Economic Indicators for the SA Southern Zone Rock Lobster Fishery 2010/11

A report prepared for

Primary Industries and Regions South Australia

Prepared by

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Contents

Tables

Figures

Abbreviations

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ABS	Australian Bureau of Statistics
FRDC	Fisheries Research and Development Corporation
fob	free on board
fte	full time equivalent
GRP	gross regional product
GSP	gross state product
GVP	gross value of production
MCCN	Marine and Coastal Community Network
PIRSA	Primary Industries and Resources South Australia
RBA	Reserve Bank of Australia
R&M	repairs and maintenance
SA	South Australia
SARDI	South Australian Research and Development Institute
SEPFA	South Eastern Professional Fisherman's Association
SZRL	Southern Zone Rock Lobster
TACC	total allowable commercial catch

Acknowledgments

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Executive Summary

Catch and Gross Value of Production…

Total catch in the fishery followed an increasing trend between 1997/98 and 2003/04 but declined in subsequent years. In 2010/11 total catch (1,244 tonnes) was 26 per cent below that in 1997/98 (1,680 tonnes).

The value of catch in the Southern Zone Rock Lobster fishery has fluctuated between years but has generally followed an increasing trend since 1997/98. The total value of catch in 2010/11 ($67.0 million) was 32 per cent higher than the value of catch in 1997/98 ($50.9 million). The increase in value is wholly attributable to an overall increase in price and despite a 26 per cent decline in catch. The value of catch in 2010/11 was down slightly from 2009/10 (70.7 million).

Between 1997/98 and 2010/11 the 78 per cent increase in nominal average price of Southern Zone Rock Lobster was equivalent to a 19 per cent rise in real price. In 2010/11, the price of Southern Zone Rock Lobster was down slightly compared to 2008/09 and 2009/10 prices.

The relationship between (USD) exchange rates, and the price of Rock Lobster over the period 1997/98 and 2010/11 is similar to the relationship between (HKD) exchange rates and the price of Rock Lobster over the same period. The coefficient of correlation is moderately positive in both cases (0.58 for USD and 0.48 for HKD), which is counter to expectations. Other factors influencing demand, such as the increasing wealth and size of the middle class in Asia, are likely to be responsible for the overall increasing trend in price of Rock Lobster. Examination of the relationship graphically suggests that exchange rates do have some inverse effect on the price of Rock Lobster.

Management Costs…

The average management cost per licence holder was $14,891 in 2010/11.

Fees as a percentage of GVP increased from 3.7 per cent in 2009/10 to 4.0 per cent in 2010/11, due largely to a fall in GVP.

Financial Performance Indicators…

Between 1997/98 and 2010/11, the total number of licence holders in the fishery declined from 184 to 181. The average income per boat followed an increasing trend, despite some year-to-year fluctuations. In 1997/98 the average income per boat was $282,000 while in 2010/11 average income was almost $417,000 (in nominal terms).

Between 1997/98 and 2010/11 the average price of Southern Zone Rock Lobster increased by approximately 78 per cent in nominal terms. The average costs of catching Southern Zone Rock Lobster also followed an increasing trend. Between 1997/98 and 2010/11 the average cost per kilogram increased by approximately 85 per cent.

Changes in each of the profitability measures for the fishery were closely related to the average income earned. Profitability followed an increasing trend between 1997/98 and 2001/02 before declining over the next few years. Average profits earned in the fishery increased steadily from 2003/04, peaking in 2008/09. Profits fell in 2009/10, and again in 2010/11.

There was a significant decline in the average rate of return to capital between 1997/98 and 2003/04, however the decline in the rate of return was primarily due to an increase in the value of licences. The rate of return to capital has followed an increasing trend in the following years, despite a large fall in 2009/10 and 2010/11 as a result of improved profitability in the fishery and despite increases in average licence value.

Contribution to SA Economy…

The change in total output and gross state product (GSP) impacts are closely related to changes in price and fishery GVP. In 2010/11 the fisheries contribution to GSP was estimated to be $102 million, a fall from the peak of $126 million in 2008/09.

There has been an overall decline in the direct employment impact of the fishery since 1997/98, due to a decrease in the number of licence holders in the fishery and productivity improvements. In 2010/11 there were an estimated 1,001 fte jobs generated by the industry, 426 directly in fishing, 99 in downstream activities, and a further 476 in indirect economic activity.

Economic Rent…

The economic rent fluctuated between years but increased overall. Year-to-year changes in the economic rent were closely related to the gross income of the fishery. In 1997/98 estimated economic rent in the fishery was $8.4 million while in 2010/11 it was $9.0 million. Economic rent in 2010/11 was down significantly from a peak of 25.6 million in 2006/07

1. Introduction

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

This report is the fourteenth annual economic indicators report for the SA Southern Zone Rock Lobster (SZRL) fishery. The first report, prepared for 1997/98, entitled *Economic Indicators for the SA Southern Zone Rock Lobster Fishery 1997/98* (EconSearch 1999a), reported on the results of an initial economic survey of the SA Southern Zone Rock Lobster fishery. The second and third annual reports, prepared for 1998/99 and 1999/00 respectively, provided an update of the 1997/98 economic indicators (EconSearch 1999b and 2001). The fourth annual report outlined the fishery's economic performance in 2000/01 based on the results of a second survey of licence holders (EconSearch 2002). The fifth, sixth and seventh reports, prepared for 2001/02, 2002/03 and 2003/04 respectively, provided an update of the 2000/01 economic indicators based on the second survey of licence holders (EconSearch 2003, 2004 and 2005). The eighth report, prepared for 2004/05, provided an outline of the fishery's economic performance based on a third survey of licence holders, conducted in 2006 (EconSearch 2006).The ninth and tenth reports, prepared for 2005/06 and 2006/07, provided updates of the 2004/05 economic indicators based on the third licence holder survey (EconSearch 2007 and 2008). The eleventh, twelfth and thirteenth reports, prepared for 2007/08, 2008/09 and 2009/10, provided an outline of the fishery's economic performance based on a fourth survey of licence holders, conducted in 2009 (EconSearch 2009a, 2010, 2011).

The objective of this report, *Economic Indicators for the SA Southern Zone Rock Lobster Fishery 2010/11*, is to provide an update of the fishery's most recent economic performance based on the fifth licence holder survey undertaken in 2012.

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);
- economic impact of the fishery, both local and state;
- economic rent;
- external factors influencing the economic condition of the fishery; and
- Rock Lobster exports (quantity and value).

For purposes of comparison, summary economic indicators for all South Australian commercial fisheries, up to 2009/10, are presented in Appendix 3.

2. Method of Analysis and Definition of Terms

2.1 Survey of Licence Holders in the Fishery, 2010/11

The questionnaire for the survey of licences holders in 2012 was based on previous economic indicator surveys. The questionnaire for the survey was drafted and subsequently modified after consultation with the South Eastern Professional Fishermen's Association (SEPFA).

Economic data collected in the survey will also be used in a Seafood CRC funded project to develop bioeconomic models for Southern Rock Lobster fisheries. EconSearch has been included in a consortium of research organisations (including CSIRO, DPI Victoria, SARDI, SARLAC, Southern Rocklobster Ltd and University of Tasmania) to undertake this project. In these models biological and economic data are combined to enable stakeholders to make decisions about their fishery with the goal of enhancing profitability.

Additional questions were later added that were aimed at gathering information to be used in another project, 'Developing and testing social objectives and indicators for fisheries management', which is funded by the Fisheries Research and Development Corporation (FRDC), together with PIRSA Fisheries and the CSIRO Wealth from Oceans Flagship project. This project will identify social objectives relevant to different fisheries contexts, and develop and trial cost-effective indicators for their monitoring.

The sampling frame for the survey included all active licence holders in the SZRL Fishery (164 in total). The time period for which information was sought was the 2010/11 financial year.

In April 2012, all licence holders in the fishery were sent an introductory letter outlining the survey and encouraging them to participate. Licence holders were then contacted and face-to-face surveys were carried out. A total of 45 responses were received which represented 27 per cent of the total active licence holders in the fishery.[1]

Of the 164 active licence holders in the fishery, 119 did not provide a response to the survey for the following reasons:

- could not be contacted;
- concerns about how the data would be used
- too busy; and
- minimal fishing or not interested in participating in the survey.

[1] A number of licence holders (17 in total) did not fish in 2010/11 and were, therefore, excluded from the sample. A licence holder is considered 'active' if they fished for one day or more during the 2010/11 financial year.

2.2 Definition of Terms[2]

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

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

- fuel, oil and grease for the boat (net of diesel fuel rebate)
- bait
- ice
- provisions
- crew payments
- fishing equipment, purchase and repairs (nets, pots, lines, etc)
- repairs & maintenance: ongoing (slipping, painting, overhaul 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 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

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

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, 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 Southern Zone Rock Lobster Fishery

3.1 Catch and Gross Value of Production

The data shown in Table 3.1 indicate that since the introduction of a total allowable commercial catch (TACC) in 1993/94 catch has remained relatively constant apart from a decline from 2008/09 to 2010/11. While the TACC was reduced from 1,900 tonnes in 2007/08 to 1,770 tonnes in 2008/09, catch in the fishery fell significantly over this period to 1,407 tonnes (a 24 per cent fall). Due to this significant fall in catch in 2008/09 the TACC was reduced to 1,400 tonnes for the 2009/10 season. However, a further fall in catch in 2009/10 to 1,243 tonnes (a further 12 per cent reduction) saw the TACC further reduced to 1,250 tonnes for the 2010/11 season. This TACC constrained catch in 2010/11 where catch was 1,244 tonnes (Table 3.1).

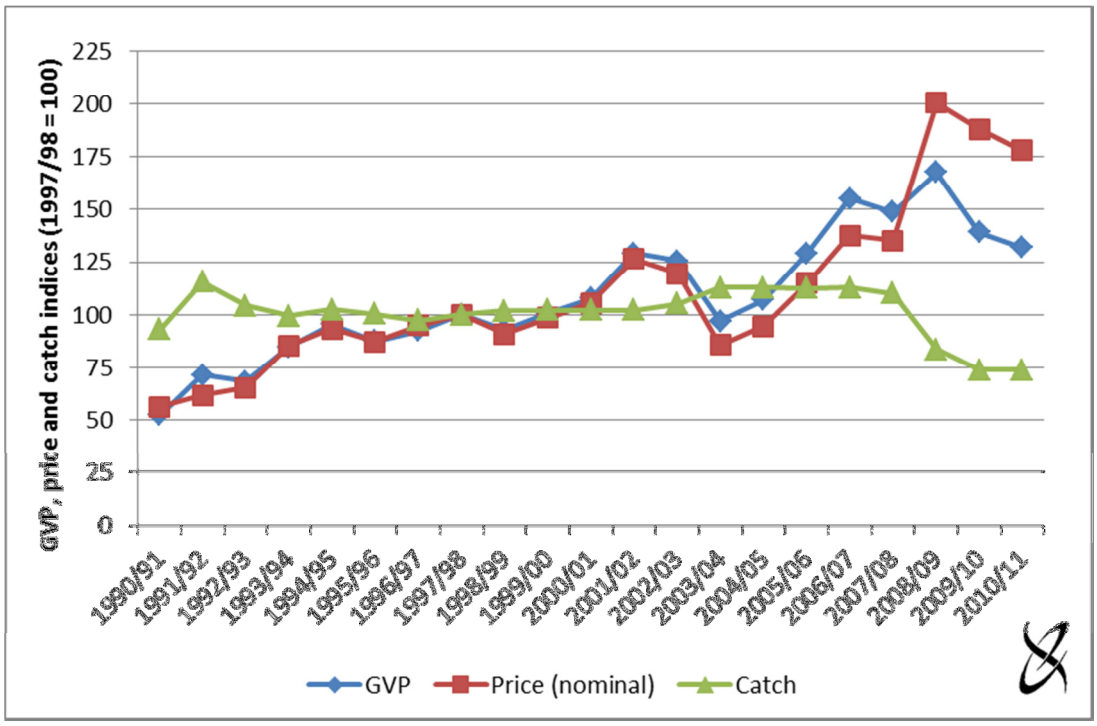
Table 3.1 SA Rock Lobster catch and value of catch, 1990/91 to 2010/11

Year	Southern Zone		Northern Zone		South Australia	
	(tonnes)	($m)	(tonnes)	($m)	(tonnes)	($m)
1990/91	1,562	26.7	1,104	18.2	2,666	44.9
1991/92	1,940	36.3	1,222	21.4	3,162	57.8
1992/93	1,754	34.8	1,064	20.5	2,818	55.3
1993/94	1,669	43.2	930	23.4	2,599	66.6
1994/95	1,720	48.6	891	25.5	2,611	74.0
1995/96	1,684	44.6	903	23.8	2,587	68.4
1996/97	1,635	47.0	893	24.4	2,528	71.4
1997/98	1,680	50.9	942	27.7	2,622	78.6
1998/99	1,713	47.2	1,016	26.7	2,729	73.9
1999/00	1,717	51.2	1,001	29.8	2,718	81.0
2000/01	1,716	54.7	846	28.0	2,562	82.7
2001/02	1,717	65.7	675	26.2	2,392	91.9
2002/03	1,766	63.8	595	18.8	2,361	82.7
2003/04	1,896	49.3	504	12.0	2,400	61.4
2004/05	1,897	54.4	446	11.6	2,343	66.0
2005/06	1,889	65.7	476	15.4	2,365	81.2
2006/07	1,895	78.9	492	18.0	2,532	97.7
2007/08	1,850	75.7	459	15.9	2,411	92.2
2008/09	1,407	85.4	403	19.3	1,925	105.4
2009/10	1,243	70.7	310	15.1	1,642	86.4
2010/11	1,244	67.0	313	14.3	1,695	82.4

Source: SARDI Aquatic Sciences

Table 3.1 and Figure 3.1 illustrate how the value of the fishery has changed over the 21 years, 1990/91 to 2010/11. The nominal value of the southern zone catch in 2010/11 of $67.0 million was 32 per cent above that in 1997/98. Despite the relatively constant catch between 1990/91 to 2007/08 the value of fishery gradually increased due mainly to an increase in price. Even in 2008/09 the decline in catch was more than offset by a steep price increase. However, falls in both catch and price in 2009/10 and 2010/11 resulted in a decline in fishery GVP.

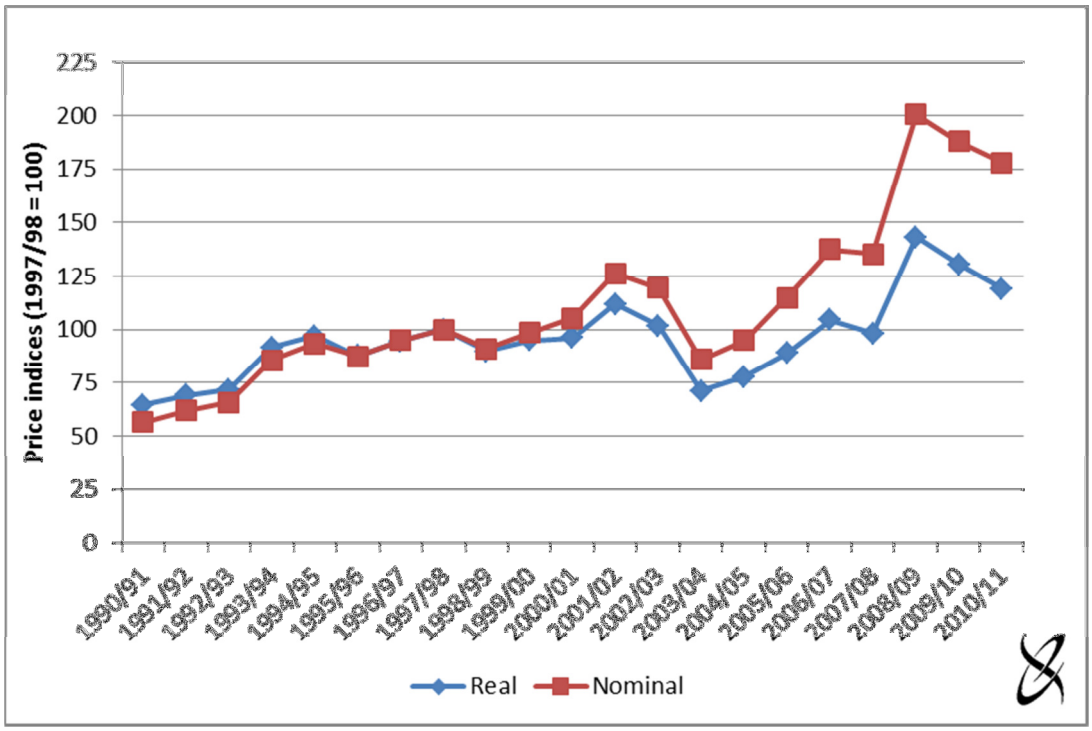
Figure 3.1 GVP, price and catch indices for the SA Southern Zone Rock Lobster fishery (1997/98=100)



Source: SARDI Aquatic Sciences

The price of Rock Lobster followed an increasing trend between 1997/98 and 2001/02. In the following two years there was a sharp decline in price, but between 2003/04 and 2008/09 there was a period of substantial growth. However, average price declined in subsequent years and was $53.87/kg in 2010/11. Figure 3.2 shows that the nominal price in 2010/11 was 78 per cent above that in 1997/98, which is equivalent to a 19 per cent real price increase. Due to the large fall in catch between 2008/09 and 2010/11 and the fall in average price in 2009/10 and 2010/11, the value of the southern zone catch in 2010/11 was actually 23 per cent lower in real terms than it was in 1997/98 (32 per cent higher in nominal terms as noted above).

Figure 3.2 Price index for the SA Southern Zone Rock Lobster fishery (1997/98=100)



Source: SARDI Aquatic Sciences

3.2 Costs of Management

South Australian commercial fisheries operate under full cost recovery. Accordingly, licence fees are set to cover the cost of managing the fishery. Management services include:

- annual reports on biological and economic indicators;
- policy and management services;
- regulatory/legislation and licensing services;
- compliance services;
- directorate services;
- extension services; and
- research services, including the Fisheries Research and Development Corporation (FRDC) levy.

For the purpose of this analysis, the cost of providing these management services has been assumed to be equal to the gross receipts from licence fees in the fishery (Mehdi Doroudi, PIRSA, pers. comm.).

Table 3.2 shows actual licence fee receipts for the fishery for the period 1996/97 to 2011/12.

Table 3.2 Costs of management in the SA Southern Zone Rock Lobster fishery, 1996/97 to 2011/12

	Licence Fees ($,000)	Gross Value of ($,000)	Fees/GVP (%)	Catch (t)	Fee/Catch ($/kg)	No. Licence (no.)	Fee/Licence Holder ($/licence)
1996/97	$2,200	47,003	4.7%	1,635	$1.35	185	$11,890
1997/98	$2,610	50,872	5.1%	1,680	$1.55	184	$14,186
1998/99	$2,145	47,165	4.5%	1,713	$1.25	184	$11,659
1999/00	$2,009	51,163	3.9%	1,717	$1.17	183	$10,979
2000/01	$2,102	54,738	3.8%	1,716	$1.23	182	$11,551
2001/02	$2,211	65,671	3.4%	1,717	$1.29	180	$12,283
2002/03	$2,156	63,838	3.4%	1,766	$1.22	180	$11,975
2003/04	$2,520	49,319	5.1%	1,896	$1.33	180	$13,999
2004/05	$2,497	54,397	4.6%	1,897	$1.32	180	$13,870
2005/06	$2,508	65,737	3.8%	1,889	$1.33	180	$13,932
2006/07	$2,976	78,919	3.8%	1,895	$1.57	181	$16,442
2007/08	$2,628	75,731	3.5%	1,850	$1.42	181	$14,518
2008/09	$2,523	85,371	3.0%	1,407	$1.79	181	$13,941
2009/10	$2,594	70,720	3.7%	1,243	$2.09	181	$14,332
2010/11	$2,695	67,020	4.0%	1,244	$2.17	181	$14,891
2011/12	$2,605	n.a.	-	n.a.	-	181	$14,391

[a] A number of Southern Zone Rock Lobster licence holders have marine scalefish entitlements. The costs of managing the marine scalefish fishery are not included in the licence fee information reported above.

