for a period of six years¹⁷ (Figure 6-1). Some of the decline in the catch of Snapper between 2011/12, and 2018/19 when the fishery was closed, is the result of trip limits constraining catch.

Figure 6-1 SA MSF catch, 2002/03 to 2021/22



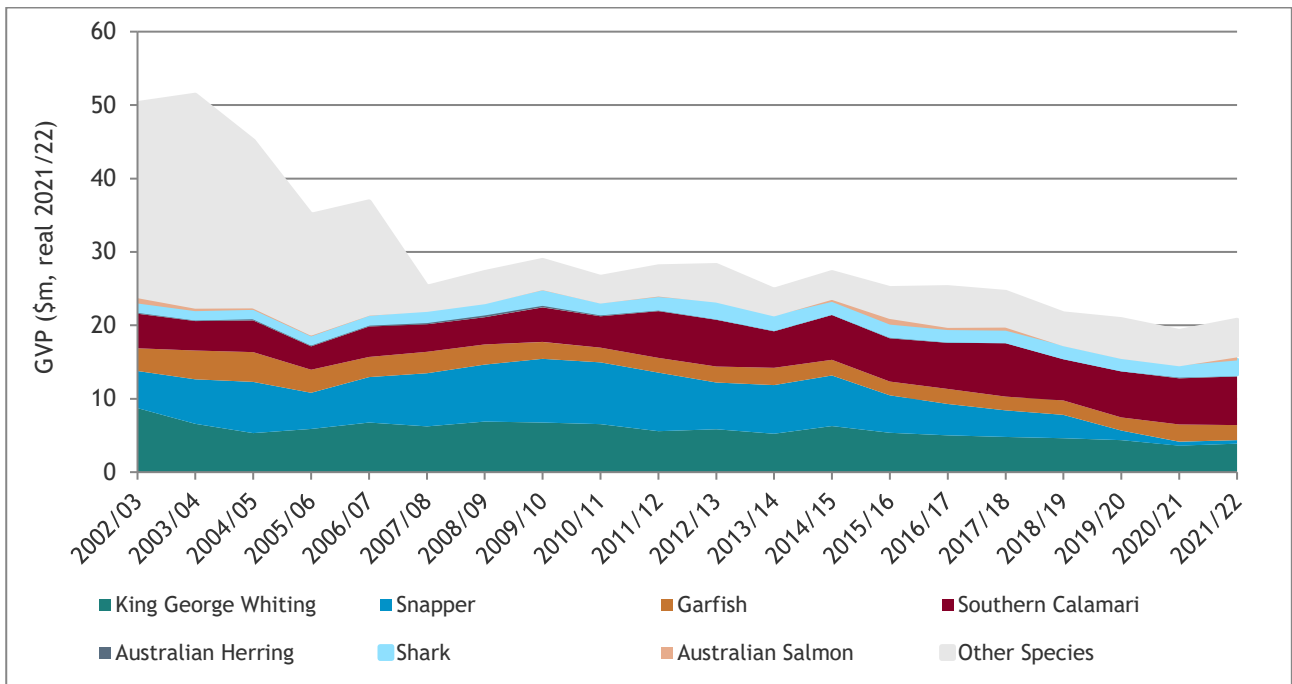
Source: Table 3-2

The total GVP for the MSF for the period 2002/03 to 2021/22 is illustrated in Figure 6-2. The value of catch fluctuated between years but has also followed a decreasing trend since 2002/03. As the average real price of Marine Scalefish species has decreased marginally over this period, the fall in GVP is attributable to the decline in catch. This is also highlighted in Figure 6-3 where catch, GVP and price indices for the fishery for 2002/03 to 2021/22 are illustrated.

The total catch of Marine Scalefish species in 2021/22 was 1,851 tonnes, a 14 per cent increase compared with the previous year (1,618 tonnes). However, the GVP of the MSF in 2021/22 was \$20.7 million, only 8 per cent greater than in 2020/21 (\$19.1 million). This was a result of a fall in average price across the total catch.

¹⁷ Except for a small amount of catch in the South East of SA.

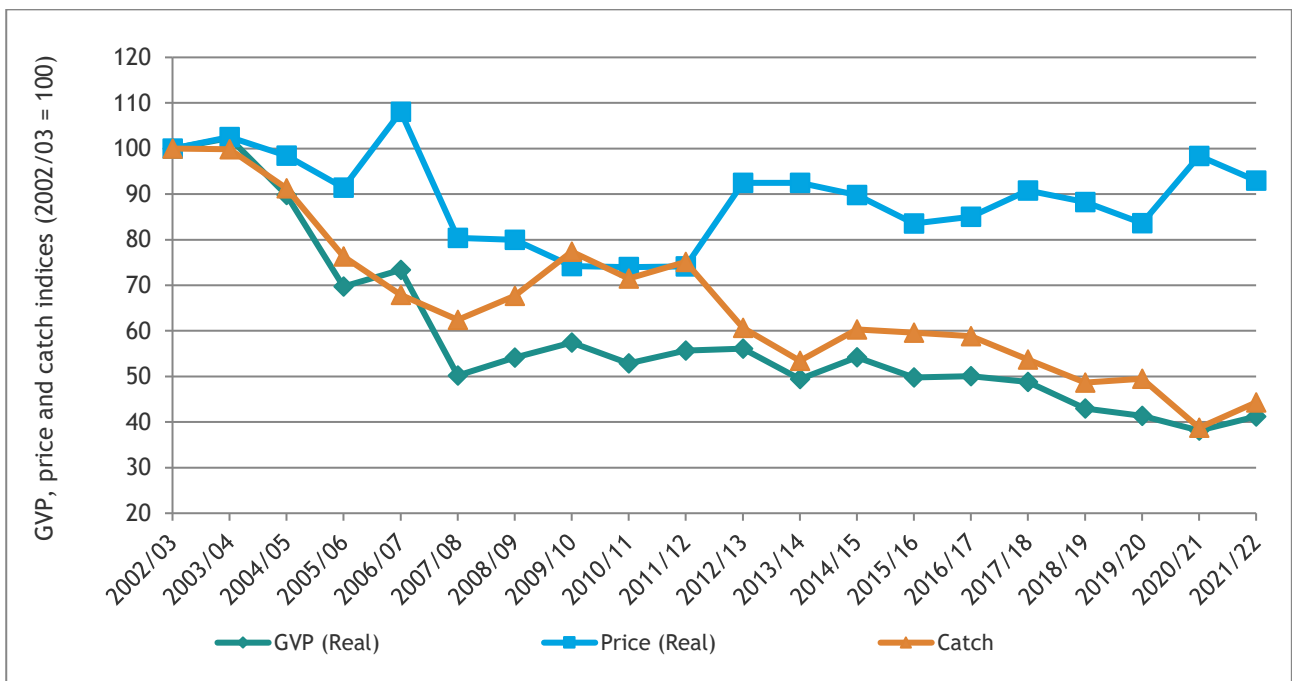
Figure 6-2 MSF GVP, 2002/03 to 2021/22 ^a



^a Estimates are expressed in real 2021/22 dollars.

Source: Table 3-2

Figure 6-3 GVP, price and catch indices for the MSF, 2002/03 to 2021/22^{a,b}



^a Estimates are expressed in real 2021/22 dollars.

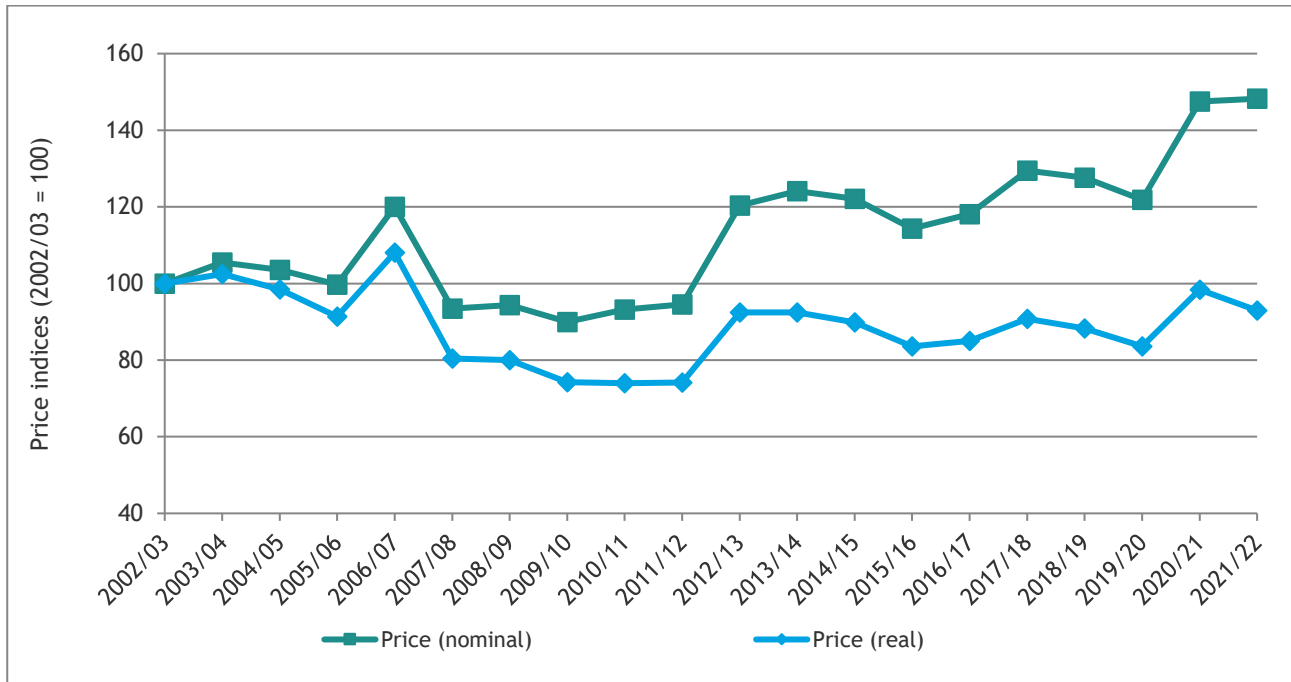
^b Note that by using a single measure of price (aggregate of all species) for a multispecies fishery the index can be influenced by a change in species mix as well as an actual change in market price.

Source: Table 3-2

Figure 3-3 (Section 3.2) presents the average real price for six of the main species in the MSF between 2002/03 and 2021/22. Each of the species had a higher real price in 2021/22 than in 2002/03. The greatest price increases over the period were for Shark (165 per cent), Snapper (90 per cent), Southern Calamari (75 per cent), Australian Herring (58 per cent) and Garfish (41 per cent).

Figure 6-4 shows that between 2002/03 and 2021/22 the 48 per cent increase in nominal average price of Marine Scalefish species was equivalent to a 7 per cent fall in real price.

Figure 6-4 Price indices for the SA MSF, 2002/03 to 2021/22^{a,b}



^a Nominal price refers to the beach price in the current year's dollars. Real price is the nominal price adjusted for the purchasing power of money. The CPI (consumer price index) has been used to make this adjustment (ABS 2022).

^b Note that by using a single measure of price (aggregate of all species) for a multispecies fishery the index can be influenced by a change in species mix as well as an actual change in market price.

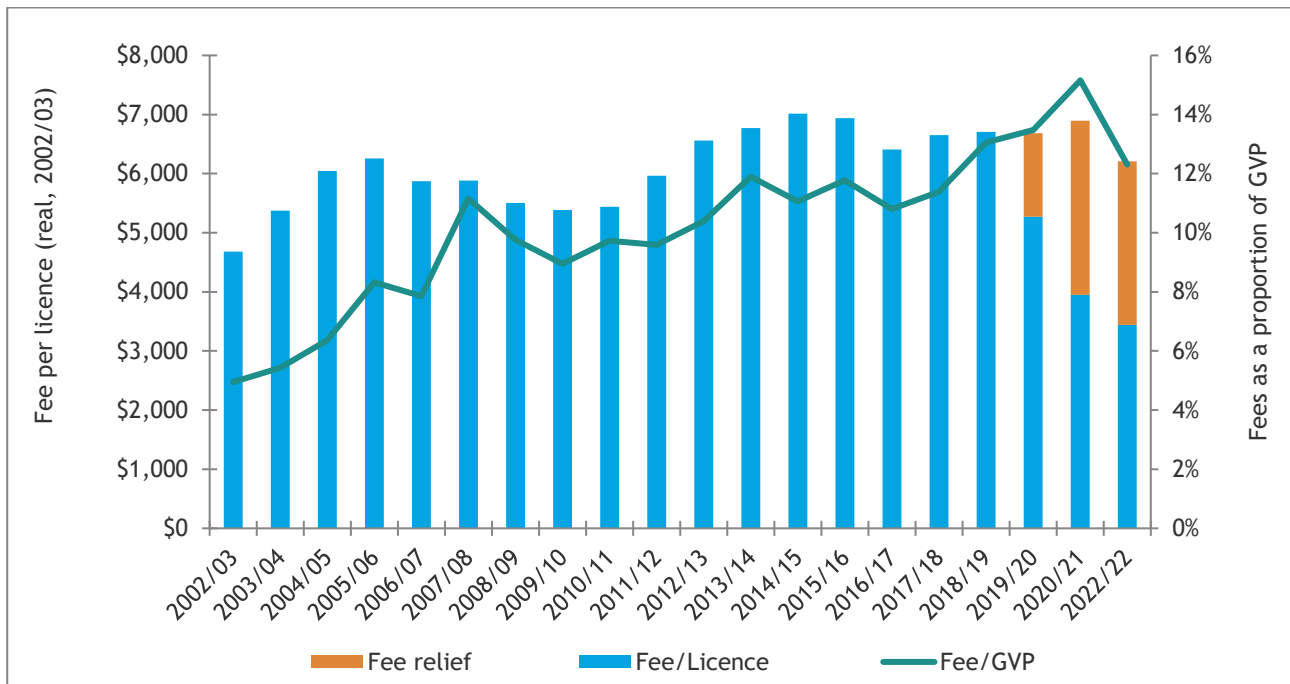
Source: Table 3-2 and ABS (2022)

6.2. Management Costs

The average management fee per licence holder and licence fees as a proportion of GVP are illustrated in Figure 6-5. Licence fees as a percentage of GVP fluctuated over the period 2002/03 to 2021/22 but followed an increasing trend overall, from 4.9 per cent in 2002/03 to 12.3 per cent in 2021/22. This was the result of a reduction in GVP (59 per cent), and despite little change in real aggregate licence fees (2 per cent increase) over the same period.