Source: PIRSA Fisheries

Between 1996/97 and 2010/11 the following trends have emerged.

- Licence fees as a percentage of gross value of production followed a declining trend from 1997/98 to 2002/03 before increasing to 5.1 per cent in 2003/04. Fees as a proportion of GVP decreased between 2003/04 and 2008/09, and were 3.0 per cent of GVP in 2008/09. Due to the significant fall in GVP, licence fees as a percentage of GVP increased to 3.7 per cent in 2009/10, and increased further to 4.0 per cent in 2010/11.[3]
- The cost of licence fees per kilogram of landed lobster fell from $1.35 in 1996/97 to $1.17 per kilogram in 1999/00 but has since increased and was $2.17 per kilogram in 2010/11, principally due to the reduction in catch.
- The cost per licence holder was relatively steady at around $12,000 per licence holder from 1996/97 to 2002/03 but increased to $16,442 in 2006/07. This spike was the result of one-off costs to implement video monitoring and electronic scales in the fishery. Fees per licence holder were $14,891 in 2010/11, slightly more than the previous year.
- Fees per licence holder decreased from $14,891 in 2010/11 to $14,391 in 2011/12, a fall of 3 per cent.

[3] Comparative figures for other SA commercial fisheries are provided in Appendix Table 3.3 for 2009/10. Comparative figures for 2010/11 will be provided in the forthcoming EconSearch report, *Economic Indicators for the Commercial Fisheries of South Australia, Summary Report, 2010/11.*

3.3 Economic Objectives of the Southern Zone Rock Lobster Fishery

According to the management plan for the Southern Zone Rock Lobster fishery (Sloan and Crosthwaite 2007), management of the fishery has four key goals:

1. *Maintain ecologically sustainable stock levels.*
2. *Ensure optimum utilisation and equitable distribution of Rock Lobster stocks.*
3. *Minimise impacts on the ecosystem.*
4. *Cost effective and participative management.*

In order to achieve these goals the management plan sets out specific biological, ecological, social and economic objectives for the fishery. The economic objectives of the Southern Zone Rock Lobster fishery, as described in the management plan for the fishery, are summarised in Table 3.3.

3.4 Financial Performance Indicators

The major measures of the financial performance of the surveyed boats in the SA SZRL fishery for the years 2008/09 to 2010/11 are shown in Table 3.4. Estimates for 2008/09 to 2009/10 are based on the 2009 licence holder survey and those estimates for 2010/11 are based on the most recent survey conducted over the period April to July 2012. Financial performance estimates for 1997/98 to 2007/08 are provided in Appendix 4.

As a result of the large sample size it was possible to divide the 2010/11 survey responses into four groups (quartiles) according to rate of return to capital. The first quartile comprises the 25 per cent of boats with the lowest rate of return and fourth quartile includes the 25 per cent with the highest rate of return to capital. The financial performance measures for return to capital quartiles for 2010/11 are provided in Table Table 3.5.

In addition, the survey responses were divided into three groups according to the number of licensed pots held. The first group includes those licence holders with 65 pots or fewer (approximately 33 per cent of survey respondents), the second group includes licence holders with 66 to 79 pots (approximately 29 per cent of survey respondents) and the third group includes licence holders with 80 pots or more (approximately 39 per cent of survey respondents).[4] The financial performance estimates for the pot groups for 2010/11 are provided in Table 3.6 as an average per boat and in **Error! Reference source not found.**as an average per pot.

Income…

Total recorded lobster catch was virtually unchanged between 2009/10 and 2010/11 and with a price decrease of 5 per cent, gross receipts from the sale of Rock Lobster fell by 5 per cent over that period (Table 3.1). The estimated average gross income per boat in the SZRL fishery was approximately $417,000 in 2010/11, compared to over $454,000 in 2009/10, a decrease of 8 per cent (Table 3.5)[5].

[4] Number of pots was based on pots owned and leased by the licence holders who participated in the 2012 survey of licence holders.

[5] Financial performance estimates for 2010/11 are based on a different survey sample to earlier years. Some of the difference between years is therefore, attributed to sampling variability.

Table 3.3 Economic objectives of the Southern Zone Rock Lobster fishery

Goal	Objective	Performance Indicator	Description	Limit Reference Points
Optimal utilisation and equitable distribution of Rock Lobster stocks	Maintain a flow of economic benefit from the fishery to the broader community	GVP	The total catch valued at the landed beach price – Used to determine the overall industry value	Monitored annually and reported in stock assessment
		Economic Impact (measured by GSP)	The total flow on effects associated with the fishery, including business turnover, employment, household income and value adding. Used to determine the total impact on the economy	Contribution to GSP drops below $75 million.
		Economic rent	The difference between the market price of Rock Lobster and the unit costs of producing the landed product. Used to determine the value of the natural resource itself	Economic rent decreases for two consecutive years
Cost effective and participative management of the fishery	Cost effective and efficient management of the fishery, in line with the government's cost recovery policy	Management costs	Total annual costs associated with management of the fishery	Management costs as a % of GVP increase for two consecutive years
				Total management costs increase by 10% or more in one year
				Total management costs increase by 15% or more in any two consecutive years

Indicators reported in economic reports.

Trigger points that can be calculated from reported economic indicators.

Source: (Sloan and Crosthwaite 2007)

Table 3.4 Financial performance in the SA Southern Zone Rock Lobster fishery, 2008/09 to 2010/11 (average per boat) [a]

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

[a] Financial performance estimates for 2008/09 to 2009/10 are based on the 2009 licence holder survey and estimates for 2010/11 are based on the 2012 licence holders 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 repairs and maintenance) and fixed (management and administrative duties) based on survey responses.

Source: EconSearch analysis

Table 3.5 Financial performance in the SA Southern Zone Rock Lobster fishery by return to capital quartile, 2010/11 (average per boat)

		Average per boat				
		Lowest 25%	Second Quartile	Third Quartile	Highest 25%	All Boats
(1)	Total Boat Gross Income	$354,450	$397,543	$477,616	$438,491	$418,004
	Variable Costs					
	Fuel	$36,306	$46,435	$34,752	$27,644	$36,489
	Repairs & Maintenance [a]	$34,032	$19,710	$37,697	$25,513	$29,213
	Bait/Ice	$34,776	$17,192	$13,471	$12,399	$19,263
	Provisions	$558	$300	$1,034	$775	$667
	Labour - paid	$107,971	$103,820	$105,446	$64,829	$95,951
(2)	- unpaid [b]	$23,022	$17,829	$16,202	$17,506	$18,562
	Other	$8,677	$7,072	$8,847	$6,633	$7,814
(3)	**Total Variable Costs**	**$245,341**	**$212,358**	**$217,448**	**$155,299**	**$207,959**
	Fixed Costs					
	Licence Fee	$25,936	$18,231	$19,438	$21,865	$21,247
	Insurance	$7,127	$7,584	$6,728	$6,368	$6,961
(4)	Interest	$38,480	$25,969	$46,948	$36,923	$37,051
(5)	Labour - unpaid [b]	$4,519	$3,500	$3,180	$3,437	$3,644
(6)	Leasing	$4,282	$2,191	$3,336	$1,513	$2,827
	Legal & Accounting	$3,554	$2,851	$2,645	$3,650	$3,155
	Telephone etc.	$2,977	$1,382	$2,335	$1,969	$2,151
	Slipping & Mooring	$14,069	$3,431	$3,955	$8,812	$7,382
	Travel	$1,710	$478	$923	$1,745	$1,190
	Office & Admin	$4,160	$5,204	$6,115	$4,734	$5,082
(7)	**Total Fixed Costs**	**$106,815**	**$70,821**	**$95,603**	**$91,015**	**$90,690**
(8)	**Total Boat Cash Costs (3 + 7)**	**$352,156**	**$283,179**	**$313,052**	**$246,314**	**$298,648**
	Boat Gross Margin (1 - 3)	**$109,109**	**$185,185**	**$260,167**	**$283,192**	**$210,045**
(9)	**Total Unpaid Labour (2 + 5)**	**$27,541**	**$21,329**	**$19,382**	**$20,943**	**$22,206**
	Gross Operating Surplus (1 - 8 + 9)	**-$25,247**	**$93,035**	**$145,182**	**$171,234**	**$97,149**
(10)	**Boat Cash Income (1 - 8)**	**$2,294**	**$114,364**	**$164,564**	**$192,177**	**$119,355**
(11)	**Depreciation**	**$66,444**	**$68,217**	**$46,155**	**$37,330**	**$54,663**
(12)	**Boat Business Profit (10 - 11)**	**-$64,150**	**$46,147**	**$118,409**	**$154,847**	**$64,692**
(13)	**Profit at Full Equity (12 + 4 + 6)**	**-$21,388**	**$74,306**	**$168,694**	**$193,283**	**$104,570**
	Boat Capital					
(14)	Fishing Gear & Equip	$342,841	$475,429	$531,191	$383,605	$436,602
	Licence Value	$2,836,100	$3,321,636	$3,845,455	$2,361,100	$3,114,524
(15)	**Total Boat Capital**	**$3,178,941**	**$3,797,065**	**$4,376,645**	**$2,744,705**	**$3,551,126**
	Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	**-6.2%**	**15.6%**	**31.8%**	**50.4%**	**24.0%**
	Rate of Return on Total Boat Capital (13 / 15 * 100)	**-0.7%**	**2.0%**	**3.9%**	**7.0%**	**2.9%**
	Average Number of Pots [c]	**65**	**69**	**84**	**75**	**73**

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

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

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

Source: EconSearch analysis

Table 3.6 Financial performance in the SA Southern Zone Rock Lobster fishery by number of pots, 2010/11 (average per boat)

		Average per boat			
		50 - 65 Pots	66 - 79 Pots	80 + Pots	All Boats
(1)	Total Boat Gross Income	$319,272	$400,620	$517,431	$418,004
	Variable Costs				
	Fuel	$30,602	$40,659	$38,513	$36,489
	Repairs & Maintenance [a]	$21,995	$27,656	$36,695	$29,213
	Bait/Ice	$15,336	$31,372	$13,617	$19,263
	Provisions	$576	$485	$883	$667
	Labour - paid	$52,132	$117,040	$118,475	$95,951
(2)	- unpaid [b]	$21,235	$19,702	$15,369	$18,562
	Other	$7,428	$4,692	$10,494	$7,814
(3)	**Total Variable Costs**	**$149,305**	**$241,605**	**$234,046**	**$207,959**
	Fixed Costs				
	Licence Fee	$24,966	$17,315	$20,942	$21,247
	Insurance	$7,262	$7,204	$6,517	$6,961
(4)	Interest	$31,734	$30,781	$46,405	$37,051
(5)	Labour - unpaid [b]	$4,169	$3,868	$3,017	$3,644
(6)	Leasing	$4,507	$305	$3,250	$2,827
	Legal & Accounting	$1,810	$5,135	$2,847	$3,155
	Telephone etc.	$1,961	$2,517	$2,043	$2,151
	Slipping & Mooring	$12,678	$5,385	$4,247	$7,382
	Travel	$745	$819	$1,856	$1,190
	Office & Admin	$5,888	$4,019	$5,174	$5,082
(7)	**Total Fixed Costs**	**$95,717**	**$77,347**	**$96,298**	**$90,690**
(8)	**Total Boat Cash Costs (3 + 7)**	**$245,022**	**$318,952**	**$330,344**	**$298,648**
	Boat Gross Margin (1 - 3)	**$169,968**	**$159,015**	**$283,385**	**$210,045**
(9)	**Total Unpaid Labour (2 + 5)**	**$25,404**	**$23,569**	**$18,385**	**$22,206**
	Gross Operating Surplus (1 - 8 + 9)	**$99,654**	**$105,237**	**$205,473**	**$141,561**
(10)	**Boat Cash Income (1 - 8)**	**$74,250**	**$81,668**	**$187,087**	**$119,355**
(11)	**Depreciation**	**$44,548**	**$66,283**	**$54,798**	**$54,663**
(12)	**Boat Business Profit (10 - 11)**	**$29,703**	**$15,385**	**$132,289**	**$64,692**
(13)	**Profit at Full Equity (12 + 4 + 6)**	**$65,943**	**$46,471**	**$181,944**	**$104,570**
	Boat Capital				
(14)	Fishing Gear & Equip	$387,016	$332,471	$558,088	$436,602
	Licence Value	$2,479,000	$3,364,750	$3,482,938	$3,114,524
(15)	**Total Boat Capital**	**$2,866,016**	**$3,697,221**	**$4,041,025**	**$3,551,126**
	Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	**17.0%**	**14.0%**	**32.6%**	**24.0%**
	Rate of Return on Total Boat Capital (13 / 15 * 100)	**2.3%**	**1.3%**	**4.5%**	**2.9%**
	Average Number of Pots [c]	**59**	**74**	**89**	**75**

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

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

[c] Average number of pots owned and leased by licence holders in each pot grouping.

Source: EconSearch analysis

Table 3.7 Financial performance in the SA Southern Zone Rock Lobster fishery by number of pots, 2010/11 (average per pot)

		Average per pot			
		50 - 65 Pots	66 - 79 Pots	80 + Pots	All Boats
(1)	Total Boat Gross Income	$5,444	$5,408	$5,802	$5,596
	Variable Costs				
	Fuel	$522	$549	$432	$489
	Repairs & Maintenance [a]	$375	$373	$411	$391
	Bait/Ice	$262	$423	$153	$258
	Provisions	$10	$7	$10	$9
	Labour - paid	$889	$1,580	$1,328	$1,285
(2)	- unpaid [b]	$362	$266	$172	$249
	Other	$127	$63	$118	$105
(3)	**Total Variable Costs**	**$2,546**	**$3,261**	**$2,624**	**$2,784**
	Fixed Costs				
	Licence Fee	$426	$234	$235	$284
	Insurance	$124	$97	$73	$93
(4)	Interest	$541	$415	$520	$496
(5)	Labour - unpaid [b]	$71	$52	$34	$49
(6)	Leasing	$77	$4	$36	$38
	Legal & Accounting	$31	$69	$32	$42
	Telephone etc.	$33	$34	$23	$29
	Slipping & Mooring	$216	$73	$48	$99
	Travel	$13	$11	$21	$16
	Office & Admin	$100	$54	$58	$68
(7)	**Total Fixed Costs**	**$1,632**	**$1,044**	**$1,080**	**$1,214**
(8)	**Total Boat Cash Costs (3 + 6)**	**$4,178**	**$4,305**	**$3,704**	**$3,998**
	Boat Gross Margin (1 - 3)	**$2,898**	**$2,146**	**$3,177**	**$2,812**
(9)	**Total Unpaid Labour (2 + 5)**	**$433**	**$318**	**$206**	**$297**
	Gross Operating Surplus (1 - 8 + 9)	**$1,699**	**$1,421**	**$2,304**	**$1,895**
(10)	**Boat Cash Income (1 - 8)**	**$1,266**	**$1,102**	**$2,098**	**$1,598**
(11)	**Depreciation**	**$760**	**$895**	**$614**	**$732**
(12)	**Boat Business Profit (10 - 11)**	**$507**	**$208**	**$1,483**	**$866**
(13)	**Profit at Full Equity (12 + 4 + 6)**	**$1,124**	**$627**	**$2,040**	**$1,400**
	Boat Capital				
(14)	Fishing Gear & Equip	$6,600	$4,488	$6,257	$5,845
	Licence Value	$42,273	$45,418	$39,052	$41,699
(15)	**Total Boat Capital**	**$48,872**	**$49,906**	**$45,309**	**$47,545**
	Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	**17.0%**	**14.0%**	**32.6%**	**24.0%**
	Rate of Return on Total Boat Capital (13 / 15 * 100)	**2.3%**	**1.3%**	**4.5%**	**2.9%**

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

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

Source: EconSearch analysis

In 2010/11, the average gross income for boats in the first quartile was approximately 15 per cent below the average, while in the fourth quartile, average gross income was 5 per cent above the average recorded for all surveyed boats (Table 3.5).

As expected, the average gross income per boat was positively correlated with the number of pots per boat (Table 3.6). However, the gross income per pot was relatively consistent across all three groups, with boats with more than 80 pots showing slightly more income per pot (Table 3.7).

Costs…

Tables 3.4 to 3.7 show total costs separated into variable and fixed costs. Variable costs (70 per cent of total boat cash costs in 2010/11) represented a significantly greater proportion of total boat cash costs than fixed costs (30 per cent).

It was estimated that average total boat cash costs decreased by approximately 3 per cent between 2009/10 and 2010/11. Notable changes in costs include decreases in fuel and repairs, and maintenance, labour and leasing costs, and increases in interest, and bait and ice, costs (Table 3.4).

In 2010/11, for the fishery as a whole, approximately 40 per cent of total boat cash costs were attributable to labour costs (just over $118,000 per boat including imputed unpaid labour), by far the largest individual cost item. The labour costs reported in Table 3.4 are comprised of payments to licence owners and crew as well as an imputed wage to those licence owners and other family members who are not paid a wage directly by the business. Imputed unpaid labour (around $30,000 per boat for 2010/11) was divided into variable (fishing and repairs and maintenance) and fixed (management and administration) components based on the 2010/11 licence holder survey.

The other significant cash costs were fuel (12 per cent), interest (12 per cent), repairs and maintenance (10 per cent), and licence fees (7 per cent) (Table 3.4).

Cash Income and Profit…

The separation of variable and fixed costs from total cash costs enables the calculation of boat gross margin (total boat income less total boat variable costs) as a basic measure of profit (assuming that capital has no alternative use and that as fishing activity varies there is no change in capital or fixed costs). There was fall in boat gross margin in 2010/11 ($210,000) compared to previous year ($233,000), mainly due to the reduction in boat gross income.

Gross operating surplus (GOS) was calculated excluding imputed wages for operator and family members. The average GOS of all boats in 2010/11 was estimated to be almost $142,000, 20 per cent lower than in 2009/10 ($177,000) (Table 3.4).

Boat cash income is measured as gross operating surplus with imputed wages (unpaid labour) included as cash costs. The estimated average boat cash income in 2010/11 was around $107,000 per boat, down from $147,000 in 2009/10.

Cash operating surplus and boat business profit give an indication of the capacity of the operator to remain in the fishery in the short to medium term. Average boat business profit was estimated to be approximately $65,000 per boat in 2010/11, down from $103,000 in 2009/10 (Table 3.4).

In 2010/11, the average boat business profit for boats in the first quartile was a loss of $64,000. Boats in the fourth quartile made a significant profit, (almost $155,000) (Table 3.5).

Boats with a large number of pots tended to be more profitable than boats with a small or medium number of pots, on both a per boat and per pot basis. The average boat business profit for licence holders with over 80 pots was approximately $132,000 in 2010/11. This is significantly greater than that for licence holders with less than 65 pots ($29,000), or 66-79 pots ($15,000). On a per pot basis, the average boat business profit was significantly greater for licence holders with 80 or more pots than for those with less than 79 pots (Tables 3.6 and 3.7).

Profit at full equity is a measure of the profitability of an individual licence holder, assuming the licence holder has full equity in the operation. It is a useful absolute measure of the economic performance of fishing firms. Profit at full equity in 2010/11 (approximately $105,000) was 26 per cent lower than the previous year ($141,000).

Return on Investment…

There are a number of interpretations of the concept of return on investment. 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 return on investment has been calculated as the profit at full equity as a percentage of the total capital employed.

While the rate of return to boat capital (i.e. fishing gear and equipment) for all boats is relatively high (23.4 per cent), the rate of return to total capital was estimated to average only 2.9 per cent in 2010/11. This is slightly down on the 2009/10 estimate of 3.4 per cent (Table 3.4).

The rate of return to total capital is calculated using the profit at full equity and the average investment in all capital (i.e. fishing gear and equipment and licence value). The average profit at full equity per boat in the first quartile was approximately -$21,000, compared to $193,000 in the fourth quartile. This significant difference is due to significantly lower average gross income compared to the fourth quartile. The average investment in fishing gear and equipment was lower in the first quartile (approximately $343,000 in 2010/11) compared to the fourth quartile ($383,000). Both the second and third quartiles have higher investment than either the first or fourth quartiles. Accordingly, in 2010/11, the average rate of return to total capital was - 0.7 per cent in the first quartile and 7.0 per cent in the fourth quartile (Table 3.5).

In 2010/11, licence holders with less than 65 pots earned an average rate of return to total capital of 2.3 per cent, the rate of return was slightly lower (1.3 per cent) for licence holders with 66 to 79 pots. For licence holders with 80 or more pots the average rate of return to total capital was 4.5 per cent (Table 3.6).

Licence values…

The value of licences represents a significant proportion of the capital used by each licence holder in the fishery. The reported licence value of $3.1 million per boat for all boats (approximately $40,000 per pot) for 2010/11 represents the licence holders' estimate of the value of their licence, based on the 2012 survey responses. This is a

(17 per cent) decrease on the licence value estimated for 2009/10, $3.8 million (Table 3.4).

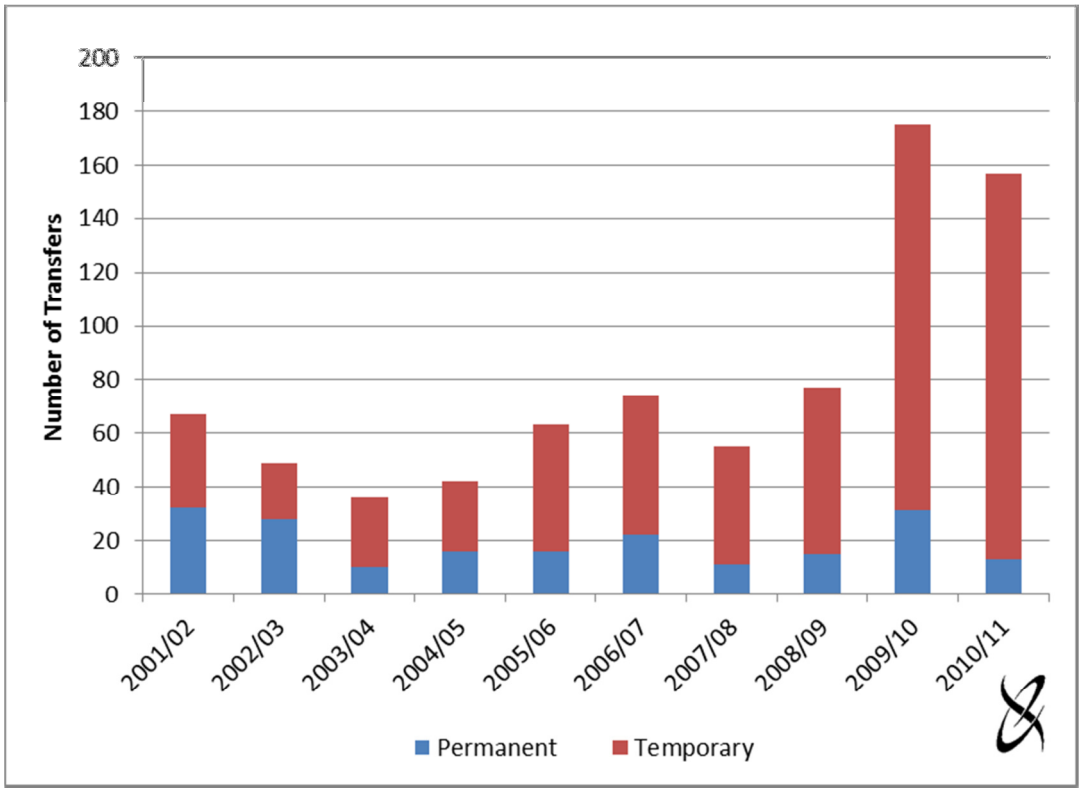
Licence values are determined by both current earning capacity and expectations about future earnings. There was one licence transfer over the 12-month period (2010/11), however, the value of this licence was unavailable and, therefore, cannot be used for comparison.

The number of quota transfers between licence holders and total number of quota units transferred over the period 2001/02 to 2010/11 are detailed in Figures 3.3 and 3.4, respectively.

Since 2001/02 the average number of quota transfers between licence holders has been 80 per annum, comprising of 19 permanent transfers and 60 temporary transfers. In 2010/11 there were 157 quota transfers between licence holders, although the majority (144) were temporary transfers (Figure 3.3).

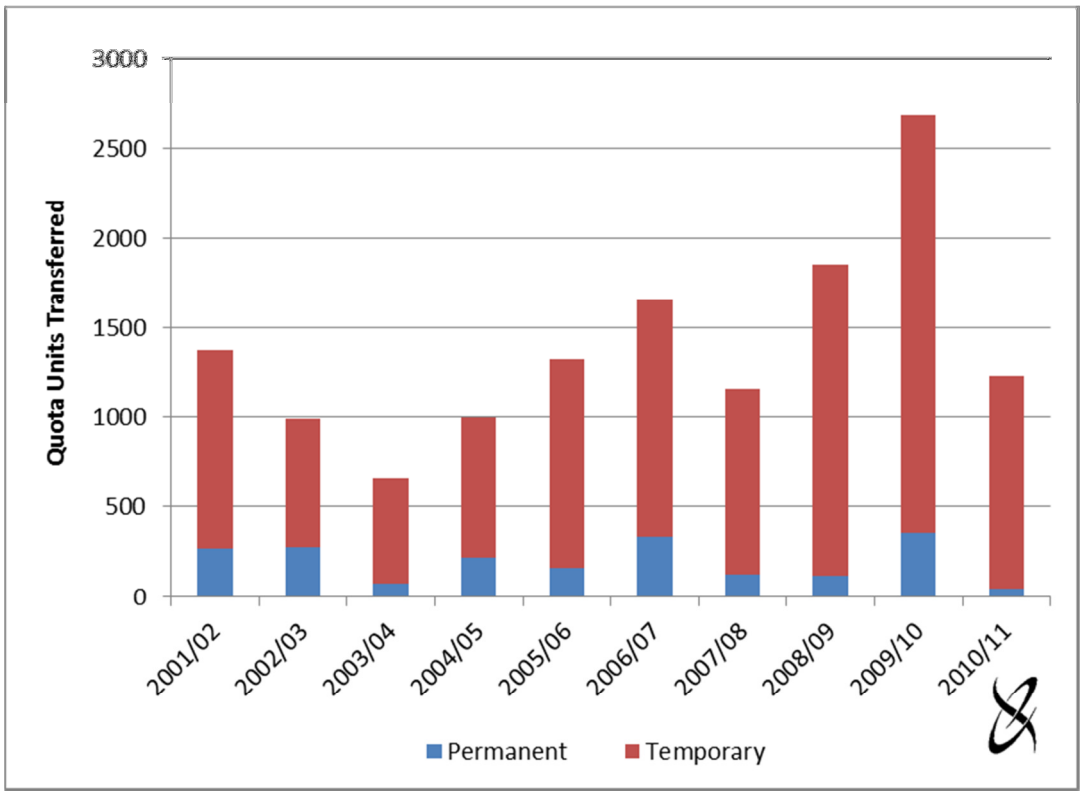
Over the 10 years to 2010/11, an average of 1,395 quota units has been traded each year (201 permanent and 1,195 temporary). This average annual trade represents 12 per cent of the total quota units in the fishery. In 2010/11 the total number of quota units transferred was 1,232 which comprised 10 per cent of the total quota units in the fishery (Figure 3.4).

Figure 3.3 Number of quota transfers, 2001/02 to 2010/11



Source: PIRSA Fisheries Licensing Section

Figure 3.4 Number of quota units transferred, 2001/02 to 2010/11



Source: PIRSA Fisheries Licensing Section

3.5 State and Regional Economic Impact

Estimates of the economic impact of the South Australian SZRL fishing industry on the South Australian and regional (Limestone Coast[6]) economies in 2010/11 are outlined below.

3.5.1 Measuring direct and flow-on effects

Estimates of the direct economic impact of the SZRL fishery are consistent with the method employed in PIRSA's *Value-added ScoreCard*, 2006/07[7].

The following stages in the marketing chain have, therefore, been included in the quantifiable economic impact:

- the landed beach value of production; and
- downstream impacts, including the:
  - net value of local (state and regional) processing;
  - value of local transport services at all stages of the marketing chain; and
  - net value of local retail and food service (e.g. hotels & restaurants) trade[8].

[6] The Limestone Coast region is consistent with the SA Government Region, as defined by the Department of Planning and Local Government.

[7] The relevant information was obtained from Rob Esvelt (PIRSA, pers. comm.).

[8] Estimates of economic impact prepared for this and other commercial fisheries in South Australia (except Lakes and Coorong) for the period 1997/98 to 2002/03 do not include the impact of local retail and food service trade; these effects have been included in subsequent years.

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 impacts at regional and state levels.

Economic impacts at the state and regional levels were based on models for the state as a whole and for the Limestone Coast region, respectively, prepared for the Department of Trade and Economic Development (EconSearch 2009b).

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 financial survey for 2010/11. On an item-by-item basis, the expenditures were allocated between those occurring in the Limestone Coast region, those occurring in South Australia and those goods and services imported from outside the state.

Estimates of the net value of local (i.e. regional and state) processing margins and retail and food service trade margins were derived from PIRSA's *value-added ScoreCard* (*Seafood Scorecard, 2006/07*) (Rob Esvelt, PIRSA, pers. comm.). Estimates of the net value of local transport margins and capital expenditure per licence holder were derived from the survey of licence holders.

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

- value of output;
- employment;
- household income; and
- 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 impacts at the state and regional levels

Estimates of the economic impact generated in 2010/11 by the SZRL fishing industry in South Australia and the Limestone Coast region are outlined in Tables 3.8 and 3.9, respectively.

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

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

Table 3.8 The economic impact of the SA Southern Zone Rock Lobster fishing industry in South Australia, 2010/11

Sector	Output		Employment [a]		Household Income		Contribution to GSP	
	($m)	%	(fte jobs)	%	($m)	%	($m)	%
Direct effects								
Fishing	67.0	35%	426	43%	19.4	37%	42.2	41%
Processing	7.2	4%	24	2%	1.6	3%	2.3	2%
Transport	7.3	4%	26	3%	1.7	3%	3.2	3%
Retail	1.1	1%	11	1%	0.4	1%	0.0	0%
Food services	2.3	1%	15	2%	0.6	1%	1.0	1%
Capital expenditure [b]	2.7	1%	22	2%	0.9	2%	1.2	1%
Total Direct [c]	*87.6*	*45%*	*525*	*50%*	*24.6*	*45%*	*49.9*	*48%*
Flow-on effects								
Trade	15.8	8%	127	13%	5.2	10%	7.5	7%
Manufacturing	21.3	11%	99	10%	4.8	9%	6.9	7%
Business Services	12.6	7%	53	5%	4.4	8%	6.0	6%
Transport	6.7	4%	50	5%	1.6	3%	2.9	3%
Other Sectors	46.2	24%	147	15%	12.1	23%	28.1	28%
Total Flow-on [c]	*102.6*	54%	*476*	48%	*28.1*	53%	*51.4*	50%
Total [c]	**190.2**	**100%**	**1,001**	**100%**	**52.7**	**100%**	**101.8**	**99%**
Total/Direct	2.2	-	1.9	-	2.1	-	2.0	-
Total/Tonne	$152,800	-	0.80	-	$42,300	-	$81,800	-

[a] Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 299 full-time jobs and 341 part-time jobs, that is, 640 jobs in aggregate, which was estimated to be equal to 426 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: EconSearch analysis

Table 3.9 The economic impact of the SA Southern Zone Rock Lobster fishing industry in the Limestone Coast region, 2010/11

Sector	Output		Employment [a]		Household Income		Contribution to GSP	
	($m)	%	(fte jobs)	%	($m)	%	($m)	%
Direct effects								
Fishing	67.0	54%	426	58%	19.4	57%	42.2	60%
Processing	7.2	6%	19	3%	1.5	4%	2.4	3%
Transport	1.4	1%	6	1%	0.4	1%	0.6	1%
Retail	0.1	0%	1	0%	0.0	0%	0.0	0%
Food services	0.1	0%	1	0%	0.0	0%	0.0	0%
Capital expenditure [b]	1.9	2%	21	3%	0.7	2%	1.0	1%
Total Direct [c]	*77.7*	*61%*	*474*	*62%*	*22.0*	*62%*	*46.2*	*64%*
Flow-on effects								
Trade	10.4	8%	92	13%	3.5	10%	5.0	7%
Manufacturing	8.6	7%	56	8%	1.8	5%	2.9	4%
Business Services	3.5	3%	16	2%	1.1	3%	1.6	2%
Transport	2.9	2%	20	3%	0.8	2%	1.3	2%
Other Sectors	21.6	17%	71	10%	4.9	14%	13.6	19%
Total Flow-on [c]	*47.0*	38%	*255*	35%	*12.1*	36%	*24.4*	35%
Total [c]	**124.7**	**100%**	**729**	**100%**	**34.2**	**100%**	**70.6**	**100%**
Total/Direct	1.6	-	1.5	-	1.6	-	1.5	-
Total/Tonne	$100,200	-	0.59	-	$27,400	-	$56,700	-

[a] Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 299 full-time jobs and 341 part-time jobs, that is, 640 jobs in aggregate, which was estimated to be equal to 426 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: EconSearch analysis

Value of output...

The value of output generated directly in South Australia and the Limestone Coast region by SZRL fishing enterprises summed to $67.0 million in 2010/11 (Table 3.8), while output generated in South Australia by associated downstream activities (processing, transport, retail/food services and capital expenditure) summed to $20.6 million ($10.7 million in the Limestone Coast region, Table 3.9).

Flow-ons to other sectors of the state economy added another $102.5 million in output ($47.0 million in the regional economy). The sectors most affected were the manufacturing, trade, business services and transport sectors. The total output impact in SA (direct plus indirect) was estimated to be $190.1 million in 2010/11 ($124.7 million in the Limestone Coast region).

Employment and household income...

In 2010/11, the SZRL fishery was responsible for the direct employment of around 426 full-time equivalents (fte) and downstream activities created employment of around 99 fte jobs state-wide. Flow-on business activity was estimated to generate a further 476 fte jobs state-wide (255 jobs regionally). These state-wide jobs were concentrated in the trade (127), manufacturing (99), business services (53) and transport (50) sectors. The total employment impact was estimated to be 1,001 fte jobs in SA (735 fte jobs regionally) in 2010/11 (Table 3.8 and Table 3.9).

Personal income of $19.4 million was earned in the fishing sector (wages of employees and estimated drawings by owner/operators) and $5.2 million in downstream activities in SA. An additional $28.1 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 impact was $52.7 million in SA ($34.2 million in the Limestone Coast region) (Table 3.8 and Table 3.9).

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 2010/11, total SZRL fishing industry related contribution to GSP in South Australia was $101.8 million ($70.6 million in the Limestone Coast region), $42.2 million generated by fishing directly, $7.7 million generated by downstream activities ($4.0 million in the Limestone Coast region) and $51.4 million generated in other sectors of the state economy ($24.4 million in the Limestone Coast region).

Total impacts over time…

Figures 3.5 and 3.6 illustrate the total economic impact of the fishery on the SA economy for the 14 years, 1997/98 to 2010/11. Estimates of economic impact are expressed in nominal terms, which means that no adjustment has been made for inflation.

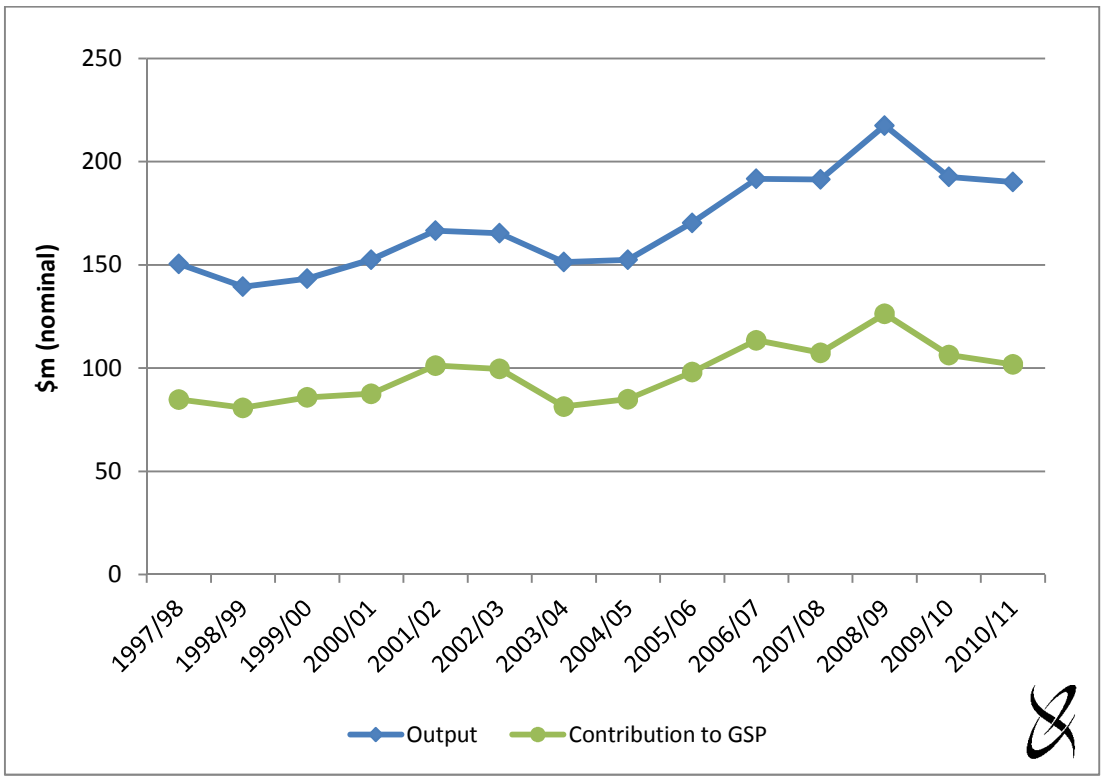
Estimates of economic impact for 1997/98 to 1999/00 are based on the October 1998 survey of licence holders. Estimates for 2000/01 to 2003/04 are based on a second survey of licence holders conducted in October 2001. Estimates for 2004/05 to 2006/07 are based on the survey of licence holders conducted in March – April 2006. Estimates for 2007/08 and 2009/10 are based on the survey of licence holders conducted in January – February 2009. Those estimates for 2010/11 are based on the most resent licence holder survey conducted in April - July 2012.