The average management cost per licence holder decreased from \$4,680 in 2002/03 to \$3,440 in 2021/22, in real terms (Figure 6-5). In 2021/22, the average management cost per net entitled licence was \$7,710 and for line only licences it was \$2,772 (including the fee relief provided for both the Snapper closure and the reform). From 2022/23 only licence holders who hold Snapper quota will receive 50 per cent fee relief on their base fees.

Figure 6-5 Management fee per licence holder and as a proportion of GVP, MSF, 2002/03 to 2021/22^a



^a Estimates are expressed in real 2021/22 dollars.

Source: Table 3-3

6.3. Financial Performance Indicators

Average income

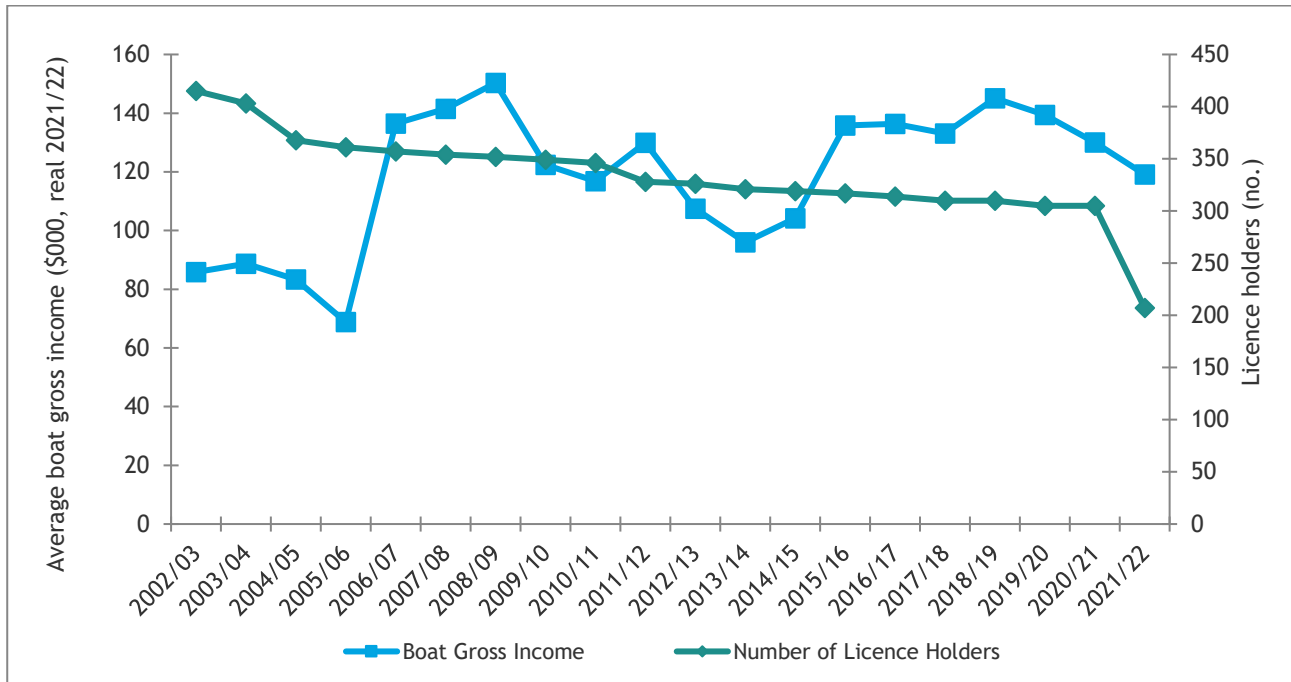
Average income and total number of licences in the fishery for the period 2002/03 to 2021/22 are illustrated in Figure 6-6. The total number of licence holders in the fishery declined from 415 in 2002/03 to 207 in 2021/22. This decrease is due to natural attrition in the restricted MSF, the licence amalgamation scheme in the MSF, the 2005 voluntary net buyback scheme, the implementation of marine parks, and the most recent VLSP and the introduction of ITQS. As a result of the decrease in the number of licence holders and despite a decrease in fishery GVP, the average income per boat in the fishery has increased from almost \$86,000 in 2002/03 to \$119,000 in 2021/22 (real 2021/22 dollars) (Figure 6-6).

Despite the number of licence holders decreasing significantly between 2020/21 and 2021/22 (98 licences were surrendered as part of the VLSP) the average income per boat in the fishery did not follow a corresponding increase (Figure 6-6). This is the result of the 2023 survey data being much more representative than the last two surveys and has reduced the bias towards higher income respondents. It may also be due, in part, to a change in the composition of the survey samples, i.e. a higher proportion of line-only licence holders and a corresponding lower proportion of fishers with net entitlements in 2023 compared to 2020. Also, assuming those active licence holders in 2020/21 who remained in the fishery stayed active in 2021/22 then 48 of the 98 licences removed would have been considered inactive which would have been a contributing factor in the average income per boat in the fishery not increasing.

It should be noted that total allowable commercial catches (TACCs) for the four key species were not reached in 2021/22. However, this is common after a fishery restructure where the fishery is still adjusting and operators are restructuring their businesses. Additionally, licence holders who were predominantly issued Snapper quota and are impacted by the Snapper closure, cannot take other key species (Garfish, King

George Whiting and Southern Calamari) unless they have quota. Another factor for lower boat income in 2021/22 relates to the fact that every licence holder receiving a base allocation of quota for all four species in all regions resulting in average quota holdings that are not viable to catch (MFA pers. comm.).

Figure 6-6 Average income per licence holder in the MSF, 2002/03 to 2021/22^a



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

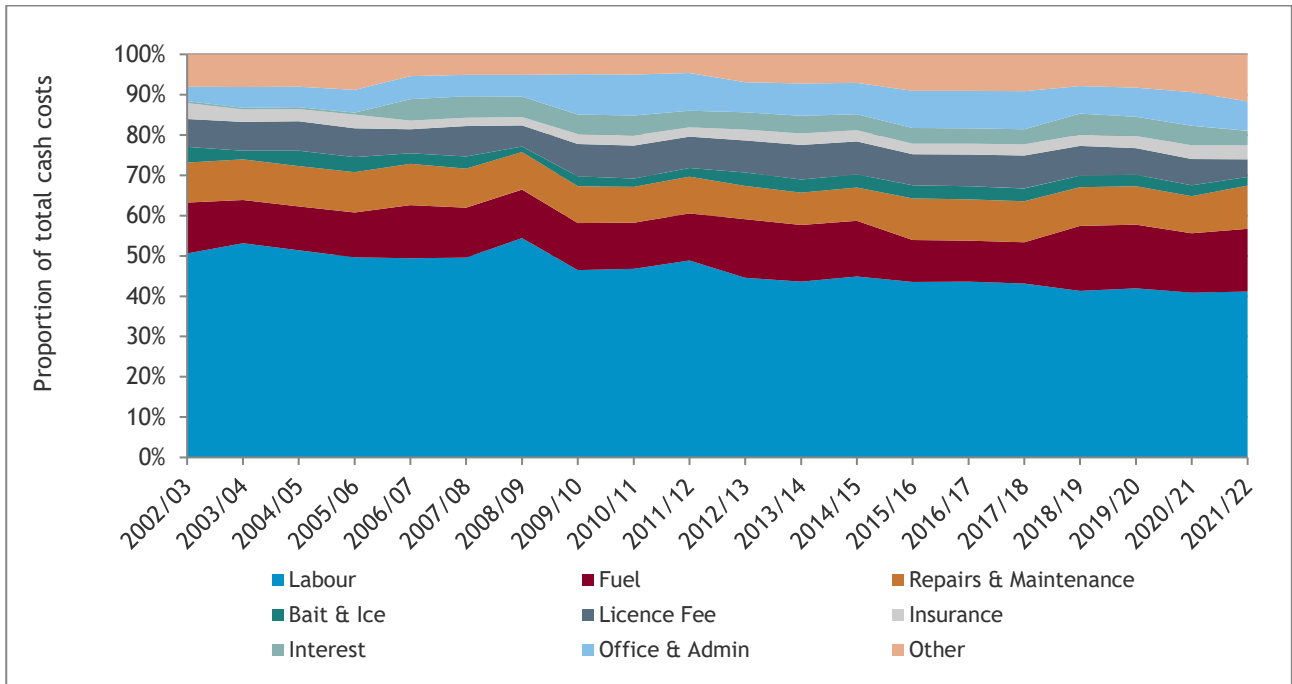
Source: Table 3-3, Table 3-5 and Appendix Table 4-1 to Appendix Table 4-6

Operating cost trends

A breakdown of major cost items as a proportion of total cash costs is illustrated in Figure 6-7. Labour costs accounted for the largest share of total cash costs across the period 2021/22 to 2021/22 (41 per cent in 2021/22). Labour costs are comprised of payments to licence owners and crew as well as an imputed wage to those licence owners and other family members who are not paid a wage directly by the business. Other significant cash costs were fuel, repairs and maintenance, and office and admin. Interest payments and office and administration costs show a significant increase from 2005/06 compared to preceding years. Fuel as a proportion of all other costs also increased over the period, although this is a much more gradual change.

The cash costs detailed in Figure 6-7 can be categorised as either variable or fixed costs. Total variable costs and total fixed costs are illustrated in Figure 6-8 on an average per boat basis. Total variable costs have fluctuated between years but generally followed a slight 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 but have also followed an increasing trend over time (Figure 6-8). The variation in average total costs per boat over the 20-year period is due, in part, to a change in the composition of the survey samples, i.e. a higher proportion of line-only licence holders and a corresponding lower proportion of fishers with net entitlements in 2023 compared to 2020.