As economic impact estimates for the years 1997/98 to 2010/11 are based on different survey samples and techniques, some of the variability between years, is therefore, attributable to sampling variability.

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

The change in total output and GSP impacts are closely related to changes in price and fishery GVP (Figure 3.5). There has been an overall decline in direct employment impact of the fishery since 1997/98, as illustrated in (Figure 3.6). This is due to a decrease in the number of active boats in the fishery.

Figure 3.5 Total gross state product and output impact of the SA Southern Zone Rock Lobster fishing industry in SA, 1997/98 to 2010/11 [a]

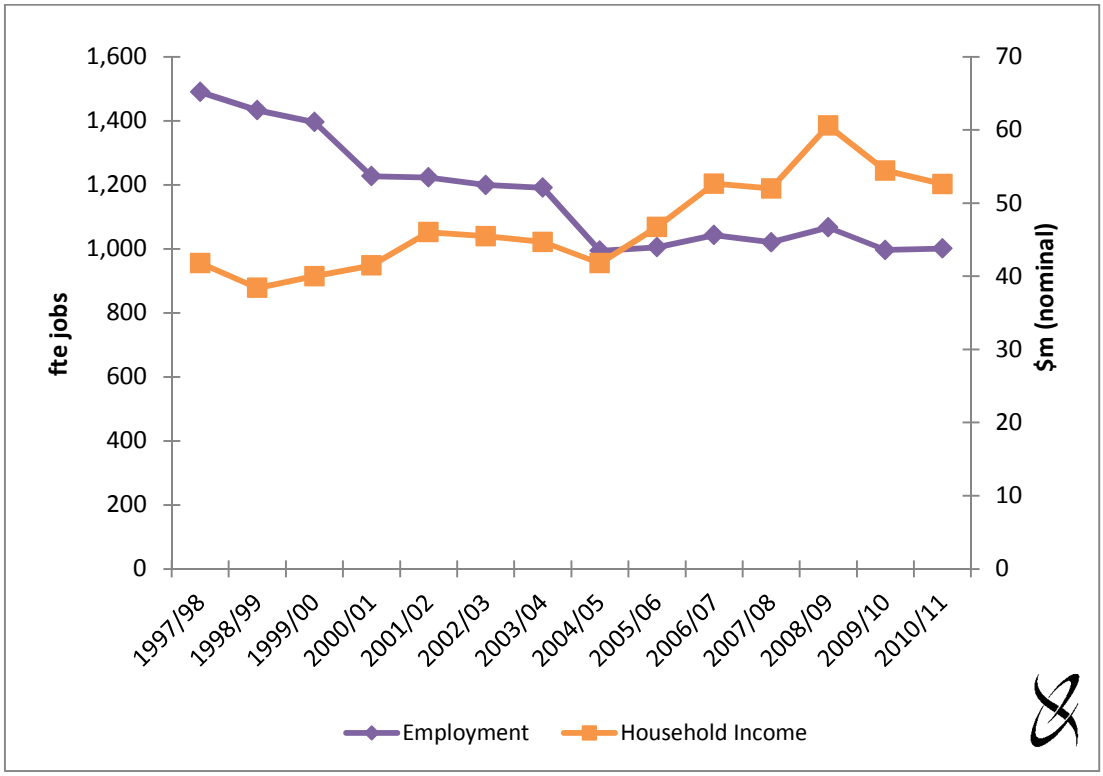


[a] The economic impact of the Southern Zone Rock Lobster fishery in 1997/98 and 1998/99 does not include the direct and flow-on effects of estimated capital expenditure by licensees; these effects have been included in subsequent years. Estimates of economic impact for the period 1997/98 to 2002/03 do not include the impact of local retail and food service trade; these effects have been included in subsequent years.

Source: EconSearch (2009b) and EconSearch analysis

There has been a substantial decline (approximately 33 per cent) in the total employment impact of the fishery between 1997/98 and 2010/11, as illustrated in Figure 3.6. This decrease can be attributed to productivity improvements across all sectors.

Figure 3.6 Total employment and household income impact of the Southern Zone Rock Lobster fishing industry in SA, 1997/98 to 2010/11 [a]



[a] See note for Figure 3.5.
Source: EconSearch (2009b) and EconSearch analysis

3.6 Economic Rent

Economic rent[9] is 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 SZRL fishery and the good produced is the landed lobster.

The long term costs all need to be covered if the licence holder is to remain in the fishery. These long-term costs include direct operating costs such as fuel, labour (including the opportunity cost of a self employed fisher's own labour), bait, 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.

[9] 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.

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

Given the relatively high-risk nature of the industry (weak property rights therefore short time horizons, exposure to exchange rate fluctuations, general price volatility, problems of resource sustainability and political risk in export countries) an argument could be made for a higher required rate of return.

What remains after the value of these inputs (labour, capital, materials, services) has been netted out is the value of the natural resource itself. The economic rent generated in the SZRL fishery in 2010/11 was estimated to be approximately $9 million, a decrease on 2009/10 (Table 3.1).

When an economic rent is generated in a fishery and there are transferable licences, the rent represents a return to the value of the licences. The 2010/11 aggregate value of licences was estimated to be $563.7 million (181 licences with an average value of $3.1 million per licence or $42,000 per pot). An annual economic rent of $9 million represents a return of 2.9 per cent to the capital value of the fishery.

Table 3.10 Economic rent [a] in the SA Southern Zone Rock Lobster fishery, 1997/98 to 2010/11 ($'000)

	Gross Income	Less Labour	Less Cash Costs	Less Depreciation	Less Opportunity Cost of Capital (@10%)	**Economic Rent**
1997/98	50,872	19,495	13,851	4,887	4,285	**8,353**
1998/99	47,165	18,686	12,014	4,921	4,315	**7,230**
1999/00	51,163	20,764	11,031	4,981	4,367	**10,020**
2000/01	54,738	19,325	13,516	7,142	5,162	**9,593**
2001/02	65,671	23,771	12,913	6,901	4,988	**17,098**
2002/03	63,838	24,031	12,792	8,018	5,795	**13,202**
2003/04	49,319	19,497	13,899	7,975	5,765	**2,183**
2004/05	54,397	15,060	13,319	8,303	6,091	**11,625**
2005/06	65,737	18,620	14,851	7,806	5,726	**18,734**
2006/07	78,919	22,970	16,425	8,024	5,886	**25,614**
2007/08	75,731	21,330	20,710	6,593	6,514	**20,583**
2008/09	85,371	24,949	22,106	6,668	6,589	**25,058**
2009/10	70,720	21,460	21,958	6,757	6,676	**13,869**
2010/11	67,020	18,944	22,998	8,764	7,000	**9,313**

[a] Adjusted for sample bias.
Source: EconSearch analysis

4. Other Indicators

4.1 Factors Influencing the Economic Condition of the Fishery

There are a number of factors in 2010/11 that have impacted on the economic performance of the fishery. Most of these are likely to continue to affect economic outcomes in the future.

Stock status

In 2011, SARDI published a report on the current biological status of commercial fishery in SA (Linnane et al. 2011). It was stated in this report that there was clear evidence of a decline between 2003 and 2009. The fishery appears to be recovering but the report also states that current recruitment requires further protection, and future catch rates will continue to be closely monitored. The report of the biological status of SA commercial fisheries is scheduled to be updated and published every two years.

Stock assessment

The priority of the management of the fishery is to ensure the sustainability of Rock Lobster stocks in South Australia. In order to achieve this, biological indicators have been developed with targets and reference points used as a benchmark of performance against objectives. Reference points can be used to trigger a management response when required. A new management plan for the fishery was introduced in September 2007, which has refined the performance indicators and reference levels. In particular, the management plan focuses on two key performance indicators, catch rate and pre-recruit index.

The SZRL fishery biological performance indicators for the seasons 2003/04 to 2010/11 are summarised in Table 4.1. In 2003/04, the TACC was increased from 1,770 tonnes to 1,900 tonnes. Since this increase in TACC, catch rates have steadily declined from 1.8 kg per pot lift to 0.6 kg per pot lift in 2009/10. Although the catch rate increased in 2010/11 to 0.9 kg per pot lift.

Table 4.1 Biological performance indicators for the SA Southern Zone Rock Lobster fishery, 2003/04 to 2010/11

Indicator	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Catch (tonnes)	1,896	1,897	1,889	1,894	1,850	1,407	1,243	1,244
Catch Rate (kg/pot lift)	1.8	1.8	1.6	1.4	1.1	0.7	0.6	0.94
Pre-recruit Index [a]	1.33	1.31	1.03	1.44	0.69	0.88	1.09	1.47.

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

Source: Linnane et. al (2004, 2005, 2006, 2008, 2009b and 2010 and 2011)

Export markets

The volume and value of Rock Lobster exports from South Australia have decreased significantly since 2007/08 (59 per cent decrease in volume and 40 per cent decrease in value). Hong Kong, Japan and China remain the main export destinations for SA Rock Lobster exports, as outlined in Section 4.3. However, these markets have seen significant changes, in terms of volume and value of exports, since 2007/08. Exports of SA Rock Lobster to Hong Kang and Japan have fallen significantly (92 per cent and 67 per cent, respectively, by volume). Conversely, exports of SA Rock Lobster to China have risen considerably (volume has increased by 255 per cent) since 2007/08. One possible reason for this is that less Rock Lobster is going to China via Hong Kong to avoid tariffs after a crackdown by Chinese officials in late 2010.

Factors that will continue to impact exports to these markets include the higher Australian dollar (see detail below), economic growth in China, import tariffs and competition from lower-cost product (Southern Rock Lobster from South Africa and Tropical Rock Lobster from Cuba and Vietnam).

The Australian Southern Rock Lobster industry is currently undertaking a market development project in the US. The project focuses on the development of supply chain, distribution and communication tools to facilitate penetration into the Super-Premium-Fine-Dining (SPFD) sector.

Through product trials and training it is intended that the project will provide an avenue for entry into the US's SPFD sector through:

- establishing the capacity to guarantee a product to the marketplace in accordance with market values / meeting specifications;
- establishing the capacity to deliver quality product to the marketplace on a consistent basis;
- creating the most effective communication tool to engage the marketplace; and
- trialling the standards based supply chain management system to deliver the "Ultimate Offer and Guarantee" to the SPFD sector at an increased value per lobster.

The project is focused on the supply of larger lobsters, 2kg plus, into the high-end of the USA fine dining market, as opposed to the smaller product currently supplied to the Chinese market.

Exchange Rate

A significant proportion of the South Australian Rock Lobster catch is exported overseas. Accordingly, the value of the Australian dollar can have a significant impact on the economic performance of the fishery. The value of the Australian dollar influences the price of Australian exports overseas. Significant changes in the value of the Australian dollar have the potential to influence the demand for Australian Rock Lobster exports. The Australian dollar generally followed an increasing trend throughout 2010/11 rising from US87 cents in July 2010 to US106 cents in June 2011.

The average exchange rate in 2010/11 was US 98 cents, an increase of 12 per cent compared to the average for the previous year (Figure 4.1). Other things held equal, a rise in the value of the currency would have the effect of decreasing the price of Rock Lobster received by Australian exporters between 2009/10 and 2010/11.

A widely used measure of the relationship between two variables, such as price and exchange rate, is the coefficient of correlation. The coefficient of correlation can range in value from 1.0 for a perfect positive correlation to –1.0 for a perfect inverse correlation. The coefficient of correlation between the exchange rate (USD) and the average price in the SZRL fishery for the period 1997/98 to 2010/11 is 0.58. This runs counter to expectations, and is likely due to the effect of other factors, such as an increase in the wealth and size of the middle class in China, on the Rock Lobster price.

The relationship between the average price in the SZRL fishery and the exchange rate (USD) between 1997/98 and 2010/11 can be observed in Figure 4.1. This figure shows that both exchange rate, and Rock Lobster Price trend upwards over the period, but that year to year movements in exchange rate tend to be in the opposite direction to movements in price.

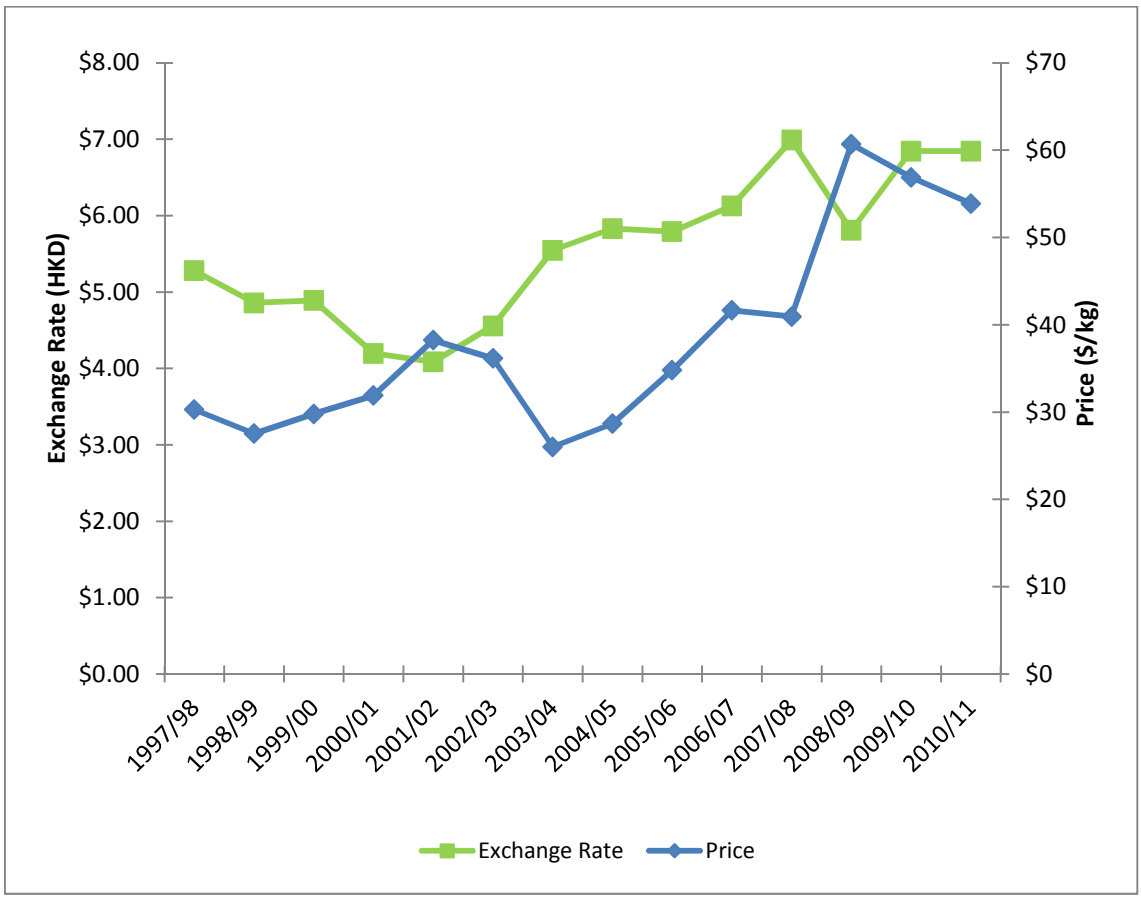
Figure 4.1 Exchange rate (USD) and average price for SA Southern Zone Rock Lobster, 1997/98 to 2010/11

Source: SARDI Aquatic Sciences and RBA (2010b) and previous issues

Historically, the most significant export destination for South Australian Rock Lobster exports has been Hong Kong. Thus it may be useful to compare the value of the Australian dollar with the Hong Kong dollar (HKD). The relationship between the price of Rock Lobster and the exchange rate over the past 14 years can be readily observed in Figure 5.7. Similar to the USD, the long term upward trend in Rock Lobster Price and exchange rates creates a positive coefficient of correlation (0.48), but the year to year trends show the expected inverse relationship.

The average rate of exchange in 2009/10 was 6.85 HKD increasing to 7.68 (HKD) in 2010/11.

Figure 4.2 Exchange rate (HKD) and price for Southern Zone Rock Lobster, 1997/98 to 2010/11



Source: SARDI Aquatic Sciences and RBA (2010b) and previous issues

4.2 Licence Holder Comments

During the 2012 survey licence holders raised several key issues that have potential to affect the economic performance of the fishery.

Management

Several fishers remarked that the management of the fishery was inefficient. Some felt that those in charge of making decisions, PIRSA, failed to consult adequately with scientists and fishermen. Several fishers remarked on the rapid turnover of government officials and fisheries managers, pointing out that it wasn't possible for them to gain a good understanding of the fishery in a short time frame. Several licence holders pointed out the need for more primary research, in particular into the effects of phenomena like the Bonnie upwelling.

Many fishers remarked with concern upon the continuing increase in licence fees. Many fishers felt the focus of fisheries management could be improved and the implementation of fisheries management could be conducted more cost effectively and efficiently. Some licence holders felt that there was much more paperwork than necessary in the fishery and that the number of publications was in excess of what was needed. Some fishers felt these resources would be better directed towards monitoring illegal activity, in particular from the recreational sector.

There was also frustration about the lack of predictability in the quota system. Several fishers had made large capital investments, such as buying bigger boats or more pots, which were significantly reduced in value when quota was reduced.

A few fishers commented on the fact that State and Commonwealth fisheries are separately managed, and highlighted the importance of these fishery managers continuing to work towards improving their communication.

A few licence holders also remarked on the political process leading to the opening of the fishing season in May. They suggested that opening May to fishing was a poor decision made for the wrong reasons, and that only a minority of licence holders wanted this month to be open. They suggested that this extra month was of little benefit to most fishers and keeping it closed allowed stocks extra time to rebuild.

Stocks

Several fishers remarked that lot of damage was done to the fishery when the quota went up to 1,900 tonnes. It was generally felt that this was unsustainable. There were concerns expressed about following the collapse of the Victorian fishery if the quota was allowed to rise again. However, some fishers felt the current TACC was too low and some felt it should be allowed to increase somewhat.

Several fishers suggested the total allowable catch was the wrong mechanism for controlling fish stocks. They suggested that reducing TACC created localised over fishing in the easy to get to areas and that a limit on the number of pots would be more effective than a limit on catch.

Some fishers commented on the uneven distribution of effort in the fishery. Two different elements of the 'spatial management' problem were mentioned. One was a tendency for the majority of fishers to concentrate their effort at either the Southern end (near Pt Mac Donald) or the Northern end (near Robe and Kingston) for a season, in response to localised degradation and recovery of fish stocks.

Illegal fishing

Some licence holders who participated in the survey highlighted illegal fishing as a significant threat to the sustainability of the fishery's stocks. The concerns raised were generally in regard to the recreational sector, with many licence holders indicating that this sector was under-regulated.

Marine parks

It was commonly felt that fishing practices had minimal negative environmental impact and marine parks were not needed. Several licence holders explained that they had a strong interest in protection of the marine environment as their livelihoods depended directly upon it. They felt that marine parks would not create an environmental benefit, but would have negative economic and social implications for the fishery. It was also suggested that as the South Australian fisheries were already heavily managed, it was redundant to put marine parks there. Licence Holders pointed out that there are many more poorly managed fisheries world wide.

Particular concerns about marine parks were:

- Introduction of marine parks will put pressure on the fishing grounds that are not in the protected areas.
- It will not be possible for government to adequately compensate for damage done to fishing business, by the introduction of marine parks and the associated restrictions in fishing access.
- Rock Lobster pots don't do any damage to the marine vegetation. Thinking that they do, is a misconception.

The majority of licence holders felt that marine parks would fail to achieve environmental objectives and would also create a negative social and economic impact on the fishery.

Licence holders indicated that the introduction of marine parks would result in them having to move to different fishing grounds. There are costs associated with getting to know new fishing grounds such as time (labour) and fuel.

Prices for catch

Several licence holders commented that the price for Rock Lobster had a significant effect on the viability of the operations. Several licence holders mentioned the attempts to control the export price by Hong Kong in 2009/10.

Personal Income

A few licence holders commented on the misconceptions of the lifestyle of fishermen. In particular, they remarked that people could easily see the high gross income from running a fishing business, but that the costs (also high) were not as obvious. In particular several fishers mentioned that high interest payments were a challenge for the ongoing viability of the business.

Some fishers in family businesses remarked that the income from their licence(s) and fishing business was the primary source of income for several family members, often including several generations and extended family. This suggests a high level of dependence on the ongoing sustainability of the resource and the ability to continue to use the resource.

4.3 Rock Lobster Exports from South Australia

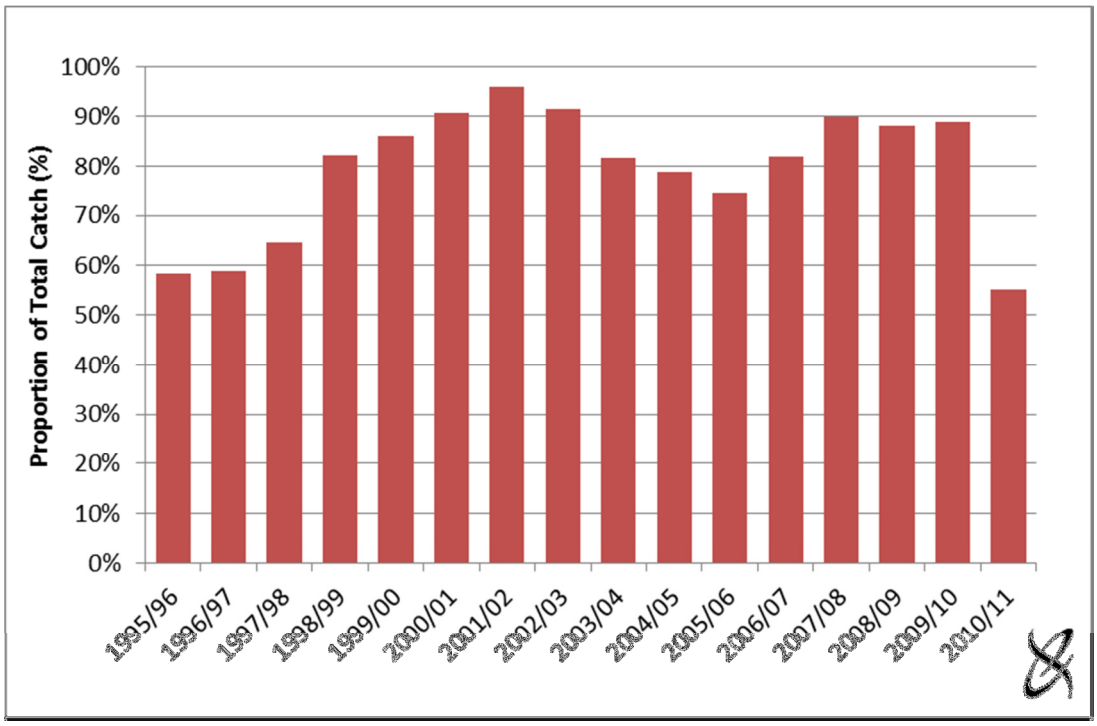
Figures 4.3 to 4.7 and the associated data in Appendix Tables 2.1 to 2.4 provide a historical breakdown of total Rock Lobster exports from SA, by category and country of destination, for the period 1995/96 to 2010/11[10].

As a proportion of total Rock Lobster catch, Rock Lobster exports from South Australia increased from 58 per cent in 1995/96 to over 95 per cent in 2001/02. The proportion of catch exported declined between 2001/02 and 2004/05 (74 per cent), but increased between 2004/05 and 2009/10 (89 per cent). Exports as a proportion of total Rock Lobster catch from SA fell significantly in 2010/11 to 55 per cent (Figure 4.2).

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

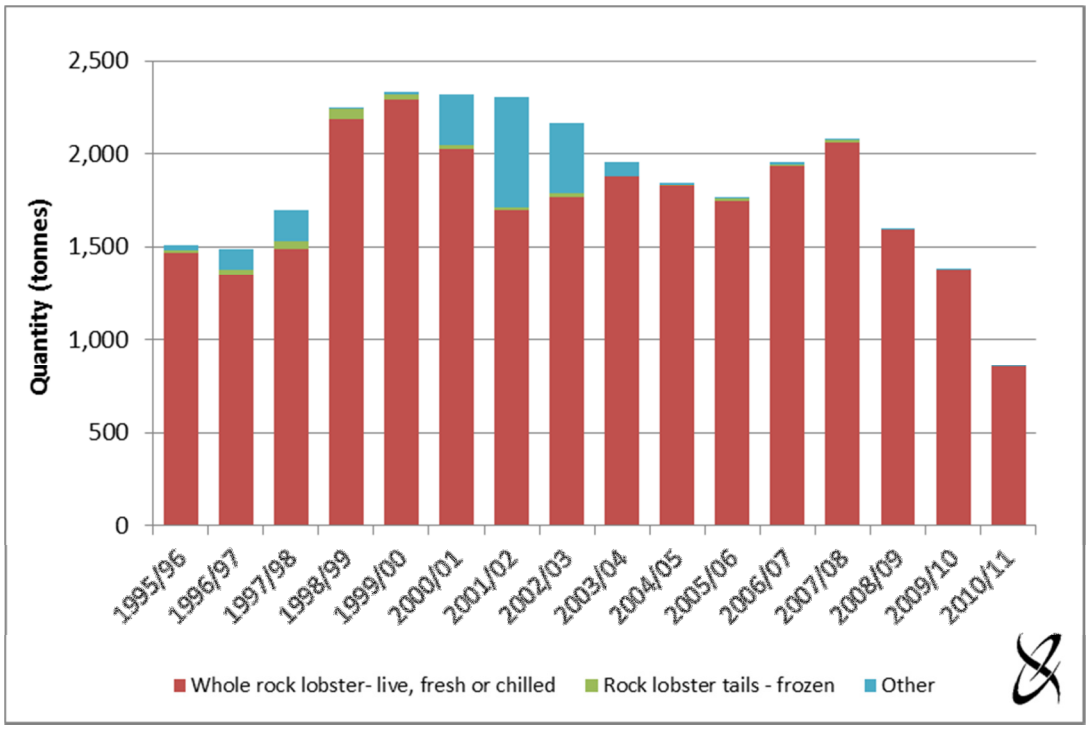
Between 1995/96 and 2001/02, the total quantity of Rock Lobster exported from SA increased by approximately 52 per cent. The volume of Rock Lobster exports has generally decreased between 2001/02 and 2010/11 despite an upturn in 2006/07 and 2007/08. The total quantity of Rock Lobster exported from SA in 2010/11 was 857 tonnes (Figure 4.4 and Figure 4.6).

Figure 4.3 Rock Lobster exports from South Australia as a proportion of total catch, 1995/96 to 2010/11



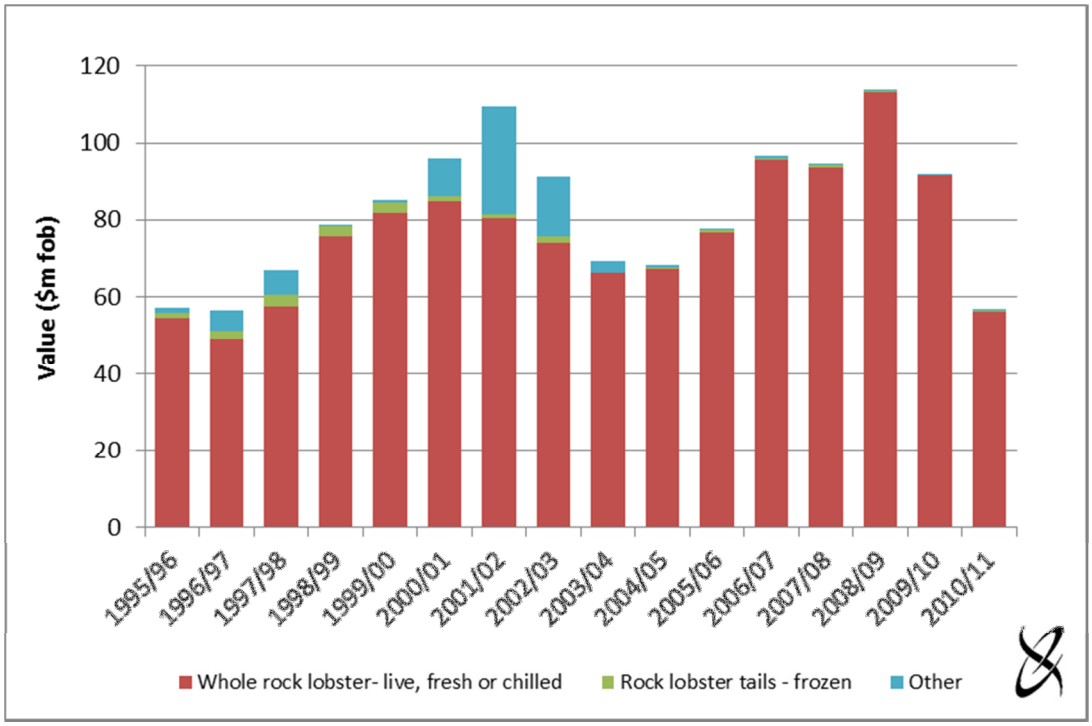
Source: Appendix Table 2.1 and Table 3.1

Figure 4.4 Rock Lobster exports from South Australia, quantity (t) by category, 1995/96 to 2010/11



Source: Appendix Table 2.1

Figure 4.5 Rock Lobster exports from South Australia, value ($m fob) by category, 1995/96 to 2010/11



Source: Appendix Table 2.2

The total value of Rock Lobster exports increased in nominal terms by approximately 92 per cent between 1995/96 and 2001/02. The value of exports declined by approximately 38 per cent between 2001/02 and 2004/05. Export value increased between 2004/05 and 2008/09, by around 67 per cent but has decreased in subsequent years. In 2010/11, the total value of Rock Lobster exports from SA decreased and was approximately $56 million (Figures 4.4 and 4.6).

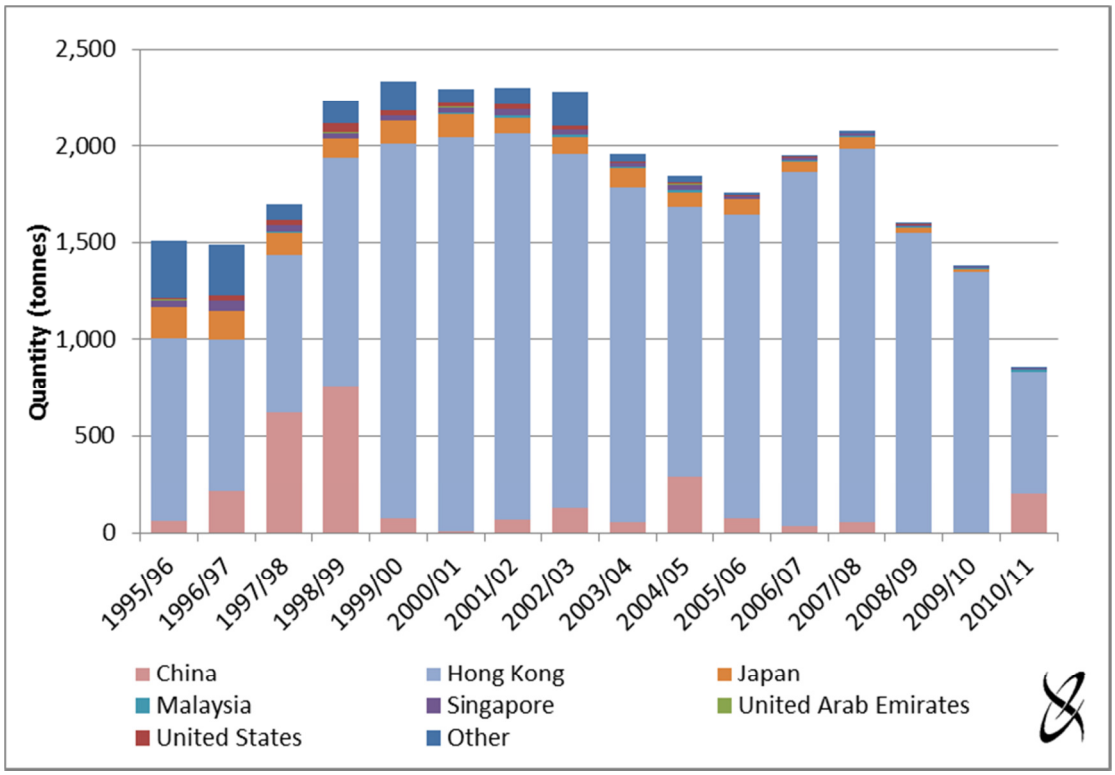
Whole Rock Lobster (live, fresh or chilled) was the most significant category of export in all years of the analysis, accounting for, on average, 94 per cent of total exports by quantity and 93 per cent of total exports by value over the period of analysis (Figure 4.3 and Figure 4.4). For a full breakdown of exports by category refer to Appendix Tables 2.1 and 2.2.

The most significant export destination over the period 1995/96 to 2010/11 was Hong Kong, accounting on average for 79 per cent of the total quantity and 78 per cent of the total value of exports of Rock Lobster (Figures 4.5 and 4.6). However, in 2010/11, whilst Hong Kong was still the most significant destination (74 per cent of quantity and 76 per cent of value), China was accounted for 23 per cent of the total quantity and 22 per cent of the total value. For a full breakdown of exports by country of destination refer to Appendix Tables 2.3 and 2.4.

The demand for seafood from countries within the EU has increased rapidly over the last decade and it has become the world's leading seafood export destination. The demand for seafood and the consumer base of the EU is likely to continue to grow in the future (MCCN May 2005). Currently Rock Lobster exports to EU member countries are minimal.

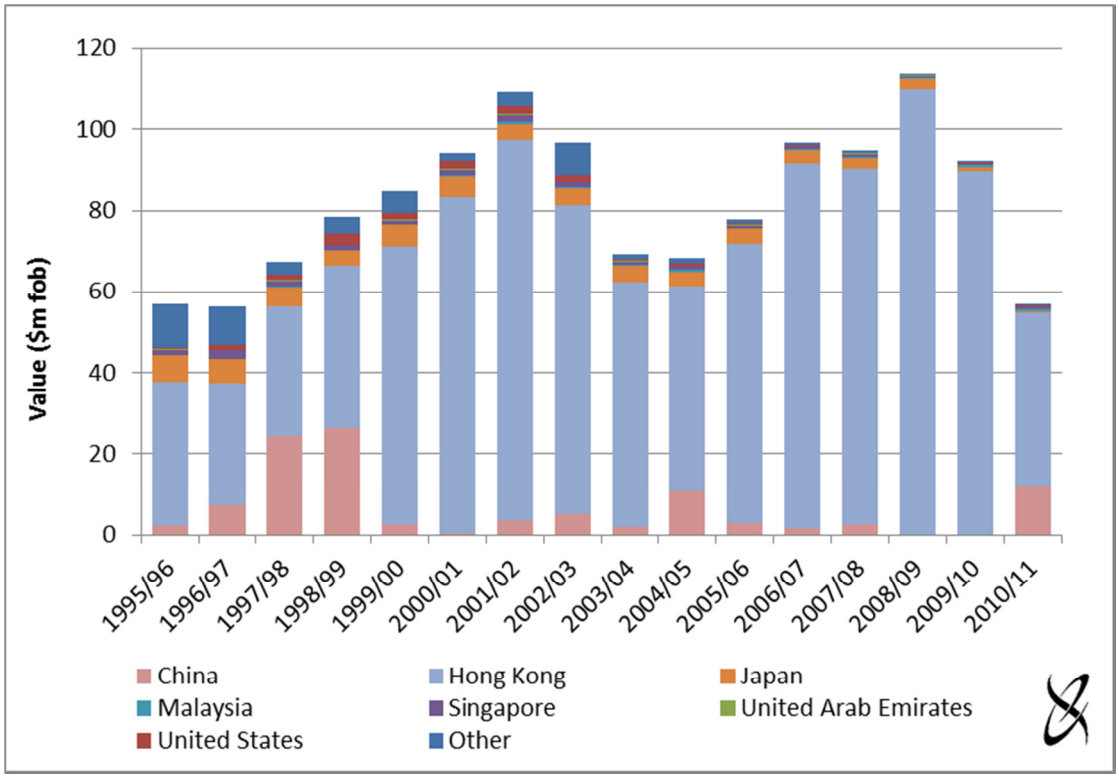
Following trials in London and the Napa Valley, lobster exporters are pushing for increased exports to the United Kingdom (UK) and US. Currently, the majority of lobster exports are to Hong Kong and China (Figure 4.6 and Figure 4.7), a large proportion of the exports to Hong Kong are then transported illegally to China to avoid tariffs. A move away from these destinations towards new markets could lead to a significant increase in the value of exports (MCCN March 2005).

Figure 4.6 Rock Lobster exports from South Australia, quantity (t) by country of destination, 1995/96 to 2010/11



Source: Appendix Table 2.3.

Figure 4.7 Rock Lobster exports from South Australia, value ($m fob) by country of destination, 1995/96 to 2010/11



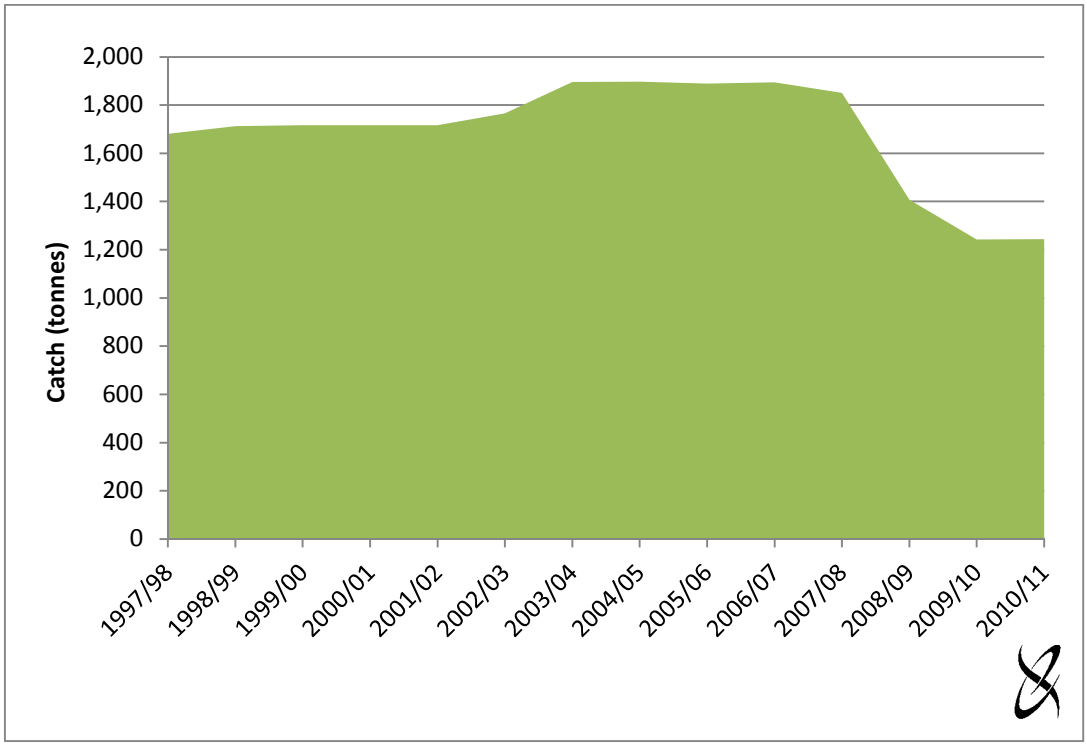
Source: Appendix Table 2.4

5. Summary

Catch and Gross Value of Production…

The data shown in Figure 5.1 indicates that total catch in the fishery followed an increasing trend between 1997/98 and 2003/04 but declined in subsequent years. In 2010/11 total catch (1,244 tonnes) was 26 per cent below that in 1997/98 (1,680 tonnes) (Figure 5.1).