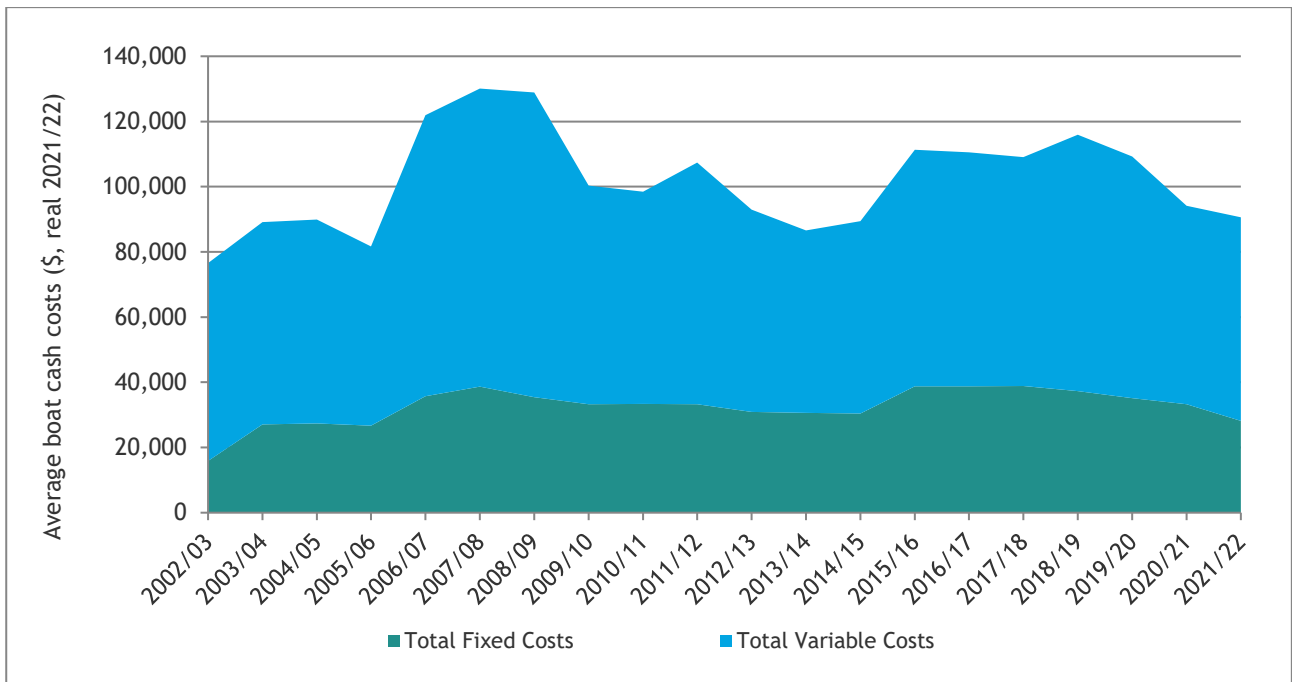
Figure 6-7 Costs shares in the MSF, 2002/03 to 2021/22^a



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

Source: Table 3-5 and Appendix Table 4-1 to Appendix Table 4-6

Figure 6-8 Average total costs in the MSF, 2002/03 to 2021/22^a



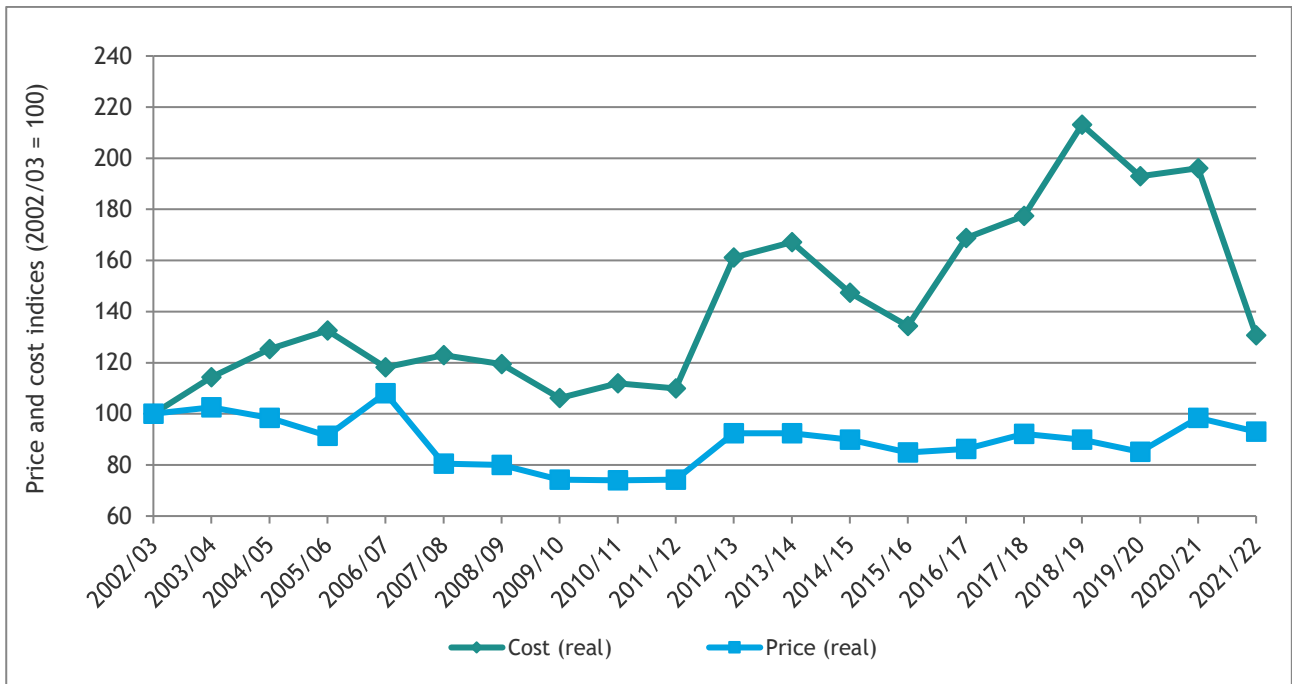
^a Estimates of average costs are expressed in real 2021/22 dollars.

Source: Table 3-5 and Appendix Table 4-1 to Appendix Table 4-6

Cost price squeeze

Price and cost indices for the years 2002/03 to 2021/22 are summarised in Figure 6-9. These indicators are derived from the average price and average cost per kilogram of catch. Between 2002/03 and 2021/22 the average price of Marine Scalefish species decreased by 7 per cent in real terms. The average costs of catching Marine Scalefish species followed an increasing trend over the same period (31 per cent in real terms) with a steep fall between 2020/21 and 2021/22 in line with the reduction in active licences (Figure 6-9).

Figure 6-9 Price and cost indices for the MSF, 2002/03 to 2021/22 ^a



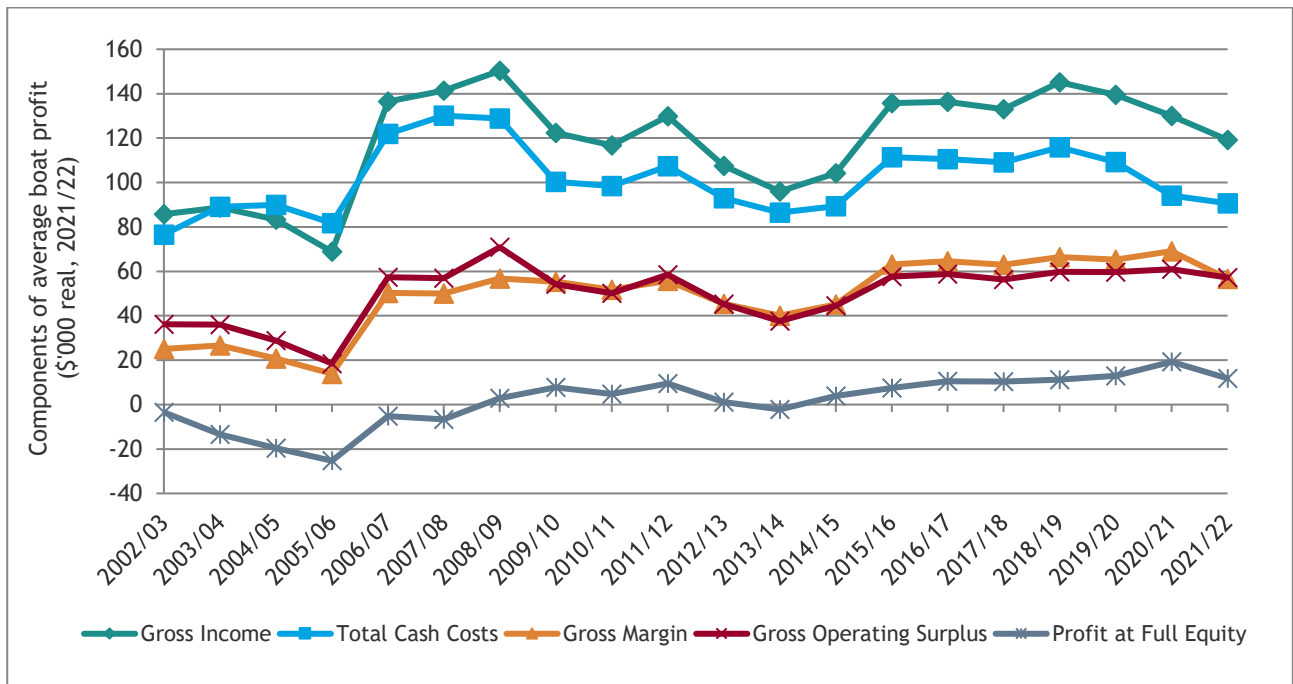
^a Estimates of price and cost are expressed in real 2021/22 dollars.

Source: Table 3-2, Table 3-5 and Appendix Table 4-1 to Appendix Table 4-6

Profitability

Selected measures of profitability are summarised in Figure 6-10 for the years 2002/03 to 2021/22. Changes in each of the profitability measures for the fishery were closely related to the average income earned. Profitability measures followed a decreasing trend between 2002/03 and 2005/06 and an increasing trend since (Figure 6-10).

Figure 6-10 Average income and profit per boat in the MSF, 2002/03 to 2021/22^a



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

Source: Table 3-5 and Appendix Table 4-1 to Appendix Table 4-6

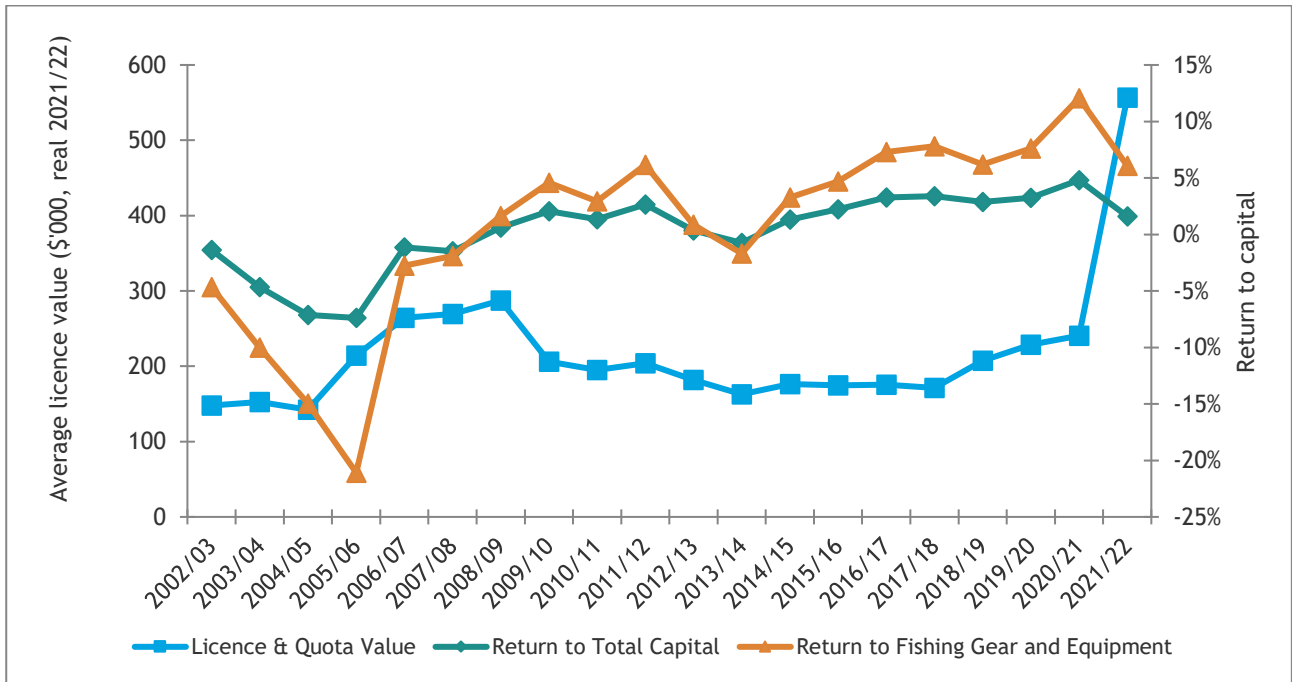
Return to capital

Estimates of the average licence value (including quota) and the rate of return to capital are illustrated in Figure 6-11. Total capital includes boats, licence/quota, fishing gear, sheds, vehicles and other capital items used as part of the fishing enterprise. Return to capital is calculated to be profit at full equity as a percentage of both total capital employed and total capital excluding the licence and quota value.

One of the limit reference points associated with achieving the economic objectives of the fishery is a decreasing trend in annual return to capital over a three-year period. This limit reference point was breached once over the period 2003/04 to 2005/06 when the estimated rate of return to total capital declined in each year. Overall, the rate of return to total capital for the fishery has fluctuated year to year but has generally followed an increasing trend to 2021/22.

The average value of licences in the fishery increased steadily between 2002/03 and 2008/09 despite year to year variation. Between 2008/09 to 2013/14, licence values followed a declining trend but increased slightly through to 2020/21 in real terms. As previously mentioned, the rise in licence value in recent years was possibly in response to raised expectations around a licence buyback scheme. The value of licence was adjusted to include the value of quota for key species allocated for the first time in 2021/22 and corresponds with the sharp increase in value for that year (Figure 6-11).

Figure 6-11 Return on capital in the SA MSF, 2002/03 to 2021/22

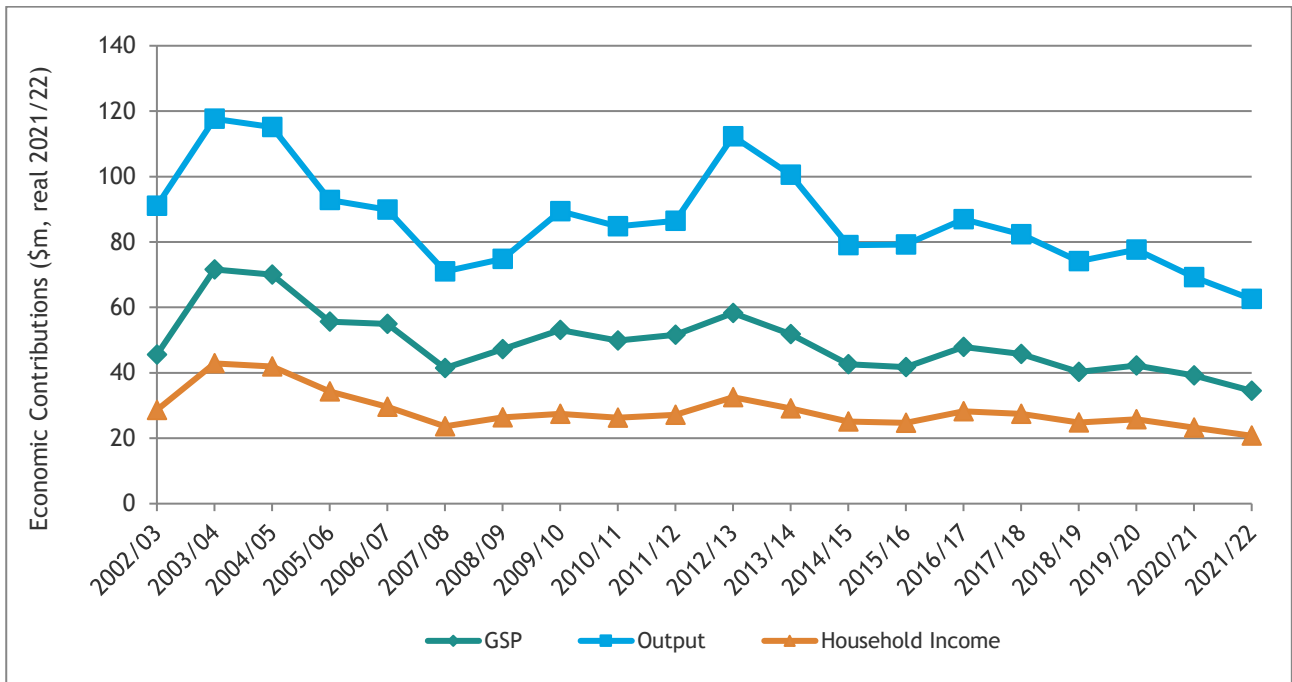


Source: Table 3-5 and Appendix Table 4-1 to Appendix Table 4-6

6.4. Contribution to SA Economy

Figure 6-12 and Figure 6-13 illustrate the total economic contribution of the fishery on the SA economy between 2002/03 and 2021/22. Total economic contribution refers to the direct fishing industry contributions (fishing, processing, etc.) and the indirect contributions on other sectors of the economy. The change in total output and GSP contributions are closely related to changes in price and fishery GVP (Figure 6-12). Output, household income and GSP all followed a declining trend over the period. There was also a decline in the employment contribution of the fishery over the whole period (Figure 6-13). This is mainly due to a decrease in the number of licence holders and a general decline in the fishery overall. There was decline in all economic contribution indicators between 2020/21 and 2021/22 as a result of the significant reduction of licences as part of the VLSP.

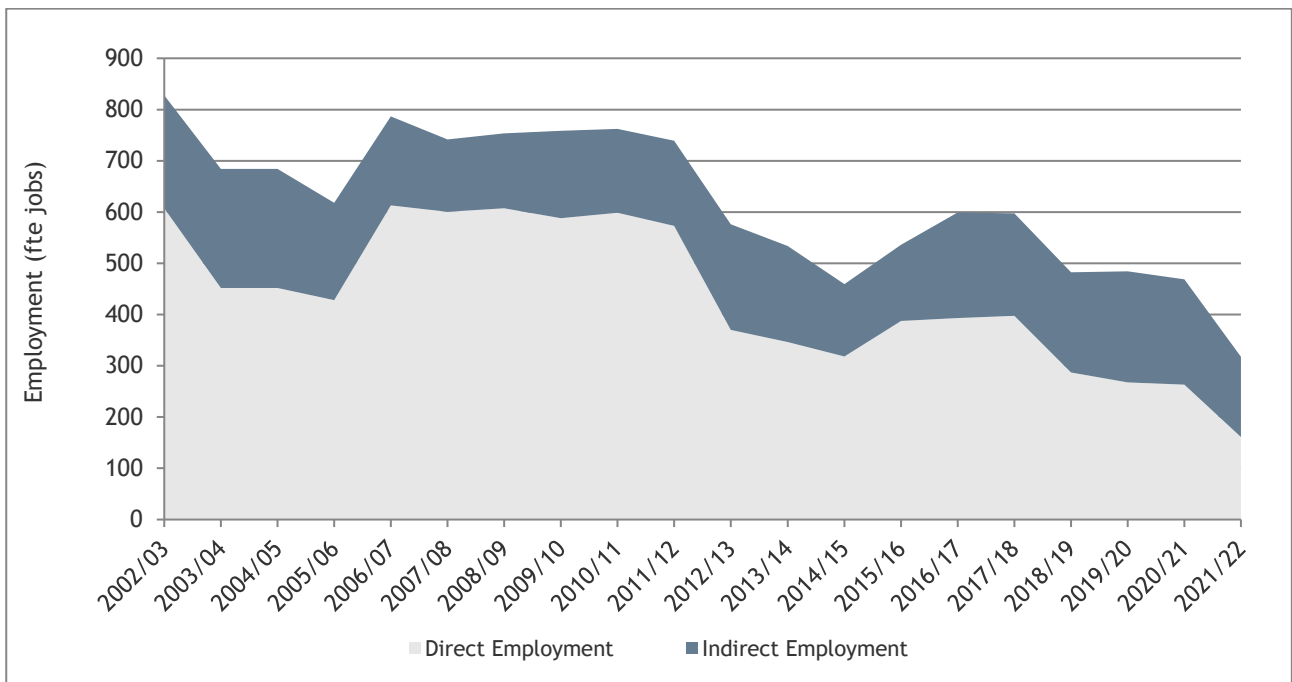
Figure 6-12 Total GSP, output and household income contribution of the MSF in the SA economy, 2002/03 to 2021/22 ^a



^a The bias correction method used to calculate these indicators has been revised, affecting the historical values, see Appendix 1.

Source: Table 3-11

Figure 6-13 Total direct and indirect employment contribution of the MSF on the SA economy, 2002/03 to 2021/22^a



^a The bias correction method used to calculate these indicators has been revised, affecting the historical values, see Appendix 1.

Source: Table 3-11

6.5. Net Economic Return

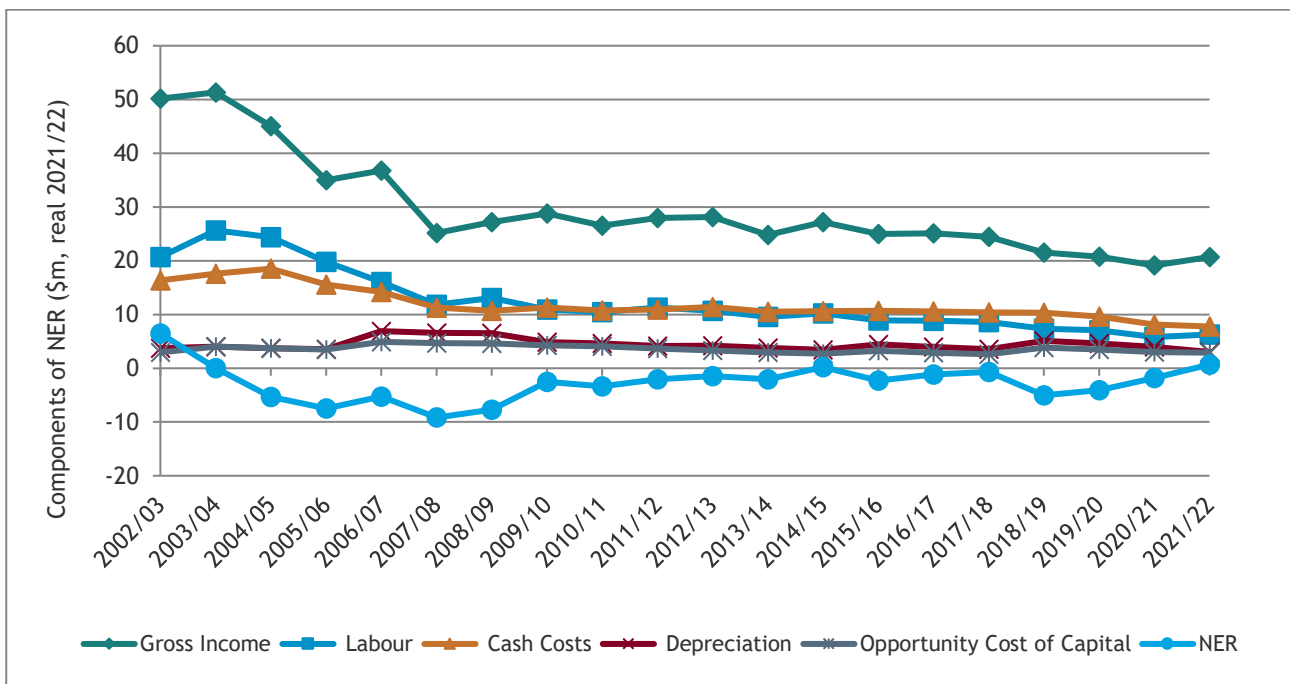
Net economic return (NER) is the return from a fishery after all costs have been met. It is equal to fishing revenue less fishing costs (cost of labour, capital including depreciation, materials and an allowance for “normal” profit). NER is maximised when economic efficiency is maximised. Estimates of the NER generated in the MSF are summarised in Figure 6-14 for the period 2002/03 to 2021/22.

The NER fluctuated between years but improved in recent years. In 2021/22 it was positive at \$0.7 million. Under the assumptions of lower opportunity cost for capital and labour (described in Section 3.6), NER would have been significantly more positive at \$3.7 million in 2021/22 and would have followed the same trend as standard NER between 2002/03 and 2021/22.

NER expressed as a percentage of GVP is a useful indicator for analysing a fishery over time and for comparing different fisheries. This indicator is illustrated in Figure 6-15 and shows a decline between 2002/03 (13 per cent) and 2007/08 (-36 per cent) and an increase since (3 per cent in 2021/22).

NER represents a return to the aggregate value of licences in the fishery. The aggregate value of licences in the MSF and the return to the aggregate value of licences in the fishery are illustrated in Figure 6-16. The return to the aggregate value of licences in the fishery has fluctuated between years, it was 7 per cent in 2002/03, and it declined to -9 per cent in 2018/19, before improving to 1 per cent in 2021/22 (Figure 6-16). Under the alternative assumptions of lower opportunity costs of capital and labour (Section 3.6), return to the aggregate value of licences in 2021/22 would be 3 per cent.

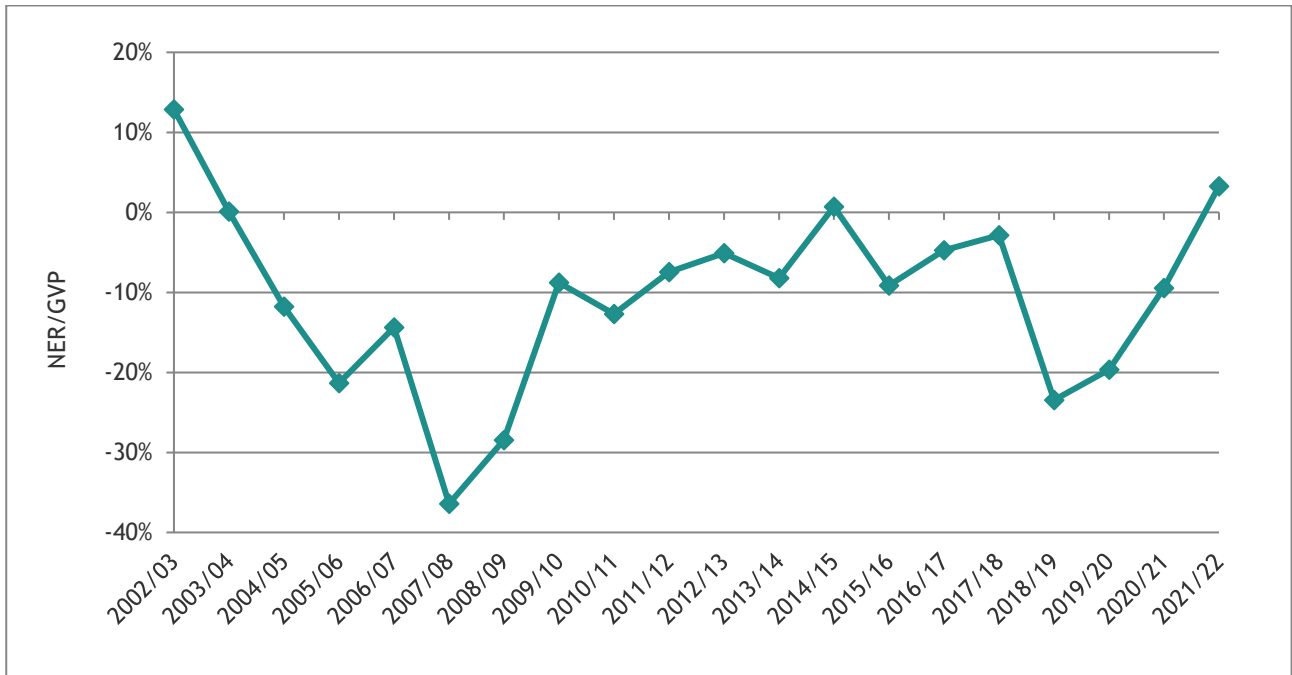
Figure 6-14 NER in the MSF, 2002/03 to 2021/22^a



^a All indicators are expressed in real 2021/22 dollars. The bias correction method used to calculate these indicators has been revised, affecting the historical values, see Appendix 1.