Figure 5.1 Southern Zone Rock Lobster fishery catch, 1997/98 to 2010/11



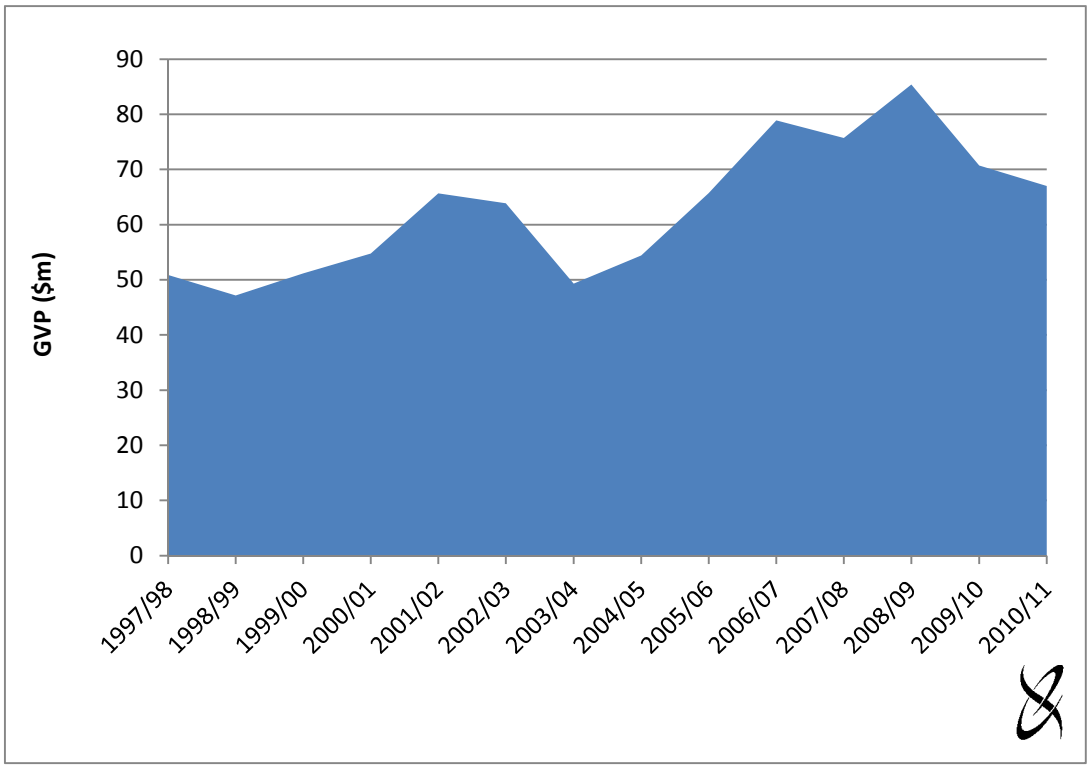
Source: See Table 3.1

The GVP for the Southern Zone Rock Lobster fishery for the period 1997/98 to 2010/11 is illustrated in Figure 5.2.

The value of catch in the Southern Zone Rock Lobster fishery fluctuated between years but has followed an increasing trend since 1997/98 despite a reduction in 2009/10 and 2010/11. The total value of catch in 2010/11 ($67.0 million) was 32 per cent higher than the value of catch in 1997/98 ($50.9 million). The increase in value is wholly attributable to an overall increase in price and despite a 26 per cent decline in catch (Figure 5.2).

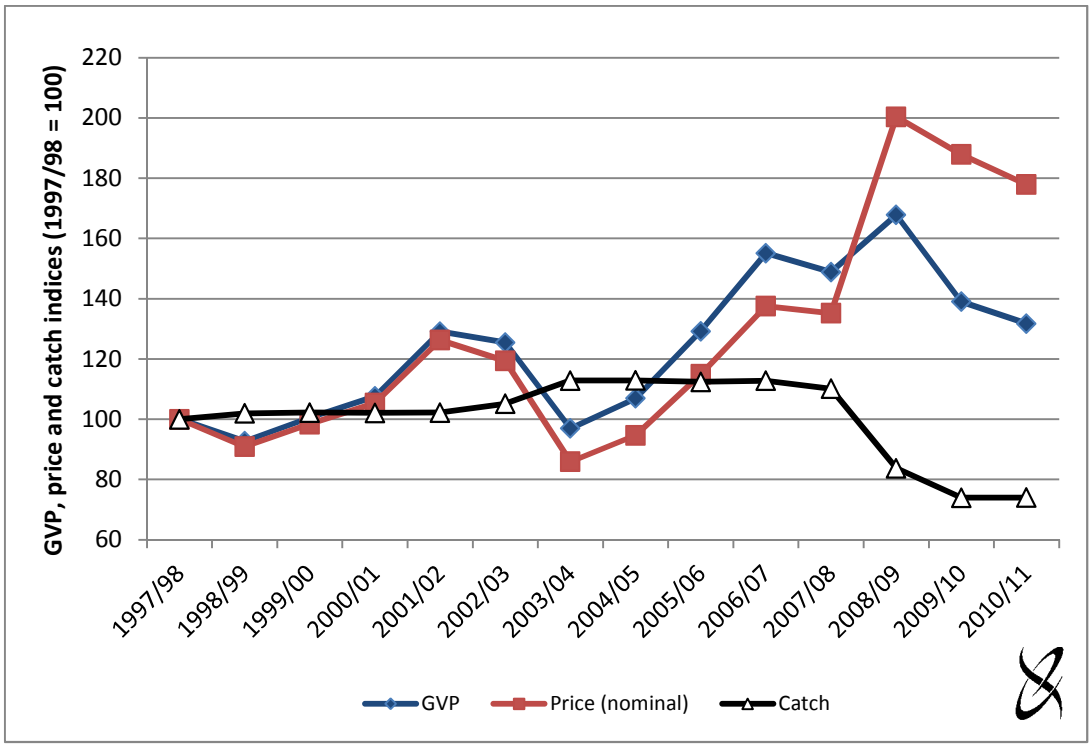
Catch, GVP and price indices for the fishery for 1997/98 to 2010/11 are illustrated in Figure 5.3. The average nominal price for Southern Zone Rock Lobster followed an increasing trend over the 14 year period (Figure 5.3).

Figure 5.2 Southern Zone Rock Lobster fishery GVP, 1997/98 to 2010/11



Source: See Table 3.1

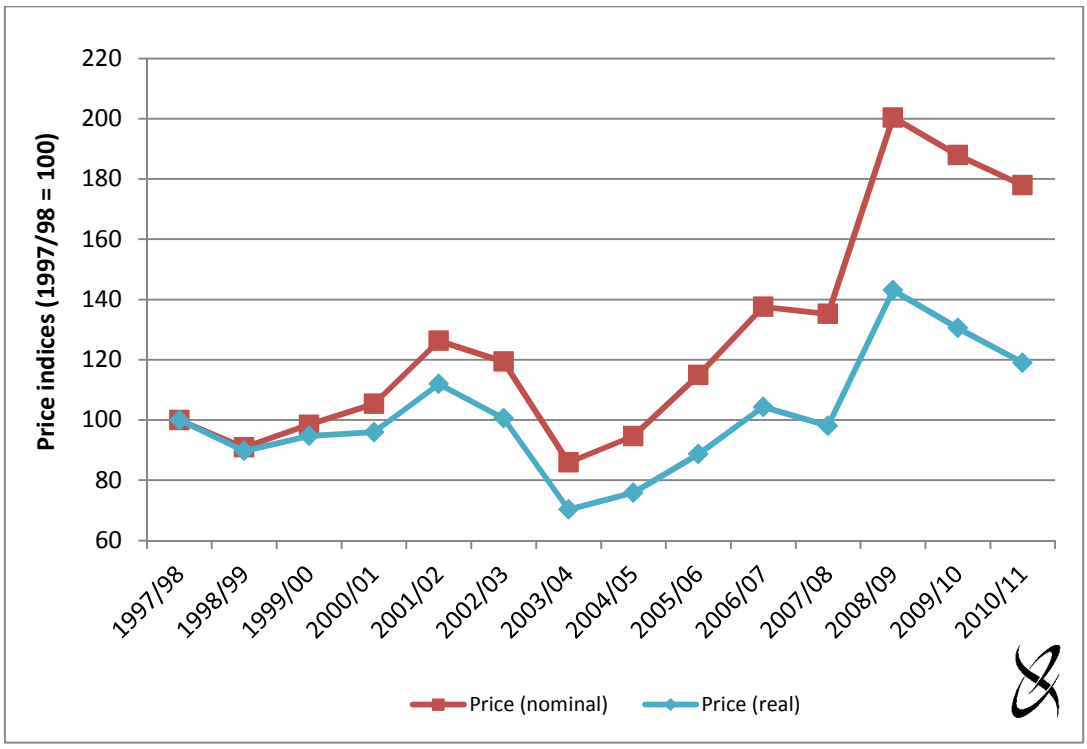
Figure 5.3 GVP, price and catch indices for the Southern Zone Rock Lobster fishery (1997/98=100)



Source: See Figure 3.1

Figure 5.4 shows that between 1997/98 and 2010/11 the 78 per cent increase in nominal average price of Southern Zone Rock Lobster was equivalent to a 19 per cent rise in real price.

Figure 5.4 Price indices for the Southern Zone Rock Lobster fishery (1997/98=100)[a]



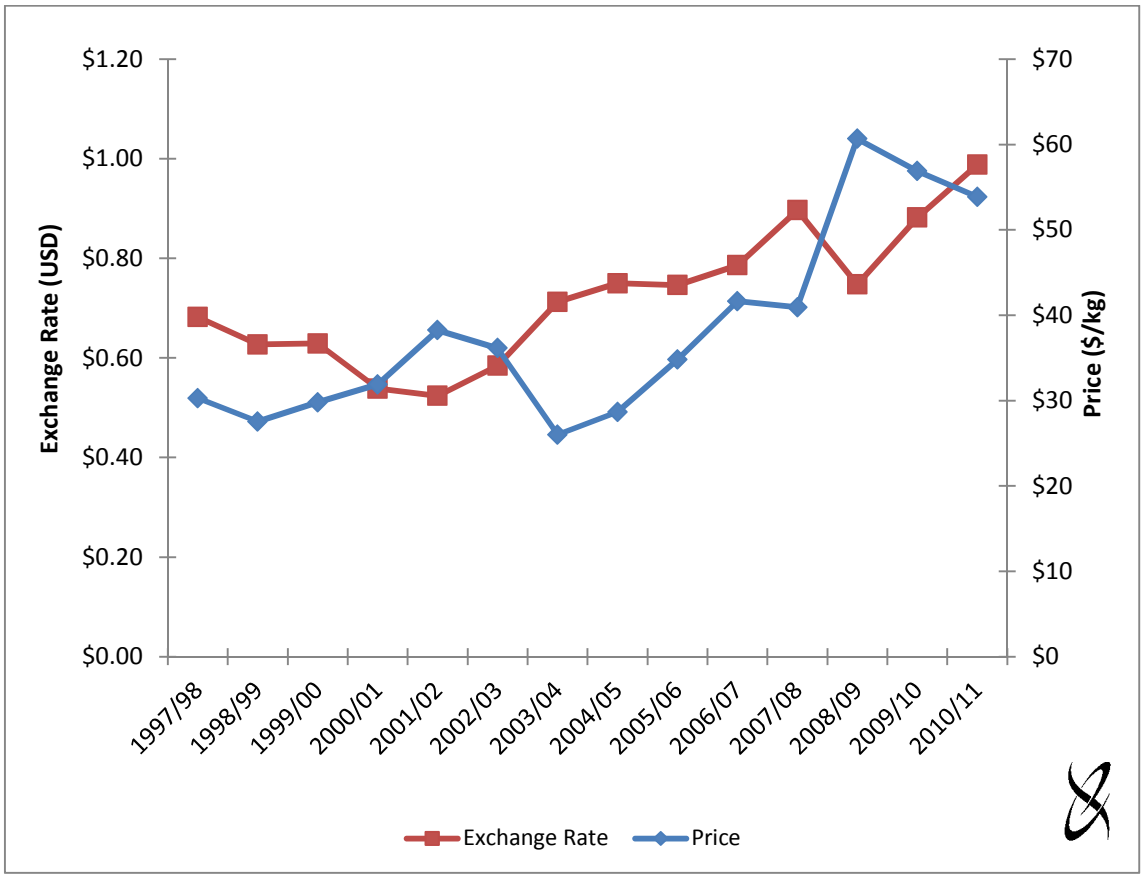
[a] Nominal price refers to the beach price in the current year's dollars. Real price is the nominal price adjusted for the purchasing power of money. The CPI (consumer price index) has been used to make this adjustment (ABS, 20011a). It enables meaningful comparisons of prices to be made between years.

Source: See Figure 3.2

A large proportion of SA Rock Lobster catch is exported overseas. Accordingly, the value of the Australian dollar (relative to the US dollar) has had a significant influence on the price for Rock Lobster and the value of catch in the fishery. The relationship between the price of Rock Lobster and the exchange rate over the past 14 years can be readily observed in Figure 5.5.

A widely used measure of the relationship between two variables, such as price and exchange rate, is the coefficient of correlation. The coefficient of correlation can range in value from +1.0 for a perfect positive correlation to -1.0 for a perfect inverse correlation. The coefficient of correlation between exchange rate (USD) and the price of Rock Lobster over the period 1997/98 and 2010/11 is 0.58. This indicates that there is no obvious inverse relationship between price and exchange rate. Inspection of the relationship over time, shows that while exchange rate and price both trend upwards, the year to year movements tend to be in opposite directions, as would be expected (Figure 5.5).

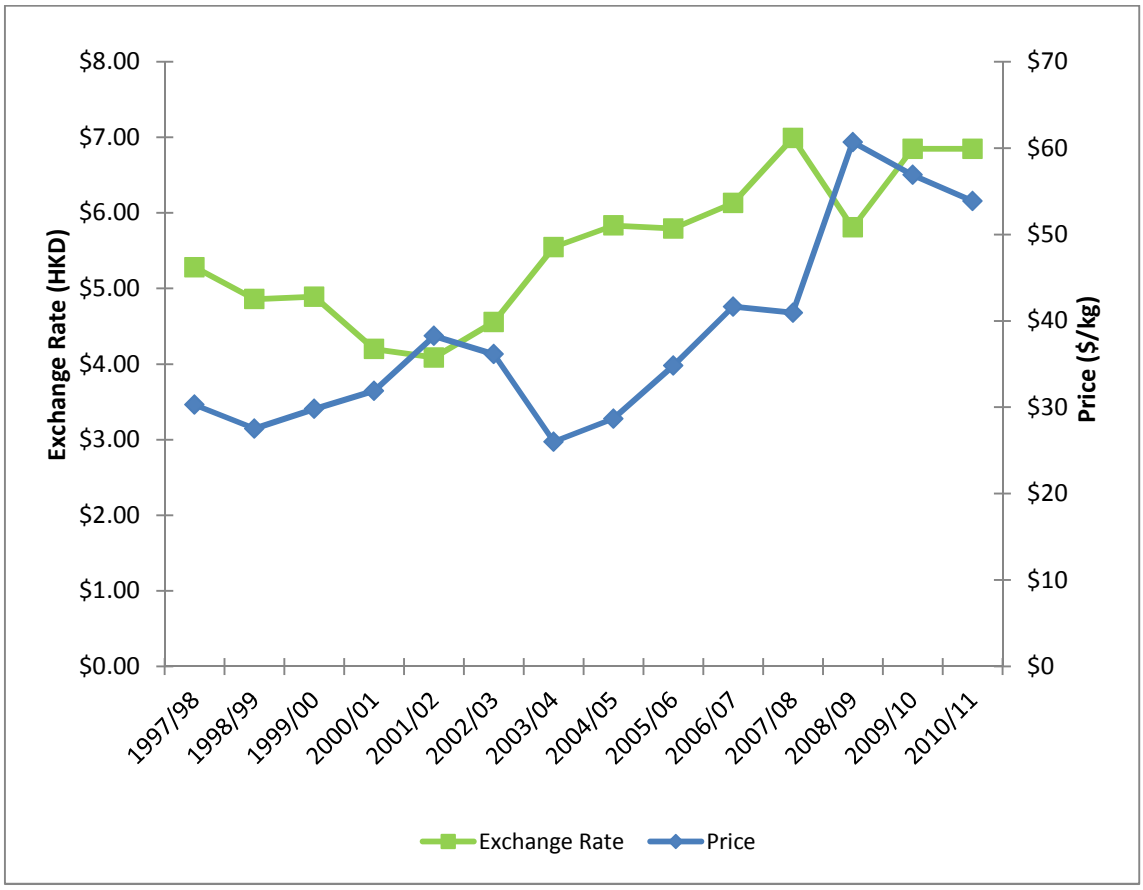
Figure 5.5 Exchange rate (USD) and price for Southern Zone Rock Lobster, 1997/98 to 2010/11



Source: See Figure 4.1

Historically, the most significant export destination for South Australian Rock Lobster exports has been Hong Kong. Thus it may be useful to compare the value of the Australian dollar with the Hong Kong dollar (HKD). The relationship between the price of Rock Lobster and the exchange rate over the past 14 years can be readily observed in Figure 5.6. Similar to the USD, the long term upward trend in Rock Lobster Price and exchange rates creates a weak positive coefficient of correlation (0.48), but the year to year trends show the expected inverse relationship.