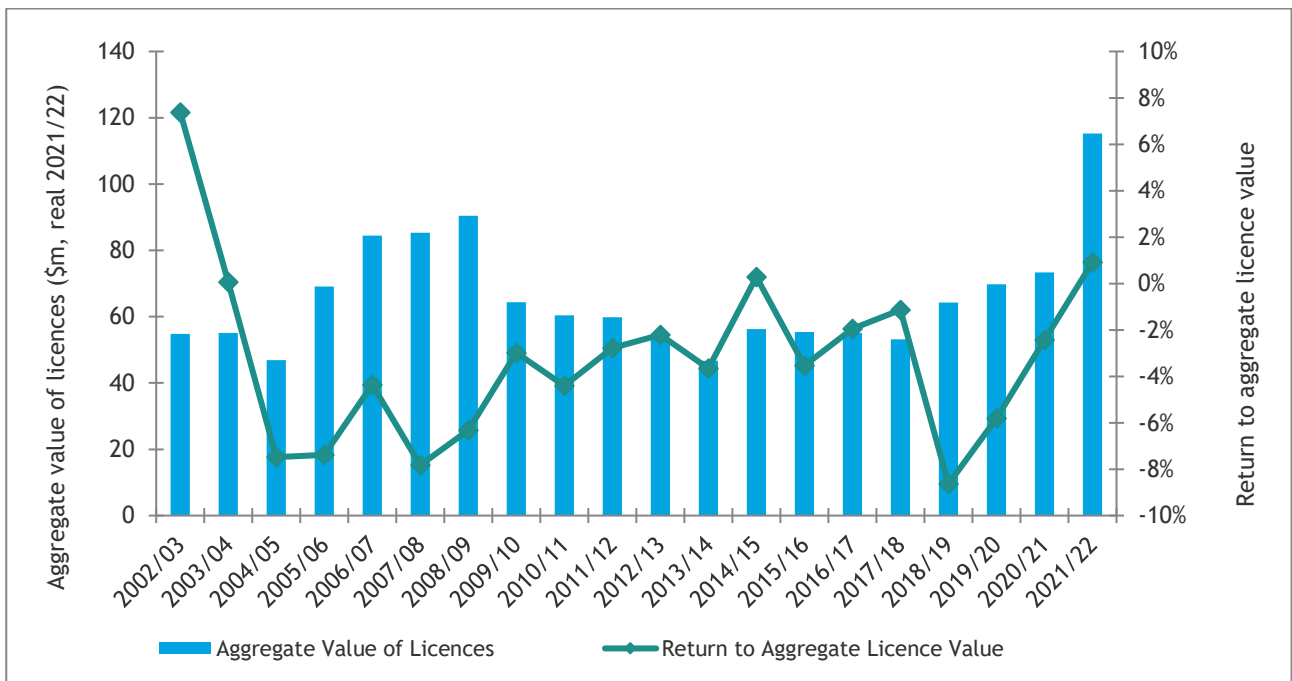
Source: Table 3-13

Figure 6-15 NER as a proportion of GVP in the SA MSF, 2002/03 to 2021/22



^a The bias correction method used to calculate these indicators has been revised, affecting the historical values, see Appendix 1. Source: Table 3-13

Figure 6-16 Aggregate value of licences and return to aggregate licence value in the MSF, 2002/03 to 2021/22 ^a



^a The value of licences represents licence holders' estimates of the value of their fishing licence and quota derived from survey responses. Estimates were based on different survey samples and techniques. Some of the difference between years is attributable to sampling variability. The bias correction method used to calculate these indicators has been revised, affecting the historical values, see Appendix 1.

Source: Table 3-13 and Appendix Table 4-1 to Appendix Table 4-6

REFERENCES

- Australian Bureau of Statistics (ABS) 2022, *Consumer Price Index, Australia*, Cat. No. 6401.0.
- Barclay, K. 2020, *Economic analysis & Social and Economic monitoring following the NSW Commercial Fisheries Business Adjustment Program*, report prepared for the NSW Department of Primary Industries, Faculty of Arts and Social Sciences, University of Technology Sydney.
- Department of Agriculture, Fisheries and Forestry (DAFF) 2023, *AGSURF data*, accessed via <https://apps.agriculture.gov.au/agsurf/agsurf.asp> on 19/05/2023.
- BDO EconSearch 2022a, *Economic Indicators for the South Australian Marine Scalefish Fishery 2020/21*, report prepared for the Department of Primary Industries and Regions, June (and previous editions).
- BDO EconSearch 2022b, *Economic Indicators for the Commercial Fisheries of South Australia, Summary Report, 2020/21*, report prepared for the Department of Primary Industries and Regions, June (and previous editions).
- BDO EconSearch 2022c, *Input-Output Tables for South Australia and its Regions 2019/20 Update: Technical Report*, report prepared for Department of the Premier and Cabinet, February.
- Commercial Marine Scalefish Fishery Reform Advisory Committee (CMSFRAC) 2019, *Industry Consultation Paper*, a report prepared for Government of South Australia.
- Fowler, A.J. Steer, M.A. McGarvey R. and Smart, J. 2019, *Snapper (Chrysophrys auratus) Fishery, Fishery Assessment Report to PIRSA Fisheries and Aquaculture*, SARDI Publication No. F2019/000331-1, SARDI Research Report Series No. 1031, September.
- Fowler, A.J. Smart, J. McGarvey R. Feenstra, J. Bailleul, F. Buss, J.J. Drew, M. Matthews, D. Matthews, J. and Rogers, T. 2020, *Snapper (Chrysophrys auratus) Fishery, Fishery Assessment Report to PIRSA Fisheries and Aquaculture*, SARDI Publication No. F2007/000523-6, SARDI Research Report Series No.
- Nurse-Bray, M., Bicknell, N., Sullivan, A., Magnusson, A., Morison, J., and Magnusson, M. 2017 *Isolating social and economic objectives within multiple stakeholder fisheries: a case study of the South Australian Marine Scale fish Fishery (MSF)*, FRDC, Adelaide, South Australia, April CC BY 3.0
- PIRSA Fisheries and Aquaculture 2013, *Management Plan for the South Australian Commercial Marine Scalefish Fishery*, The South Australian Fisheries Management Series Paper number 59: Management Plan for the South Australian Commercial Marine Scalefish Fishery.
- PIRSA 2021, *Marine Scalefish Fishery reform: Stage 3 Information*, July.
- PIRSA 2023, *Fishing Closures*, https://www.pir.sa.gov.au/recreational_fishing/rules/fishing_closures, accessed 18/04/23.
- PIRSA Fisheries and Aquaculture n.d., *Notice of intention to prepare a Management Plan for the South Australian Commercial Marine Scalefish Fishery*, accessed via https://www.pir.sa.gov.au/_data/assets/pdf_file/0008/431558/ntf-msf-intention-develop-management-plan.pdf on 10/05/2023.
- Schirmer, J. Yabsley, B. and Clayton, H. 2017, *Commercial Fisheries Business Adjustment Program Social and Economic Impact Monitoring Framework*, July.

- Smart, J.J. Earl, J. McGarvey, R. Feenstra, J. Drew, M.J. Bailleul, F. Fowler, A.J. Matthews, D. Chaplin, G. Matthews, J.M. Freeling, B. Rogers, T.A. Beckmann, C.L. and Tsolos, A. 2020, *Assessment of the South Australian Marine Scalefish Fishery in 2020*, Report to PIRSA Fisheries and Aquaculture, SARDI, Adelaide.
- Steer, M.A. Fowler, A.J. McGarvey, R. Feenstra, J. Westlake, E.L. Matthews, D. Drew, M. Rogers, P.J. and Earl, J. 2018, *Assessment of the South Australian Marine Scalefish Fishery in 2017*, SARDI Publication No. F2017/000427-2, SARDI Research Report Series No. 1002, January.
- Triantafillos L, Brooks KA, Schirmer J Pascoe S, Cannard T, Dichmont C, Thebaud O and Jebreen E 2014 *Developing and testing social objectives for fisheries management*. FRDC Report - Project 2010/040. Primary Industries and Regions, South Australia, Adelaide, March. CC BY 3.0

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 Revision to Selected Indicators

The historical time series for net economic return and economic contribution indicators have been revised in this report. This was due to a change to the method used to compensate for survey bias for these indicators as the method used historically is no longer appropriate in context of the large number of active licences being removed from the fishery between 2020/21 and 2021/22.

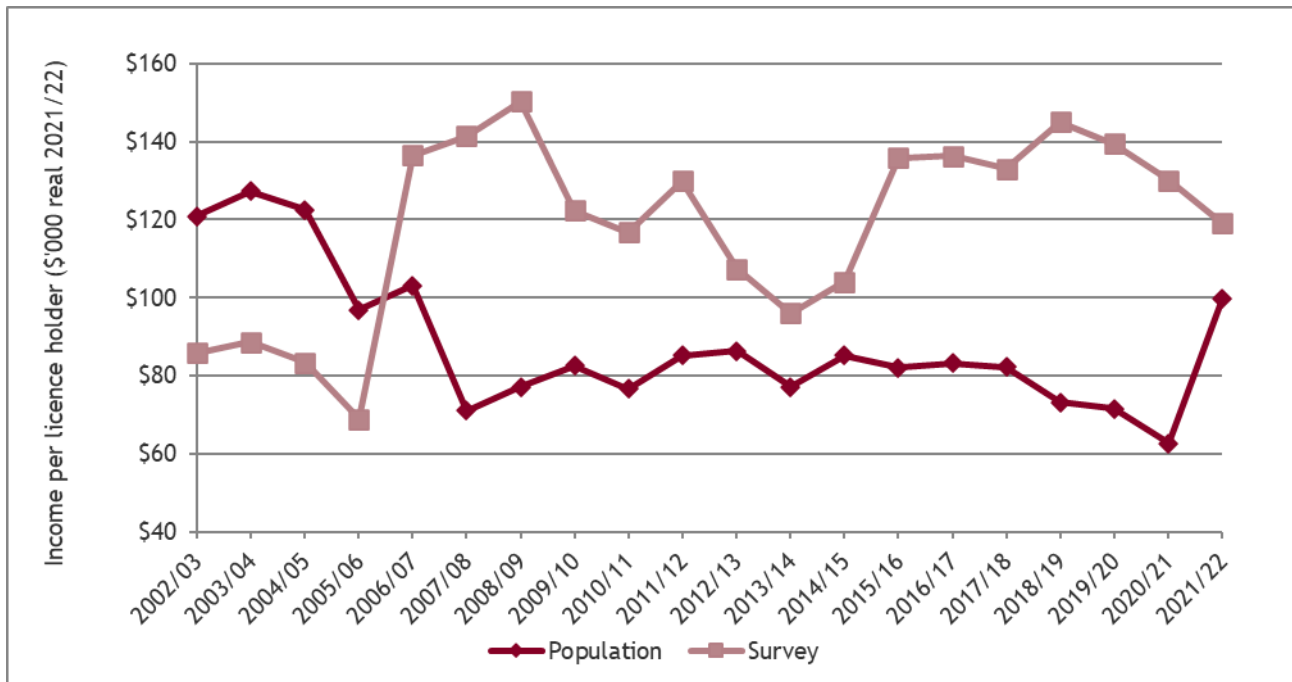
Sample bias can arise when the businesses that respond in a survey differ systematically from the overall population, leading to unrepresentative results. Several factors can contribute to sample bias, including the sampling method used, the heterogeneity of the population, nonresponse bias, survey design and question wording, and other external factors such as topical issues when the survey occurred.

When conducting surveys in the context of the MSF, all of these factors can potentially introduce bias. For instance, accepting any willing respondent may result in a bias towards more profitable or larger businesses, as these businesses have tended to be more responsive in surveys.

Bias has been expected, and compensated for, in each year of reporting fishery level indicators for the MSF such as net economic return and economic contribution. Appendix Figure 1-1 demonstrates this bias in terms of average income per active licence, comparing the average income obtained from the survey sample to the average income of the population calculated by dividing fishery GVP by the active number of businesses that year.

The analysis reveals that there is likely to have been sample bias, particularly in the surveys conducted in 2020 and 2017, where the average income of the survey sample significantly exceeded that of the population. However, the latest survey conducted in 2023 has shown a reduction in this bias, leading to a more representative sample.

Appendix Figure 1-1 MSF average income per licence, sample and population, 2002/03 to 2021/22



Source: Figure 3-5 and Figure 6-6

This is evidence that the historical surveys included higher income businesses and that the businesses that exited the MSF between 2020/21 and 2021/22 were lower income businesses (that likely did not respond to surveys in high numbers historically).

Historically, estimates of population level capital values and fixed costs were calculated using the difference between average income per surveyed business and average income per business as implied by dividing fishery GVP by the active number of businesses that year. These estimates are important for calculating fishery level indicators such as net economic return and economic contribution. This method was appropriate while the decrease in active licences in the MSF was gradual, however it is not sensitive to a sharp change in the number of active licences and is therefore not appropriate for calculating the change in these indicators between 2020/21 and 2021/22.

To mitigate the bias for the MSF when estimating these indicators, a more nuanced approach has been employed and historical values re-estimated. This approach includes the use of weightings and scaling factors. Specifically:

1. Gross Value of Production (GVP) has been utilised to scale up average income and variable costs. This ensures that the estimated values for these indicators are more representative of the entire fishery population and its activity.
2. The number of active licenses has been employed to scale up fixed costs and capital values. This scaling factor takes into account the characteristics of the entire population associated with the number of businesses and helps to provide more accurate estimates.

Additionally, adjustments have been made to account for non-responding businesses typically being smaller than responding businesses (as argued above). These adjustments assume that the non-responding businesses have characteristics similar to the average of the smaller half of the survey sample, in terms of capital values and fixed costs. Making these adjustments avoids overestimating the reduction in fixed costs and capital values that would occur by assuming that each active licence removed from the fishery between 2020/21 and 2021/22 had similar capital and fixed costs to the average of the sample, which would have overstated the increase in net economic return and the decrease in economic contribution.

APPENDIX 2 Economic Contribution of the SA Marine Scalefish Fishery, 2020/21

Appendix Table 2-1 Economic contribution of the MSF on the SA economy, 2020/21

Sector	Output		Employment ^a		Household Income		Contribution to GSP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	18.0	26.0%	211	45.0%	5.5	23.5%	10.6	27.1%
Processing	1.8	2.6%	2	0.4%	0.3	1.2%	0.6	1.5%
Transport	0.2	0.3%	1	0.2%	0.1	0.4%	0.1	0.3%
Retail	1.9	2.7%	15	3.2%	0.8	3.6%	1.1	2.8%
Food services	1.5	2.2%	15	3.3%	0.6	2.6%	0.8	2.2%
Capital expenditure ^b	3.0	4.3%	19	4.1%	1.1	4.6%	1.4	3.5%
Total Direct ^c	26.4	38.1%	264	56.2%	8.3	35.8%	14.6	37.3%
Flow-on effects								
Trade	4.7	6.8%	30	6.5%	1.9	8.1%	2.7	7.0%
Manufacturing	4.6	6.7%	13	2.7%	0.8	3.7%	1.4	3.5%
Business Services	6.2	8.9%	40	8.4%	3.0	12.8%	3.4	8.7%
Transport	2.4	3.4%	9	2.0%	0.7	2.9%	1.0	2.6%
Other Sectors	25.0	36.1%	113	24.1%	8.5	36.7%	16.0	40.9%
Total Flow-on ^c	42.9	61.9%	205	43.8%	14.9	64.2%	24.5	62.7%
Total ^c	69.2	100.0%	469	100.0%	23.2	100.0%	39.1	100.0%
Total/Direct	2.6	-	1.8	-	2.8	-	2.7	-
Total/Tonne	\$40,900	-	0.277	-	\$13,700	-	\$23,100	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 180 full-time jobs and 146 part-time jobs, that is, 326 jobs in aggregate, which was estimated to be equal to 211 fte jobs.

^b Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

^c Totals may not sum due to rounding.

Source: BDO EconSearch analysis

Appendix Table 2-2 Economic contribution of the MSF on the West Coast fishing region, 2020/21

Sector	Output		Employment ^a		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	2.5	46.1%	18	54.4%	0.7	41.6%	1.6	50.3%
Processing	0.2	3.4%	0	0.5%	0.0	1.1%	0.0	1.4%
Transport	0.0	0.8%	0	0.4%	0.0	0.7%	0.0	0.4%
Retail	0.2	3.5%	2	5.3%	0.1	5.4%	0.1	3.7%
Food services	0.2	2.9%	1	4.0%	0.1	3.6%	0.1	2.6%
^b Capital expenditure	0.2	3.1%	2	5.1%	0.1	4.7%	0.1	2.8%
<i>Total Direct</i> ^c	3.2	59.8%	23	69.8%	0.9	57.1%	2.0	61.1%
Flow-on effects								
Trade	0.3	5.4%	2	6.3%	0.1	8.1%	0.2	5.4%
Manufacturing	0.1	2.0%	0	1.1%	0.0	1.3%	0.0	1.0%
Business Services	0.3	5.2%	2	4.7%	0.1	7.9%	0.1	4.5%
Transport	0.2	3.4%	1	1.9%	0.1	3.2%	0.1	2.7%
Other Sectors	1.3	24.2%	5	16.2%	0.4	22.4%	0.8	25.3%
<i>Total Flow-on</i> ^c	2.1	40.2%	10	30.2%	0.7	42.9%	1.3	38.9%
Total ^c	5.3	100.0%	33	100.0%	1.6	100.0%	3.2	100.0%
Total/Direct	1.7	-	1.4	-	1.8	-	1.6	-
Total/Tonne	\$27,400	-	0.171	-	\$8,400	-	\$16,600	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 15 full-time jobs and 12 part-time jobs, that is, 28 jobs in aggregate, which was estimated to be equal to 18 fte jobs.

^b Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

^c Totals may not sum due to rounding.

Source: BDO EconSearch analysis

Appendix Table 2-3 Economic contributions of the MSF on the Spencer Gulf/Coffin Bay fishing region, 2020/21

Sector	Output		Employment ^a		Household Income		Contribution to GRP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	10.0	35.8%	90	49.1%	5.1	46.0%	3.3	24.8%
Processing	0.9	3.2%	1	0.5%	0.1	0.8%	0.2	1.6%
Transport	0.2	0.7%	1	0.3%	0.1	0.5%	0.1	0.5%
Retail	0.9	3.4%	9	4.8%	0.4	4.0%	0.6	4.4%
Food services	0.8	2.7%	7	3.6%	0.3	2.7%	0.4	3.1%
Capital expenditure ^b	0.8	2.9%	8	4.6%	0.4	3.4%	0.5	3.4%
Total Direct ^c	13.6	48.7%	115	62.9%	6.4	57.4%	5.1	37.8%
Flow-on effects								
Trade	2.1	7.6%	15	8.3%	1.0	8.7%	1.3	9.5%
Manufacturing	0.7	2.5%	2	1.3%	0.1	1.3%	0.2	1.5%
Business Services	1.6	5.9%	9	5.1%	0.7	6.7%	0.9	6.4%
Transport	1.2	4.4%	4	2.4%	0.4	3.3%	0.6	4.4%
Other Sectors	8.6	30.9%	36	19.9%	2.5	22.5%	5.4	40.4%
Total Flow-on ^c	14.3	51.3%	68	37.1%	4.7	42.6%	8.4	62.2%
Total ^c	27.9	100.0%	182	100.0%	11.1	100.0%	13.4	100.0%
Total/Direct	2.1	-	1.6	-	1.7	-	2.6	-
Total/Tonne	\$28,900	-	0.00	-	\$11,500	-	\$13,900	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 76 full-time jobs and 62 part-time jobs, that is, 138 jobs in aggregate, which was estimated to be equal to 90 fte jobs.

^b Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

^c Totals may not sum due to rounding.

Source: BDO EconSearch analysis

Appendix Table 2-4 Economic contribution of the MSF on the Gulf St Vincent/Kangaroo Island fishing region, 2020/21

Sector	Output		Employment ^a		Household Income		Contribution to GSP	
	(\$m)	%	(fte jobs)	%	(\$m)	%	(\$m)	%
Direct effects								
Fishing	5.8	37.0%	53	47.8%	2.9	44.8%	2.2	28.0%
Processing	0.5	3.2%	1	0.5%	0.1	1.6%	0.1	1.5%
Transport	0.1	0.6%	0	0.3%	0.0	0.4%	0.0	0.4%
Retail	0.5	3.3%	5	4.5%	0.3	4.0%	0.3	4.2%
Food services	0.4	2.7%	4	3.5%	0.2	2.7%	0.2	2.9%
^b Capital expenditure	0.4	2.4%	6	5.1%	0.2	2.7%	0.2	2.6%
<i>Total Direct</i> ^c	7.7	49.3%	69	61.6%	3.6	56.2%	3.1	39.6%
Flow-on effects								
Trade	0.9	6.0%	7	6.5%	0.5	7.2%	0.6	7.3%
Manufacturing	0.5	2.9%	2	1.6%	0.1	1.6%	0.1	1.8%
Business Services	1.0	6.3%	7	6.7%	0.4	7.0%	0.5	6.6%
Transport	0.3	2.1%	1	1.3%	0.1	1.9%	0.2	2.0%
Other Sectors	5.2	33.3%	25	22.3%	1.7	26.1%	3.4	42.8%
<i>Total Flow-on</i> ^c	8.0	50.7%	43	38.4%	2.8	43.8%	4.8	60.4%
Total ^c	15.7	100.0%	112	100.0%	6.4	100.0%	7.9	100.0%
Total/Direct	2.0	-	1.6	-	1.8	-	2.5	-
Total/Tonne	\$35,200	-	0.250	-	\$14,400	-	\$17,600	-

^a Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 46 full-time jobs and 37 part-time jobs, that is, 82 jobs in aggregate, which was estimated to be equal to 53 fte jobs.

^b Capital expenditure includes expenditure on boats, fishing gear and equipment, sheds and buildings, motor vehicles and other equipment.

^c Totals may not sum due to rounding.

Source: BDO EconSearch analysis

APPENDIX 3 Summary Economic Indicators for SA Commercial Fisheries

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

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

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

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

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

^d Excludes retained by-catch of Octopus, Southern Calamari and Bugs (39t of Octopus, 21t of Southern Calamari and 3t of Bugs in 2020/21) from the Rock Lobster and Prawn Fisheries. Excludes catch from Charter Boat Fishery, aquaculture and south east non-trawl and deep water trawl Commonwealth Fisheries.

Source: BDO EconSearch (2022b)

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

Year	Abalone	GSV Prawns ^a	SGWC Prawns ^a	Sth'n Zone Rock Lobster ^a	Nth'n Zone Rock Lobster ^a	Blue Crabs	Lakes and Coorong ^b	Sardines	Marine Scalefish	Misc ^c	Charter Boat	Total SA Fisheries ^d
2001/02	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

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

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

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

^d Excludes retained by-catch of Octopus, Southern Calamari and Bugs (\$444,000 of Octopus, \$542,000 of Southern Calamari and \$46,000 of Bugs in 2019/20) 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 2018/19 dollars.

Source: BDO EconSearch (2022b)

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

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

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

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

^c Excludes West Coast Prawn Fishery.