Figure 5.6 Exchange rate (HKD) and price for Southern Zone Rock Lobster, 1997/98 to 2010/11



Source: See Figure 4.2

Management Costs…

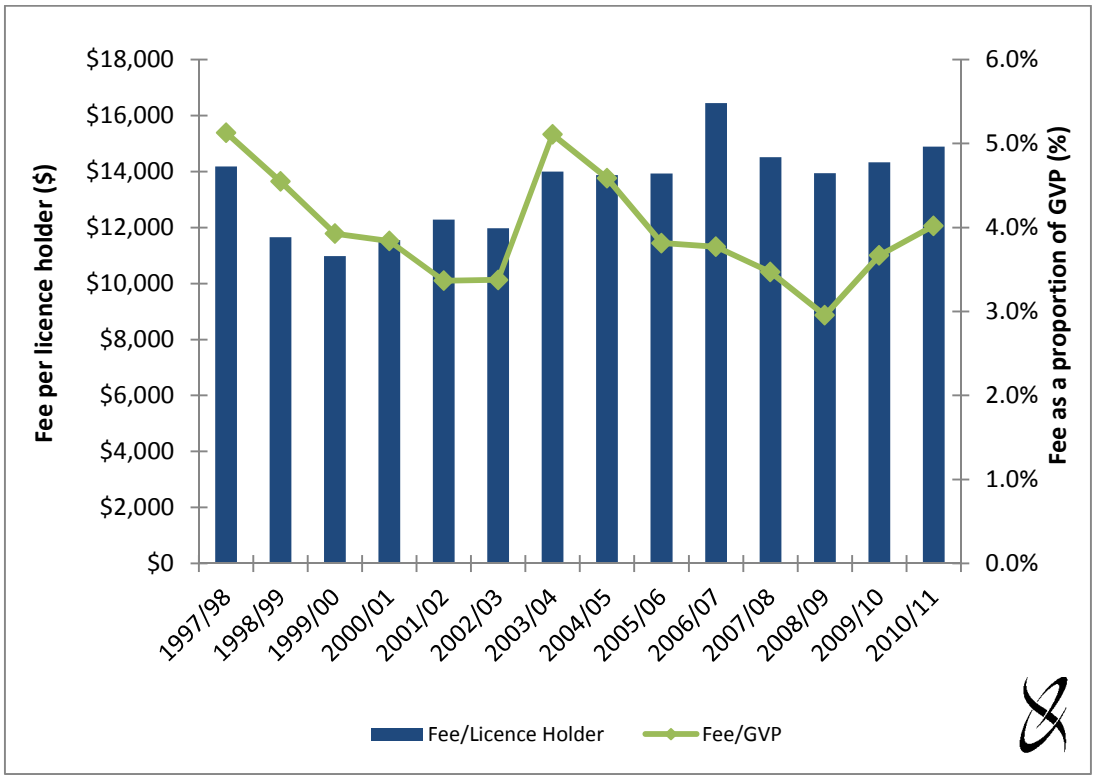
The average management fee per licence holder and the licence fee as a proportion of GVP are illustrated in Figure 5.7.

Licence fees as a percentage of GVP followed a declining trend between 1997/98 and 2002/03. In 2003/04 there was an increase in management costs and a decline in GVP and, as a result, the licence fee as a proportion of GVP increased significantly. Management costs as a percentage of GVP followed a declining trend in following years as a result of an increase in fishery GVP, until 2009/10 when a decrease in GVP led to an increase in Management costs as a percentage of GVP. Management costs as a percentage of GVP increased again in 2010/11, again as a result of decreasing GVP.

One of the limit reference points associated with achieving the economic objectives of the fishery is an increase in management costs as a percentage of GVP for two consecutive years. Over the 14 year period, management costs as a proportion of GVP, have mostly been decreasing. Exceptions to this decreasing trend occurred in 2003/04 when they increased to 5.1 per cent from 3.4 per cent in 2002/03, and also in the past two years. In the past two years, management costs as a percentage of GVP have increased again, from 3.0 per cent (2008/09) to 3.7 per cent (2009/10), and then further increased to 4.0 per cent (2010/11).

The average management cost per licence holder decreased from $14,186 in 1997/98 to $10,979 in 1999/00, reflecting a decline in the total cost of managing the fishery. The average cost per licence holder generally followed an increasing trend in subsequent years as a result of both a decline in the number of licence holders in the fishery and an increase in the total cost of management (Figure 5.7).

Figure 5.7 Management fee per licence holder and as a proportion of GVP, Southern Zone Rock Lobster fishery, 1997/98 to 2010/11



Source: See Table 3.3

Other reference points associated with achieving the economic objectives of the fishery are an increase in the total cost of management by 10 per cent or more in one year and by 15 per cent or more in any two consecutive years. In 2003/04 the total cost of managing the fishery increased by almost 17 per cent compared to the previous year. There was also a significant increase in the cost of management in 2006/07, a rise of almost 19 per cent compared to 2005/06.

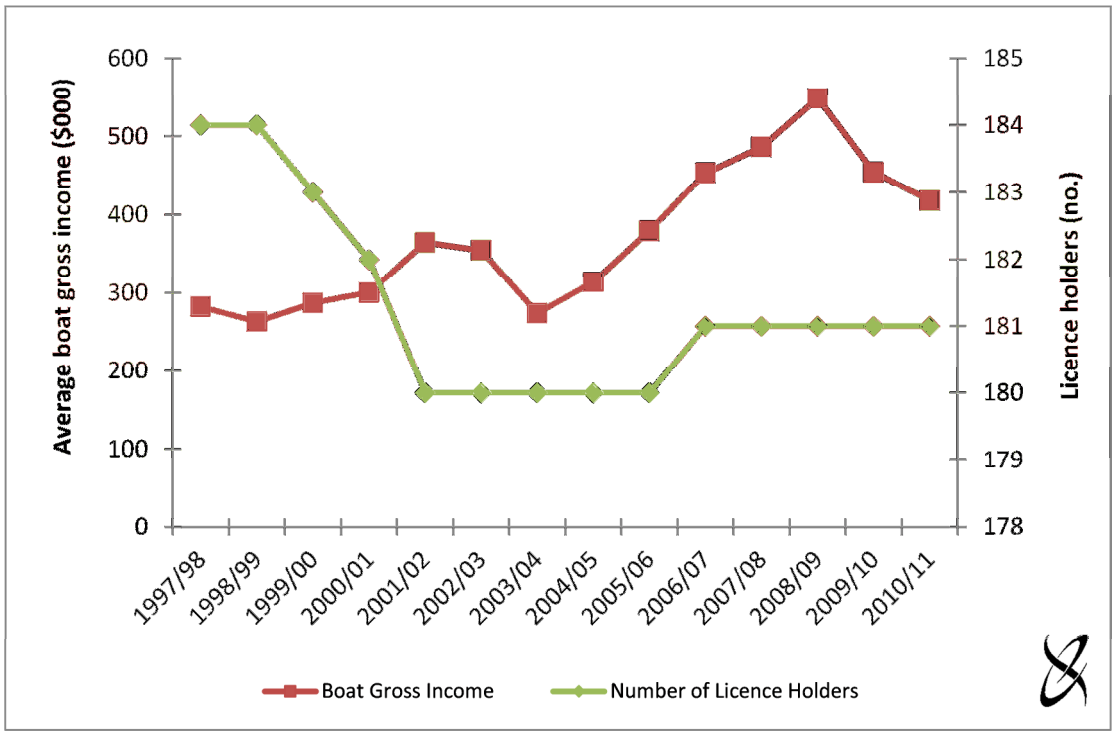
Financial Performance Indicators…

Average income

The average income per boat and total number of licence holders in the fishery for the period 1997/98 to 2010/11 are illustrated in Figure 5.8.

The total number of licence holders in the fishery declined from 184 to 181 between 1997/98 and 2010/11. The average income per boat followed an increasing trend, despite some year-to-year fluctuations. In 1997/98 the average income per boat was $282,000 while in 2010/11 average income was almost $417,000 (in nominal terms) (Figure 5.8).

Figure 5.8 Average income per licence holder in the Southern Zone Rock Lobster fishery, 1997/98 to 2010/11 [a]



[a] Estimates of average boat gross income are expressed in nominal terms.

Source: See Tables 3.2 and 3.4 and Appendix Tables 4.1 to 4.4

Operating cost trends

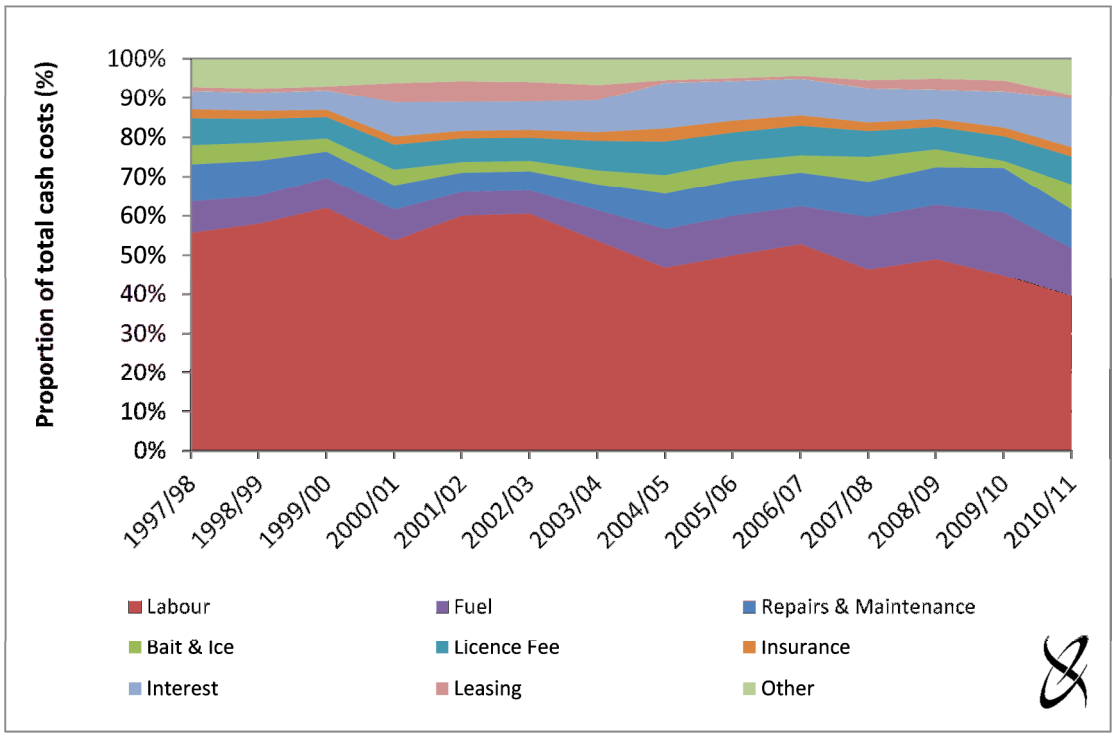
Figure 5.9 illustrates the breakdown of cost items as a proportion of total cash costs.

In each year of the analysis labour costs accounted for the largest share of total cash costs. The labour costs are comprised of payments to licence owners and crew as well as an imputed wage to those licence owners and other family members who are not paid a wage directly by the business. Other significant cash costs were fuel, repairs and maintenance, licence fees and interest (Figure 5.9).

The cash costs detailed in Figure 5.9 can be categorised as either variable or fixed costs. Total variable costs and total fixed costs are illustrated in

Figure 5.10 on an average per boat basis. Total variable costs fluctuated between years but generally followed a decreasing trend over the period 1997/98 to 2004/05. Between 2004/05 the trend is slightly increasing, although there is still fluctuation. As would be expected, total fixed costs fluctuated much less from year to year but followed an increasing trend over time (Figure 5.10).

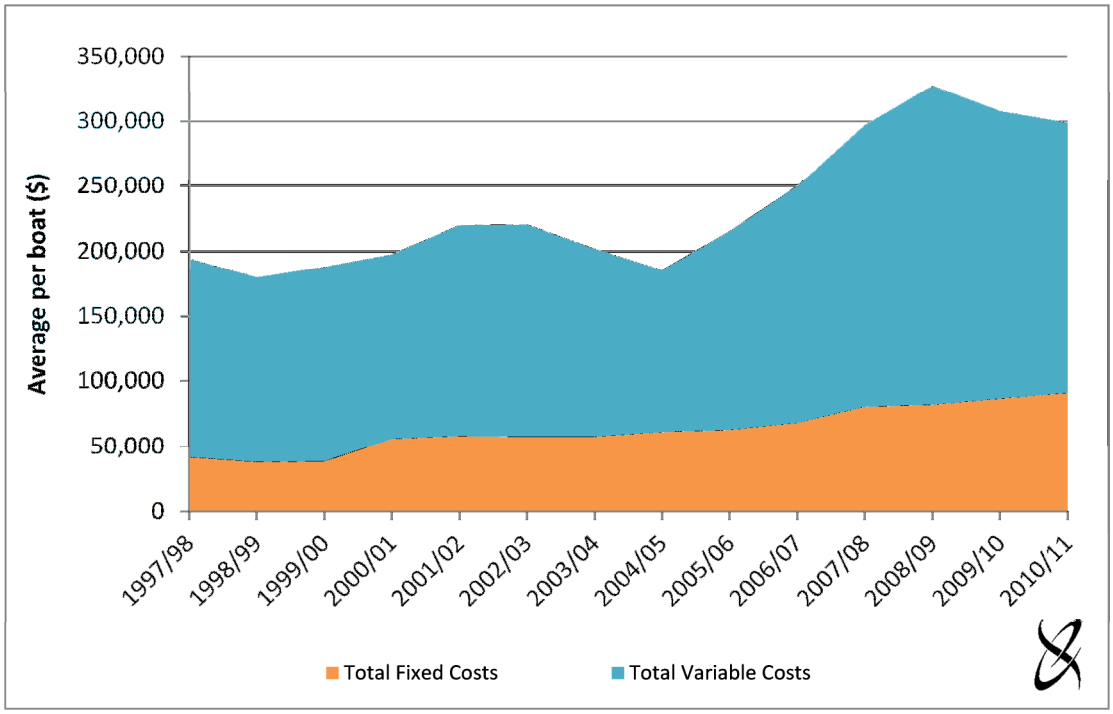
Figure 5.9 Cost shares in the Southern Zone Rock Lobster fishery, 1997/98 to 2010/11 [a]



[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: See Table 3.5 and Appendix Tables 4.1 to 4.4

Figure 5.10 Average total costs in the Southern Zone Rock Lobster fishery 1997/98 to 2010/11 [a]



[a] Estimates of average costs are expressed in nominal terms.

Source: See Table 3.5 and Appendix Tables 4.1 to 4.4

Cost Price Squeeze

Price and cost indices for the Southern Zone Rock Lobster fishery for the years 1997/98 to 2010/11 are summarised in Figure 5.11. These indicators are derived from the average price and average cost per kilogram of catch.

Between 1997/98 and 2010/11 the average price of Southern Zone Rock Lobster increased by approximately 78 per cent in nominal terms (Figure 5.11). The average costs of catching Southern Zone Rock Lobster also followed an increasing trend. Between 1997/98 and 2010/11 the average cost per kilogram increased by approximately 85 per cent (Figure 5.11).

Figure 5.11 Price and cost indices for the Southern Zone Rock Lobster fishery, 1997/98 to 2010/11 (1997/98 = 100)

Source: See Figure 3.1, Table 3.5 and Appendix Tables 4.1 to 4.4

Profitability

Selected measures of profitability for the Southern Zone Rock Lobster fishery are summarised in Figure 5.12 for the years 1997/98 to 2010/11.

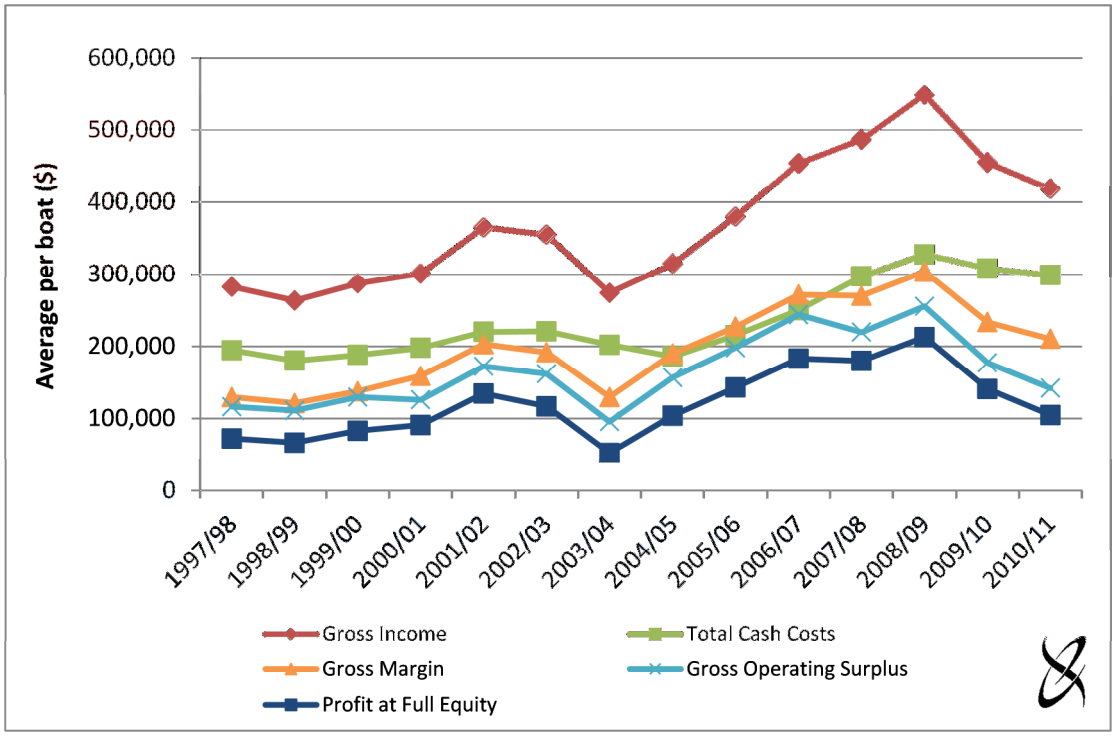
Changes in each of the profitability measures for the fishery were closely related to the average income earned. Profitability followed an increasing trend between 1997/98 and 2001/02 before declining over the next few years. Average profits earned in the fishery increased steadily from 2003/04 onwards despite falls in 2009/10 and 2010/11 (Figure 5.12).

Return on Investment

Estimates of the average licence value and the rate of return to capital are illustrated in Figure 5.13. Capital includes boats, licence/quota, fishing gear, sheds, vehicles and other capital items used as part of the fishing enterprise. Return on investment is calculated to be profit at full equity as a percentage of total capital employed.

There was a significant decline in the average rate of return to capital between 1997/98 and 2003/04. There was a slight decline in profitability in the latter half of this period, however the decline in the rate of return was primarily due to an increase in the value of licences. The rate of return to capital followed an increasing trend in following years, until 2009/10. Since then it has fallen sharply, although it still remains above 2003/04 levels. This comes as a result of improved profitability in the fishery and despite increases in average licence value (Figure 5.13)

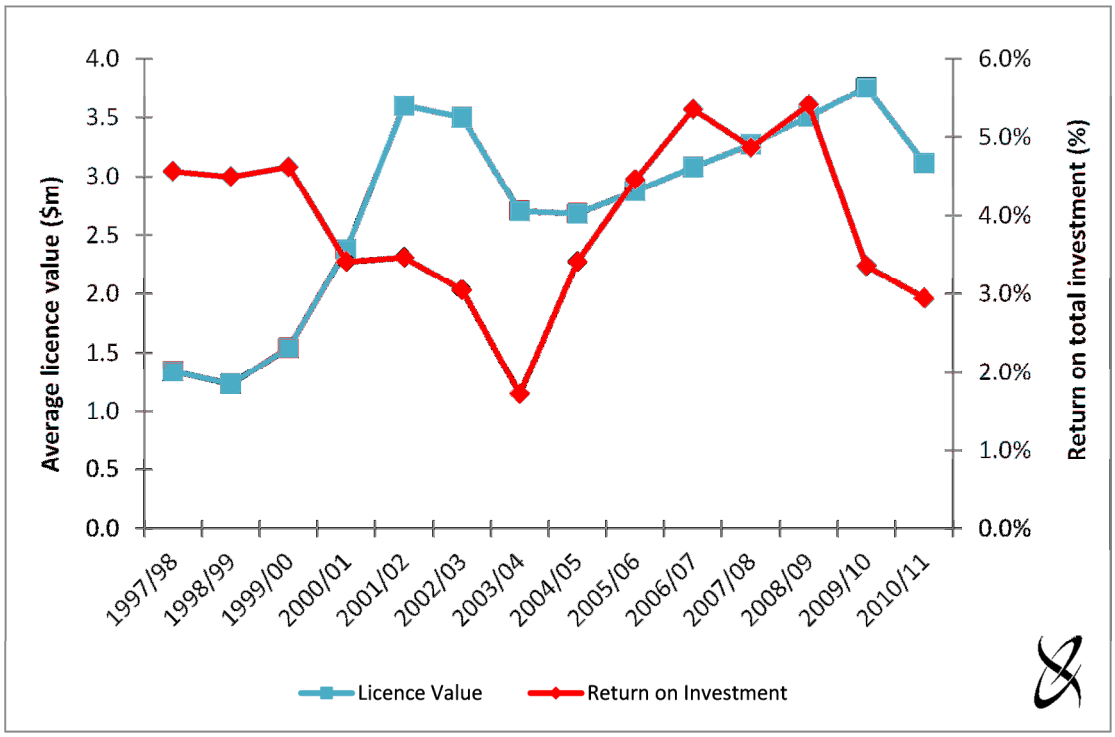
Figure 5.12 Average income and profit per boat in the Southern Zone Rock Lobster fishery, 1997/98 to 2010/11 [a]



[a] Estimates of income and profitability measures are expressed in nominal terms.