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

Source: BDO EconSearch (2022b)

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

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

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

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

Source: BDO EconSearch (2022b)

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

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

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

Source: Derived from BDO EconSearch (2022b)

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

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

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

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

Source: BDO EconSearch (2022b)

Appendix Table 3-7 Net economic return (NER) in SA commercial fisheries, 2020/21 (\$m)

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

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

Source: BDO EconSearch (2022b)

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

Appendix Table 4-1 Financial performance in the MSF, 2002/03 to 2004/05 (average per licence)^a

	2002/03		2003/04		2004/05	
	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b
(1) Total Boat Gross Income	\$50,332		\$57,280		\$57,552	
Variable Costs						
Fuel	\$5,668	12%	\$6,135	11%	\$6,944	11%
Repairs & Maintenance ^c	\$4,482	10%	\$5,822	10%	\$6,421	10%
Bait/Ice	\$1,752	4%	\$1,241	2%	\$2,435	4%
Provisions	\$1,200	3%	-	-	-	-
Labour - paid	\$6,923	15%	\$7,128	12%	\$7,412	12%
(2) Labour - unpaid ^d	\$14,826	33%	\$19,722	34%	\$20,509	33%
Other variable costs	\$841	2%	-	-	-	-
(3) Total Variable Costs	\$35,691	79%	\$40,048	70%	\$43,722	70%
Fixed Costs						
Licence Fee ^e	\$3,095	7%	\$4,092	7%	\$4,709	8%
Insurance	\$1,896	4%	\$1,781	3%	\$1,823	3%
(4) Interest	\$250	1%	\$256	0%	\$263	0%
(5) Labour - unpaid ^d	\$1,056	2%	\$3,732	6%	\$3,863	6%
(6) Leasing	-	-	-	-	-	-
Legal & Accounting	\$588	1%	\$1,147	2%	\$1,174	2%
Telephone etc.	\$665	1%	\$1,031	2%	\$1,055	2%
Slipping & Mooring	\$333	1%	\$79	0%	\$81	0%
Travel	\$166	0%	\$2,406	4%	\$2,461	4%
Office & Admin	\$1,684	4%	\$2,947	5%	\$3,016	5%
(7) Total Fixed Costs	\$9,733	21%	\$17,472	30%	\$18,443	30%
(8) Total Boat Cash Costs (3+7)	\$45,424	100%	\$57,520	100%	\$62,164	100%
Boat Gross Margin (1-3)	\$14,641		\$17,232		\$13,831	
(9) Total Unpaid Labour (2+5)	\$15,882		\$23,455		\$24,372	
Gross Operating Surplus (1-8+9)	\$20,790		\$23,216		\$19,761	
(10) Boat Cash Income (1-8)	\$4,908		-\$239		-\$4,612	
(11) Depreciation	\$8,235		\$8,652		\$8,852	
(12) Boat Business Profit (10-11)	-\$3,327		-\$8,891		-\$13,464	
(13) Profit at Full Equity (12+4+6)	-\$3,077		-\$8,635		-\$13,202	
Boat Capital						
(14) Fishing Gear & Equip	\$65,877		\$86,235		\$88,229	
Licence Value	\$86,663		\$98,627		\$90,488	
Quota Value	-		-		-	
(15) Total Boat Capital	\$152,540		\$184,862		\$178,718	
Rate of Return on Fishing Gear & Equip (13/14*100)	-4.7%		-10.0%		-15.0%	
Rate of Return on Total Boat Capital (13/15*100)	-2.0%		-4.7%		-7.4%	

^a Estimates of financial performance for 2002/03 were based on the 2002 licence holder survey and those for 2003/04 and 204/05 were based on the 2004 licence holder survey. All figures are presented in nominal terms.

^b Total boat cash costs.

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

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

Source: BDO EconSearch (2022a)

Appendix Table 4-2 Financial performance in the MSF, 2005/06 to 2007/08 (average per licence)^a

	2005/06		2006/07		2007/08	
	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b
(1) Total Boat Gross Income	\$47,143		\$95,080		\$103,104	
Variable Costs						
Fuel	\$6,237	11%	\$11,172	13%	\$11,662	13%
Repairs & Maintenance ^c	\$5,619	10%	\$8,681	10%	\$9,061	10%
Bait/Ice	\$2,052	4%	\$2,266	3%	\$2,840	3%
Provisions	-	-	\$689	1%	\$717	1%
Labour - paid	\$6,552	11%	\$12,169	14%	\$13,642	15%
(2) Labour - unpaid ^d	\$18,129	32%	\$25,061	30%	\$28,093	30%
Other variable costs	-	-	-	-	-	-
(3) Total Variable Costs	\$38,589	68%	\$60,039	71%	\$66,015	71%
Fixed Costs						
Licence Fee ^e	\$4,285	8%	\$5,012	6%	\$5,251	6%
Insurance	\$1,892	3%	\$1,864	2%	\$1,949	2%
(4) Interest	\$266	0%	\$4,518	5%	\$5,083	6%
(5) Labour - unpaid ^d	\$4,009	7%	\$4,743	6%	\$4,926	5%
(6) Leasing	-	-	-	-	-	-
Legal & Accounting	\$1,219	2%	\$1,243	1%	\$1,299	1%
Telephone etc.	\$1,095	2%	\$1,329	2%	\$1,389	2%
Slipping & Mooring	\$84	0%	\$807	1%	\$844	1%
Travel	\$2,555	4%	\$513	1%	\$536	1%
Office & Admin	\$3,131	5%	\$4,849	6%	\$5,070	5%
(7) Total Fixed Costs	\$18,535	32%	\$24,878	29%	\$26,348	29%
(8) Total Boat Cash Costs (3+7)	\$57,124	100%	\$84,916	100%	\$92,363	100%
Boat Gross Margin (1-3)	\$8,554		\$35,041		\$37,090	
(9) Total Unpaid Labour (2+5)	\$22,138		\$29,804		\$33,019	
Gross Operating Surplus (1-8+9)	\$12,157		\$39,967		\$43,761	
(10) Boat Cash Income (1-8)	-\$9,981		\$10,163		\$10,742	
(11) Depreciation	\$8,814		\$18,286		\$18,318	
(12) Boat Business Profit (10-11)	-\$18,795		-\$8,122		-\$7,577	
(13) Profit at Full Equity (12+4+6)	-\$18,529		-\$3,605		-\$2,494	
Boat Capital						
(14) Fishing Gear & Equip	\$87,851		\$130,077		\$130,309	
Licence Value	\$146,565		\$184,227		\$198,097	
Quota Value	-		-		-	
(15) Total Boat Capital	\$234,415		\$314,305		\$328,406	
Rate of Return on Fishing Gear & Equip (13/14*100)	-21.1%		-2.8%		-1.9%	
Rate of Return on Total Boat Capital (13/15*100)	-7.9%		-1.1%		-0.8%	

^a Estimates of financial performance for 2005/06 were based on the 2004 licence holder survey and those estimates for 2006/07 and 2007/08 were based on the 2007 licence holder survey. All figures are presented in nominal terms.

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

Source: BDO EconSearch (2022a)

Appendix Table 4-3 Financial performance in the MSF, 2008/09 to 2010/11 (average per licence)^a

	2008/09		2009/10		2010/11	
	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b
(1) Total Boat Gross Income	\$111,171		\$93,080		\$92,278	
Variable Costs						
Fuel	\$11,472	12%	\$8,921	12%	\$8,893	11%
Repairs & Maintenance ^c	\$8,914	9%	\$6,936	9%	\$6,915	9%
Bait/Ice	\$1,278	1%	\$1,915	3%	\$1,564	2%
Provisions	\$725	1%	\$721	1%	\$733	1%
Labour - paid	\$15,288	16%	\$10,995	14%	\$11,282	15%
(2) Labour - unpaid ^d	\$31,483	33%	\$21,470	28%	\$22,030	28%
Other variable costs	-	-	-	-	-	-
(3) Total Variable Costs	\$69,159	73%	\$50,959	67%	\$51,417	66%
Fixed Costs						
Licence Fee ^e	\$4,988	5%	\$6,097	8%	\$6,396	8%
Insurance	\$1,981	2%	\$1,890	2%	\$1,963	3%
(4) Interest	\$4,826	5%	\$3,717	5%	\$3,836	5%
(5) Labour - unpaid ^d	\$5,120	5%	\$2,981	4%	\$3,085	4%
(6) Leasing	-	-	-	-	-	-
Legal & Accounting	\$1,320	1%	\$1,087	1%	\$1,130	1%
Telephone etc.	\$1,412	1%	\$977	1%	\$1,015	1%
Slipping & Mooring	\$857	1%	\$479	1%	\$497	1%
Travel	\$545	1%	\$479	1%	\$498	1%
Office & Admin	\$5,152	5%	\$7,627	10%	\$7,924	10%
(7) Total Fixed Costs	\$26,201	27%	\$25,334	33%	\$26,344	34%
(8) Total Boat Cash Costs (3+7)	\$95,360	100%	\$76,292	100%	\$77,761	100%
Boat Gross Margin (1-3)	\$42,012		\$42,122		\$40,862	
(9) Total Unpaid Labour (2+5)	\$36,603		\$24,450		\$25,115	
Gross Operating Surplus (1-8+9)	\$52,414		\$41,238		\$39,633	
(10) Boat Cash Income (1-8)	\$15,810		\$16,788		\$14,518	
(11) Depreciation	\$18,490		\$14,613		\$14,569	
(12) Boat Business Profit (10-11)	-\$2,679		\$2,175		-\$51	
(13) Profit at Full Equity (12+4+6)	\$2,147		\$5,892		\$3,785	
Boat Capital						
(14) Fishing Gear & Equip	\$131,527		\$128,779		\$128,390	
Licence Value	\$212,388		\$156,912		\$154,223	
Quota Value	-		-		-	
(15) Total Boat Capital	\$343,915		\$285,692		\$282,613	
Rate of Return on Fishing Gear & Equip (13/14*100)	1.6%		4.6%		2.9%	
Rate of Return on Total Boat Capital (13/15*100)	0.6%		2.1%		1.3%	

^a Estimates of financial performance for 2008/09 were based on the 2007 licence holder survey and those estimates for 2009/10 and 2010/11 were based on the 2011 licence holder survey. All figures are presented in nominal terms.

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

Source: BDO EconSearch (2022a)

Appendix Table 4-4 Financial performance in the MSF, 2011/12 to 2013/14 (average per licence)^a

	2011/12		2012/13		2013/14	
	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b
(1) Total Boat Gross Income	\$103,875		\$87,717		\$80,841	
Variable Costs						
Fuel	\$10,034	12%	\$11,023	15%	\$10,254	14%
Repairs & Maintenance ^c	\$7,802	9%	\$6,311	8%	\$5,841	8%
Bait/Ice	\$1,862	2%	\$2,533	3%	\$2,345	3%
Provisions	\$801	1%	\$552	1%	\$511	1%
Labour - paid	\$13,130	15%	\$8,720	11%	\$8,082	11%
(2) Labour - unpaid ^d	\$25,638	30%	\$21,089	28%	\$19,544	27%
Other variable costs	-	-	\$492	1%	\$507	1%
(3) Total Variable Costs	\$59,267	69%	\$50,720	67%	\$47,083	65%
Fixed Costs						
Licence Fee ^e	\$6,709	8%	\$6,027	8%	\$6,269	9%
Insurance	\$1,986	2%	\$2,035	3%	\$2,099	3%
(4) Interest	\$3,528	4%	\$3,267	4%	\$3,182	4%
(5) Labour - unpaid ^d	\$3,189	4%	\$4,019	5%	\$4,150	6%
(6) Leasing	-	-	\$732	1%	\$675	1%
Legal & Accounting	\$1,143	1%	\$1,296	2%	\$1,337	2%
Telephone etc.	\$1,027	1%	\$1,209	2%	\$1,247	2%
Slipping & Mooring	\$503	1%	\$648	1%	\$668	1%
Travel	\$504	1%	\$306	0%	\$315	0%
Office & Admin	\$8,015	9%	\$5,661	7%	\$5,838	8%
(7) Total Fixed Costs	\$26,604	31%	\$25,199	33%	\$25,778	35%
(8) Total Boat Cash Costs (3+7)	\$85,871	100%	\$75,919	100%	\$72,861	100%
Boat Gross Margin (1-3)	\$44,608		\$36,997		\$33,758	
(9) Total Unpaid Labour (2+5)	\$28,827		\$25,108		\$23,694	
Gross Operating Surplus (1-8+9)	\$46,831		\$36,906		\$31,673	
(10) Boat Cash Income (1-8)	\$18,004		\$11,798		\$7,980	
(11) Depreciation	\$13,949		\$14,110		\$13,628	
(12) Boat Business Profit (10-11)	\$4,055		-\$2,312		-\$5,649	
(13) Profit at Full Equity (12+4+6)	\$7,583		\$955		-\$1,792	
Boat Capital						
(14) Fishing Gear & Equip	\$122,929		\$110,624		\$106,846	
Licence Value	\$163,155		\$148,547		\$136,902	
Quota Value	-		-		-	
(15) Total Boat Capital	\$286,084		\$259,171		\$243,749	
Rate of Return on Fishing Gear & Equip (13/14*100)	6.2%		0.9%		-1.7%	
Rate of Return on Total Boat Capital (13/15*100)	2.7%		0.4%		-0.7%	

^a Estimates of financial performance for 2011/12 were based on the 2011 licence holder survey and those estimates for 2012/13 and 2013/14 were based on the 2014 licence holder survey. All figures are presented in nominal terms.

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

Source: BDO EconSearch (2022a)

Appendix Table 4-5 Financial performance in the MSF, 2014/15 to 2016/17 (average per licence)^a

	2014/15		2015/16		2016/17	
	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b
(1) Total Boat Gross Income	\$88,766		\$116,482		\$118,807	
Variable Costs						
Fuel	\$10,571	14%	\$9,903	10%	\$9,796	10%
Repairs & Maintenance ^c	\$6,246	8%	\$9,873	10%	\$9,901	10%
Bait/Ice	\$2,507	3%	\$3,104	3%	\$3,112	3%
Provisions	\$546	1%	\$1,591	2%	\$1,596	2%
Labour - paid	\$8,755	11%	\$13,133	14%	\$13,250	14%
(2) Labour - unpaid ^d	\$21,172	28%	\$22,568	24%	\$22,769	24%
Other variable costs	\$513	1%	\$2,114	2%	\$2,148	2%
(3) Total Variable Costs	\$50,311	66%	\$62,287	65%	\$62,571	65%
Fixed Costs						
Licence Fee ^e	\$6,240	8%	\$7,364	8%	\$7,566	8%
Insurance	\$2,125	3%	\$2,549	3%	\$2,589	3%
(4) Interest	\$3,011	4%	\$3,679	4%	\$3,658	4%
(5) Labour - unpaid ^d	\$4,256	6%	\$5,886	6%	\$6,015	6%
(6) Leasing	\$741	1%	\$222	0%	\$226	0%
Legal & Accounting	\$1,353	2%	\$1,470	2%	\$1,494	2%
Telephone etc.	\$1,262	2%	\$1,318	1%	\$1,338	1%
Slipping & Mooring	\$676	1%	\$967	1%	\$983	1%
Travel	\$319	0%	\$940	1%	\$955	1%
Office & Admin	\$5,910	8%	\$8,835	9%	\$8,975	9%
(7) Total Fixed Costs	\$25,893	34%	\$33,229	35%	\$33,798	35%
(8) Total Boat Cash Costs (3+7)	\$76,203	100%	\$95,516	100%	\$96,368	100%
Boat Gross Margin (1-3)	\$38,456		\$54,195		\$56,236	
(9) Total Unpaid Labour (2+5)	\$25,428		\$28,454		\$28,783	
Gross Operating Surplus (1-8+9)	\$37,991		\$49,420		\$51,222	
(10) Boat Cash Income (1-8)	\$12,563		\$20,966		\$22,439	
(11) Depreciation	\$12,981		\$18,514		\$17,172	
(12) Boat Business Profit (10-11)	-\$418		\$2,452		\$5,266	
(13) Profit at Full Equity (12+4+6)	\$3,334		\$6,353		\$9,151	
Boat Capital						
(14) Fishing Gear & Equip	\$101,770		\$135,334		\$125,529	
Licence Value	\$150,324		\$149,996		\$152,990	
Quota Value	-		-		-	
(15) Total Boat Capital	\$252,094		\$285,330		\$278,519	
Rate of Return on Fishing Gear & Equip (13/14*100)	3.3%		4.7%		7.3%	
Rate of Return on Total Boat Capital (13/15*100)	1.3%		2.2%		3.3%	

^a Estimates of financial performance for 2014/15 were based on the 2014 licence holder survey and those for 2015/16 and 2016/17 were based on the 2017 licence holders survey. All figures are presented in nominal terms.

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

Source: BDO EconSearch (2022a)

Appendix Table 4-6 Financial performance in the MSF, 2017/18 to 2018/19 (average per licence)^a

	2017/18		2018/19	
	Average per Licence	Share of TBCC ^b	Average per Licence	Share of TBCC ^b
(1) Total Boat Gross Income	\$119,065		\$131,640	
Variable Costs				
Fuel	\$9,963	10%	\$16,941	16%
Repairs & Maintenance ^c	\$9,940	10%	\$10,132	10%
Bait/Ice	\$3,125	3%	\$2,997	3%
Provisions	\$1,602	2%	\$1,218	1%
Labour - paid	\$13,226	14%	\$15,656	15%
(2) Labour - unpaid ^d	\$22,728	23%	\$22,929	22%
Other variable costs	\$2,205	2%	\$1,513	1%
(3) Total Variable Costs	\$62,788	64%	\$71,386	68%
Fixed Costs				
Licence Fee ^e	\$7,968	8%	\$7,756	7%
Insurance	\$2,658	3%	\$2,930	3%
(4) Interest	\$3,658	4%	\$5,571	5%
(5) Labour - unpaid ^d	\$6,139	6%	\$4,848	5%
(6) Leasing	\$227	0%	\$0	0%
Legal & Accounting	\$1,533	2%	\$2,213	2%
Telephone etc.	\$1,374	1%	\$1,222	1%
Slipping & Mooring	\$1,009	1%	\$1,572	1%
Travel	\$980	1%	\$573	1%
Office & Admin	\$9,213	9%	\$7,112	7%
(7) Total Fixed Costs	\$34,759	36%	\$33,798	32%
(8) Total Boat Cash Costs (3+7)	\$97,547	100%	\$105,184	100%
Boat Gross Margin (1-3)	\$56,278		\$60,254	
(9) Total Unpaid Labour (2+5)	\$28,867		\$27,778	
Gross Operating Surplus (1-8+9)	\$50,385		\$54,233	
(10) Boat Cash Income (1-8)	\$21,519		\$26,456	
(11) Depreciation	\$16,180		\$21,823	
(12) Boat Business Profit (10-11)	\$5,338		\$4,633	
(13) Profit at Full Equity (12+4+6)	\$9,223		\$10,204	
Boat Capital				
(14) Fishing Gear & Equip	\$118,278		\$164,985	
Licence Value	\$153,323		\$188,233	
Quota Value	-		-	
(15) Total Boat Capital	\$271,600		\$353,219	
Rate of Return on Fishing Gear & Equip (13/14*100)	7.8%		6.2%	
Rate of Return on Total Boat Capital (13/15*100)	3.4%		2.9%	

^a Estimates of financial performance for 2017/18 were based on the 2017 licence holders survey and those estimates for 2018/19 were based on the 2020 licence holder survey. All figures are presented in nominal terms.

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

Source: BDO EconSearch (2022a)

APPENDIX 5 Nominal Licence Fees and Rent

Appendix Table 5-1 Cost of management in the MSF, 2002/03 to 2022/23 ^a

	Licence Fee ^d	GVP	Fee/GVP	Catch	Fee/Catch	Licences ^b	Fee/Licence ^c
	(\$'000)	(\$'000)	(%)	(tonnes)	(\$/kg)	(No.)	(\$/licence)
2002/03	1,557	31,464	4.9%	4,175	\$0.37	415	\$2,936
2003/04	1,799	33,135	5.4%	4,168	\$0.43	403	\$3,468
2004/05	1,891	29,739	6.4%	3,810	\$0.50	368	\$3,991
2005/06	1,994	23,953	8.3%	3,186	\$0.63	361	\$4,285
2006/07	2,014	25,637	7.9%	2,834	\$0.71	357	\$4,090
2007/08	2,047	18,342	11.2%	2,605	\$0.79	354	\$4,285
2008/09	1,962	20,101	9.8%	2,827	\$0.69	352	\$4,071
2009/10	1,961	21,911	8.9%	3,231	\$0.61	349	\$4,097
2010/11	2,039	20,948	9.7%	2,983	\$0.68	346	\$4,297
2011/12	2,144	22,348	9.6%	3,136	\$0.68	328	\$4,770
2012/13	2,386	22,970	10.4%	2,533	\$0.94	326	\$5,354
2013/14	2,482	20,862	11.9%	2,231	\$1.11	321	\$5,700
2014/15	2,471	23,165	10.7%	2,518	\$0.98	319	\$5,977
2015/16	2,433	21,437	11.4%	2,488	\$0.98	317	\$5,951
2016/17	2,500	21,876	11.4%	2,458	\$1.02	314	\$5,586
2017/18	2,633	21,891	12.0%	2,244	\$1.17	310	\$5,950
2018/19	2,696	19,548	13.8%	2,032	\$1.33	310	\$6,087
2019/20	2,276	18,989	12.0%	2,067	\$1.10	305	\$6,236
2020/21	1,973	17,983	11.0%	1,618	\$1.22	305	\$3,711
2021/22	1,840	20,677	8.9%	1,851	\$0.99	207	\$5,068
2022/23 ^e	1,872	n.a.	-	n.a.	-	205	\$5,255

^a Values are in nominal terms.

^b Figures indicate the licence holder numbers at the start of the financial year, which may be different to the end of the financial year due mainly to amalgamation of licences.

^c Determined by allocating total licence fees (including base fees and net fees but excluding licence fees paid by Rock Lobster and Lakes and Coorong licence holders to take Marine Scalefish species) for the fishery across all MSF licence holders. For licence holders that only pay the base fee, average fees for the 2021/22 were \$2,771.50 per licence holder. For licence holders who pay the base fee and net fee, average fees for the 2021/22 were \$7,709.72 per licence holder.

^d The licence fees for 2019/20, 2020/21 and 2021/22 include a base fee reduction of \$432,000, \$899,000 and \$845,000, respectively, as a result of the Snapper recovery measures.

^e Figures for 2022/23 include a base fee reduction of \$854,000, as a result of the Snapper recovery measures.

Source: PIRSA Fisheries and SARDI Aquatic Sciences

Appendix Table 5-2 Costs of management by endorsed sector in the SA MSF, 2002/03 to 2022/23 ^a

	MSF Base	MSF Net	NZRL MSF Base	NZRL MSF Net	SZRL MSF Base	SZRL MSF Net	L&C MSF Net	Total
2002/03	981	237	71	30	174	39	24	1,557
2003/04	1,116	282	84	37	204	48	29	1,799
2004/05	1,173	296	90	40	212	52	28	1,891
2005/06	1,233	313	96	41	224	56	30	1,994
2006/07	1,280	180	119	51	283	64	37	2,014
2007/08	1,327	190	116	50	261	66	37	2,047
2008/09	1,198	235	116	46	273	61	34	1,962
2009/10	1,194	236	116	46	273	61	34	1,961
2010/11	1,242	245	121	48	284	63	35	2,039
2011/12	1,331	234	127	53	296	66	37	2,144
2012/13	1,500	246	140	58	328	73	41	2,386
2013/14	1,585	245	147	50	344	77	34	2,482
2014/15	1,650	257	152	45	357	67	36	2,564
2015/16	1,631	255	149	44	348	63	35	2,525
2016/17	1,522	232	139	39	338	61	32	2,363
2017/18	1,598	247	148	41	361	65	34	2,493
2018/19	1,634	253	151	42	370	67	35	2,552
2019/20	1,650	252	148	42	366	67	35	2,560
2020/21	1,727	268	158	45	390	71	32	2,690
2021/22	1,624	237	148	42	365	67	27	2,511
2022/23	1,641	257	151	43	368	63	28	2,550

^a Values are in nominal terms.

Source: PIRSA Fisheries and SARDI Aquatic Sciences

Appendix Table 5-3 Net economic return (NER) in the MSF, 2002/03 to 2021/22 ^a

	Gross Income	Less Labour	Less Cash Costs ^b	Less Depreciation	Less Opportunity Cost of Capital (@10%)	NER	NER (0% risk premium, 2/3 opportunity cost of labour)
2002/03	31,464	12,977	10,253	2,325	1,860	4,049	7,992
2003/04	33,135	16,561	11,351	2,597	2,588	38	5,566
2004/05	29,739	16,096	12,228	2,464	2,456	-3,504	1,837
2005/06	23,953	13,557	10,682	2,415	2,407	-5,107	-417
2006/07	25,637	11,180	9,908	4,811	3,422	-3,684	674
2007/08	18,342	8,605	8,227	4,785	3,404	-6,680	-2,948
2008/09	20,101	9,675	7,917	4,807	3,419	-5,717	-1,733
2009/10	21,911	8,321	8,600	3,675	3,238	-1,923	1,609
2010/11	20,948	8,260	8,505	3,636	3,205	-2,658	844
2011/12	22,348	9,032	8,722	3,325	2,931	-1,662	1,872
2012/13	22,970	8,706	9,323	3,427	2,687	-1,173	2,324
2013/14	20,862	8,027	8,864	3,186	2,498	-1,712	1,532
2014/15	23,165	8,702	9,069	2,933	2,300	161	3,469
2015/16	21,437	7,649	9,188	3,791	2,771	-1,962	1,168
2016/17	21,876	7,718	9,203	3,460	2,529	-1,034	1,992
2017/18	21,891	7,695	9,303	3,187	2,329	-623	2,301
2018/19	19,548	6,664	9,377	4,610	3,485	-4,589	-1,426
2019/20	18,989	6,435	8,824	4,249	3,212	-3,733	-749
2020/21	17,983	5,457	7,654	3,741	2,829	-1,699	899
2021/22	20,677	6,288	7,768	3,035	2,912	673	3,746

^a Values are in nominal terms. Estimates in all years have been revised to remove survey bias as described in Appendix 1.

^b Cash costs include costs of materials and services and exclude labour and interest costs. They also include the full cost of management including any fee waivers.

Source: PIRSA Fisheries and SARDI Aquatic Sciences



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