Source: See Table 3.5 and Appendix Tables 4.1 to 4.4

Figure 5.13 Return on investment in the Southern Zone Rock Lobster fishery, 1997/98 to 2010/11



Source: See Table 3.5 and Appendix Tables 4.1 to 4.4

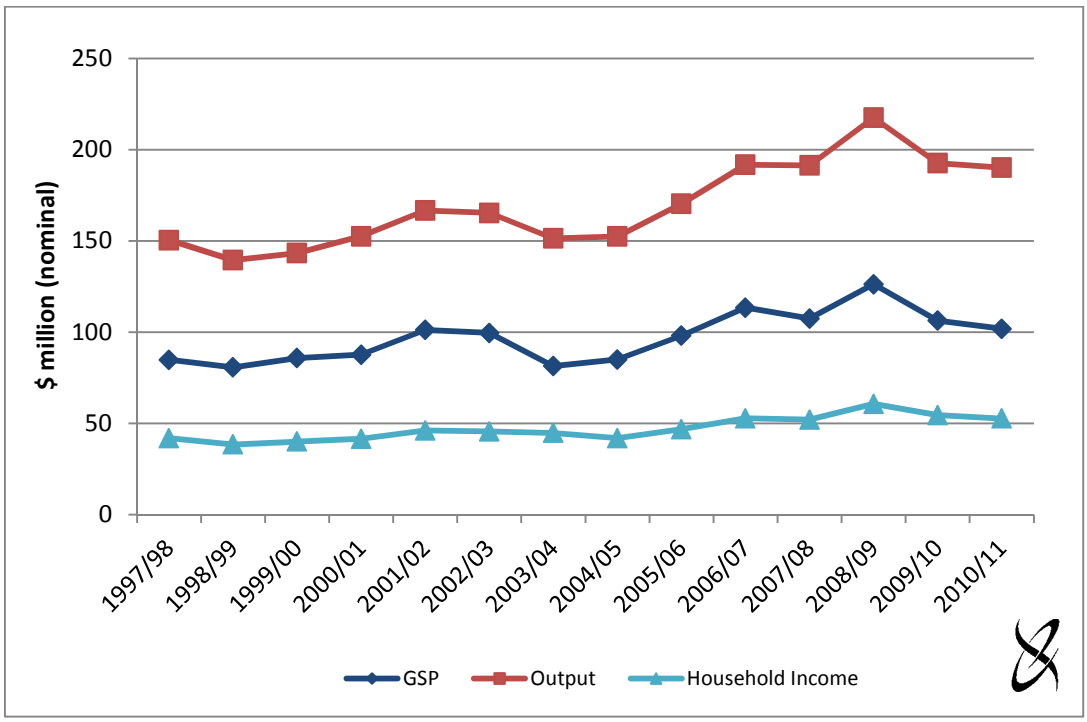
Contribution to SA Economy…

Figures 5.13 and 5.14 illustrate the total economic impact of the fishery on the SA economy for the 13 years, 1997/98 to 2010/11. Total economic impact refers to the direct fishing industry impacts (fishing, processing, etc.) and the indirect impacts on other sectors of the economy.

The change in total output and GSP impacts are closely related to changes in price and fishery GVP. One of the limit reference points associated with achieving the economic objective of the fishery is a decline in total GSP relating to the fishery to below $75 million. Total GSP impact was above this reference point in all years of the analysis (Figure 5.14).

There has been an overall decline in the direct employment impact of the fishery since 1997/98, as illustrated in (Figure 5.15). This is due to a decrease in the number of licence holders in the fishery and productivity improvements.

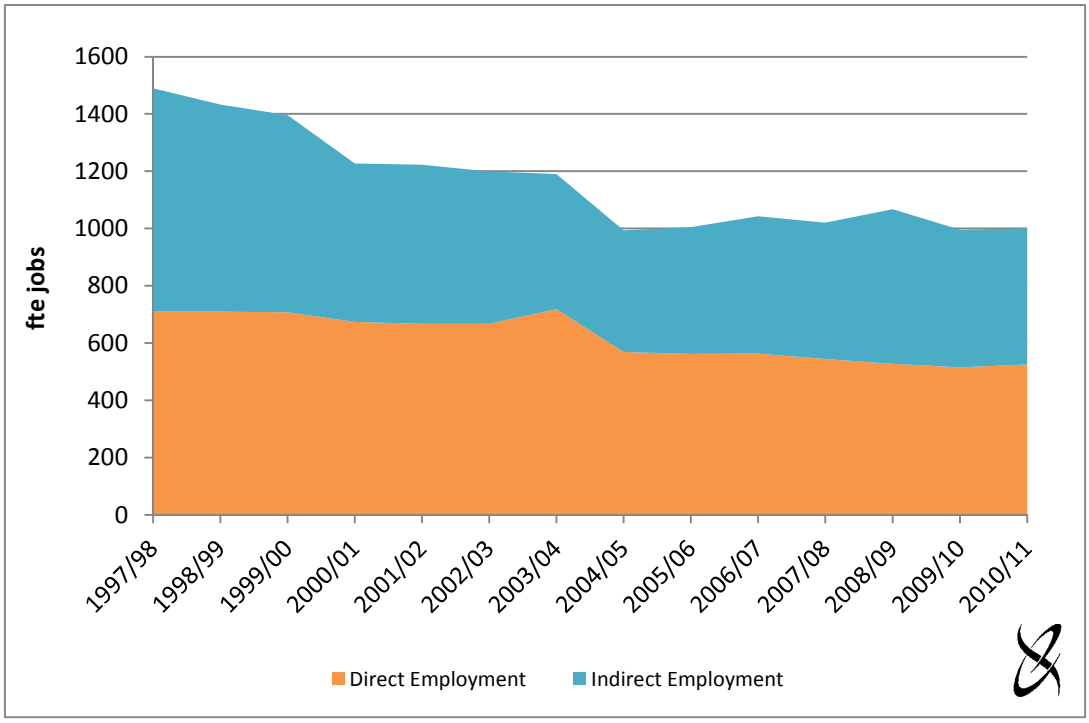
Figure 5.14 Total gross state product, output and household income impact of the Southern Zone Rock Lobster fishery on the SA economy, 1997/98 to 2010/11 [a]



[a] Estimates of output, GSP and household income are expressed in nominal terms.

Source: See Table 3.8

Figure 5.15 Total direct and indirect employment impact of the Southern Zone Rock Lobster fishery on the SA economy, 1997/98 to 2010/11



Source: See Table 3.8

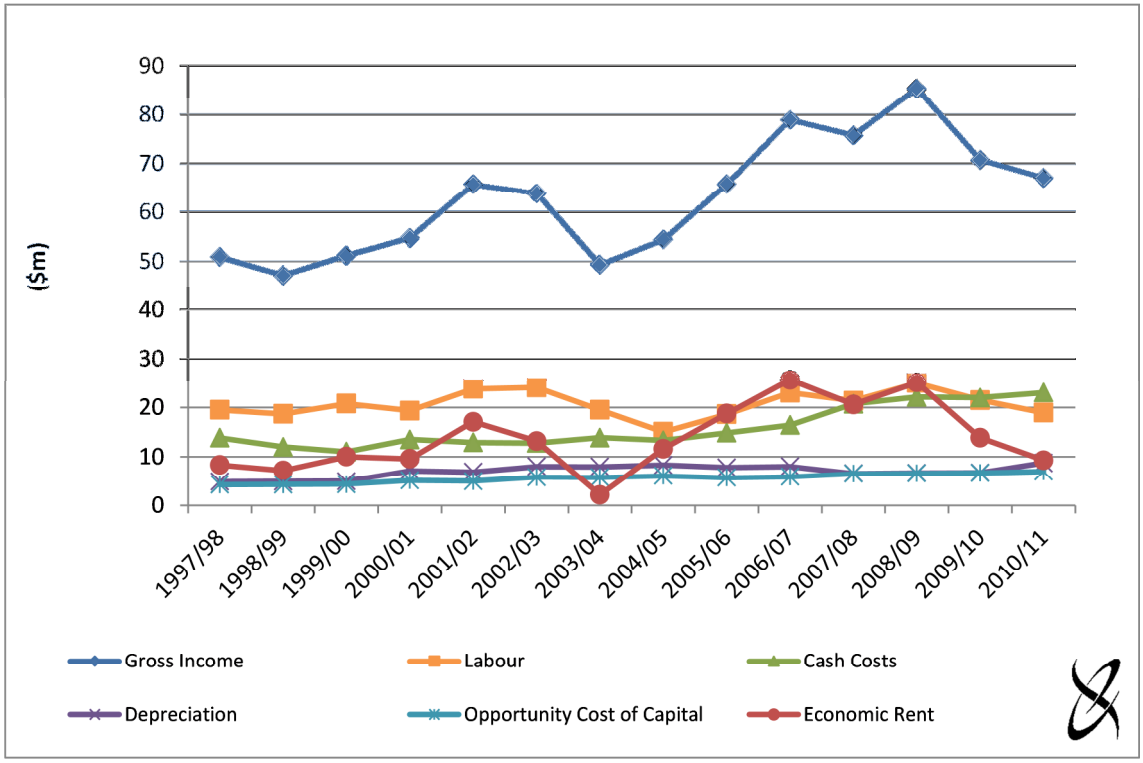
Economic Rent…

Economic rent is 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 including the opportunity cost of capital. In this case the natural resource is the Southern Zone Rock Lobster fishery and the good produced is the landed Rock Lobster. Estimates of the economic rent generated in the Southern Zone Rock Lobster fishery are summarised in Figure 5.16 for the period 1997/98 to 2010/11.

The economic rent fluctuated between years but increased slightly overall. Year-to-year changes in the economic rent were closely related to the gross income of the fishery. In 1997/98 estimated economic rent in the fishery was $8.4 million while in 2010/11 it was $9.0 million (Figure 5.16). Economic rent in 2010/11 was down significantly from a peak of 25.6 million in 2006/07

Economic rent 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 5.17 and shows an increase between 1997/98 and 2001/02 before a sharp decline over the next two years (2002/03 and 2003/04). Despite a decline in 2009/10 and 2010/11, economic rent as a percentage of GVP increased in subsequent years (Figure 5.17), although it decreased in 2009/10 and 2010/11 and is now below 1997/98 levels.

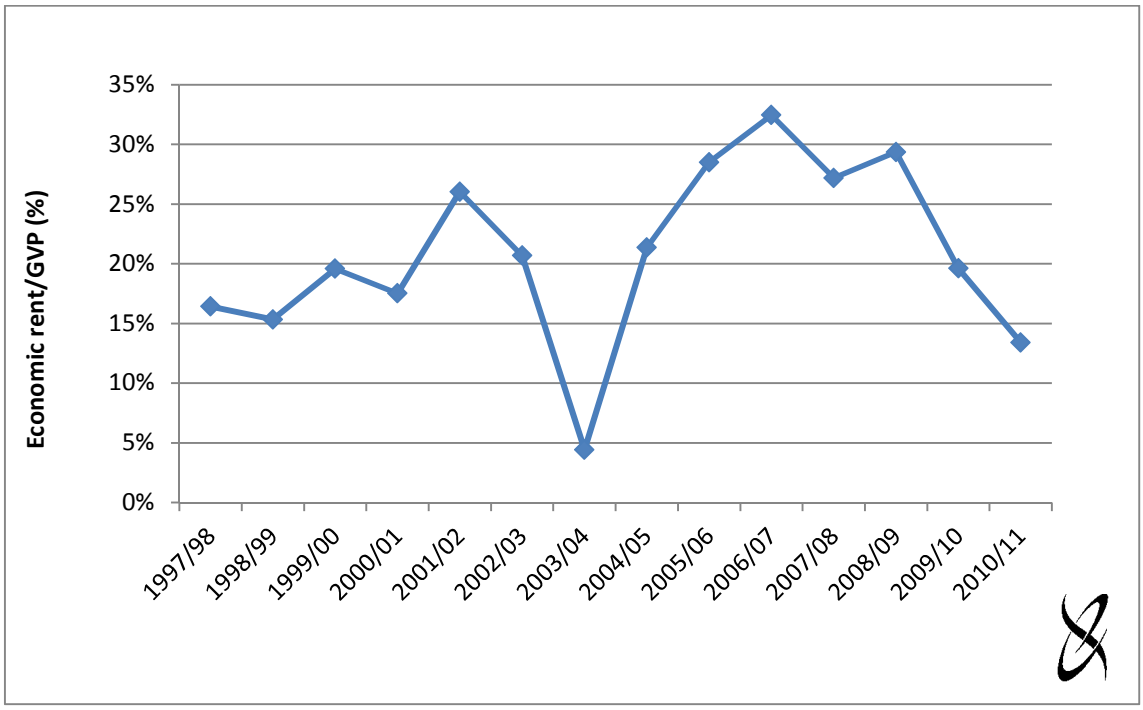
Figure 5.16 Economic rent in the Southern Zone Rock Lobster fishery, 1997/98 to 2010/11 ($'000) [a]



[a] All indicators are expressed in nominal terms.

Source: See Table 3.10

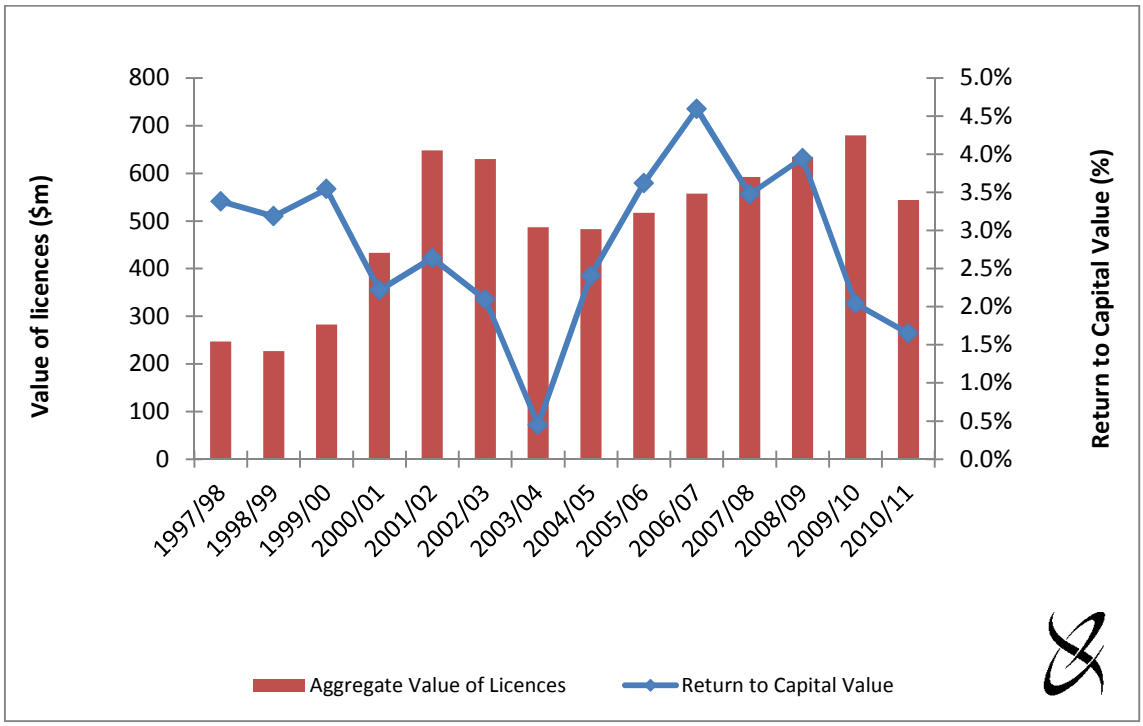
Figure 5.17 Economic rent as a proportion of GVP in the Southern Zone Rock Lobster fishery, 1997/98 to 2010/11



Source: See Table 3.1 and Table 3.10

Economic rent represents a return to the value of licences in the fishery. The aggregate value of licences in the Southern Zone Rock Lobster fishery and the return to capital value of the fishery are illustrated in Figure 5.18. The return to the capital value of the fishery followed a decreasing trend between 1997/98 and 2003/04 as a result of a decline in economic rent in the latter half of this period and an increasing trend in the value of licences. The rate of return to capital value has followed an increasing trend between 2003/04 and 2006/07 but has decreased in subsequent years (Figure 5.18).

Figure 5.18 Aggregate value of licences and return to capital in the Southern Zone Rock Lobster fishery, 1997/98 to 2010/11 [a]



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

Source: See Tables 3.5 and 3.10 and Appendix Tables 4.1 to 4.4

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Appendix 1 Economic Impact of the SA Southern Zone Rock Lobster Fishery, 2009/10

Appendix Table 1.1 The economic impact of the Southern Zone Rock Lobster fishing industry in South Australia, 2009/10

Sector	Output		Employment [a]		Household Income		Contribution to GSP	
	($m)	%	(fte jobs)	%	($m)	%	($m)	%
Direct effects								
Fishing	70.7	37%	414	42%	21.6	40%	47.6	45%
Processing	7.2	4%	25	3%	1.6	3%	2.3	2%
Transport	7.3	4%	27	3%	1.7	3%	3.2	3%
Retail	1.1	1%	12	1%	0.4	1%	0.0	0%
Food services	2.3	1%	16	2%	0.6	1%	1.0	1%
Capital expenditure [b]	2.7	1%	21	2%	0.8	2%	1.2	1%
Total Direct [c]	*91.3*	*46%*	*515*	*50%*	*26.7*	*48%*	*55.3*	*51%*
Flow-on effects								
Trade	16.3	8%	137	14%	5.4	10%	7.8	7%
Manufacturing	22.8	12%	109	11%	5.1	9%	7.4	7%
Business Services	12.7	7%	55	6%	4.4	8%	6.0	6%
Transport	6.2	3%	50	5%	1.4	3%	2.7	3%
Other Sectors	43.4	23%	130	13%	11.3	21%	26.7	25%
Total Flow-on [c]	*101.3*	53%	*481*	48%	*27.7*	51%	*50.5*	47%
Total [c]	**192.6**	**100%**	**996**	**100%**	**54.4**	**100%**	**106.3**	**99%**
Total/Direct	2.1	-	1.9	-	2.0	-	1.9	-
Total/Tonne	$154,900	-	0.80	-	$43,700	-	$85,500	-

[a] Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 214 full-time jobs and 299 part-time jobs, that is, 513 jobs in aggregate, which was estimated to be equal to 414 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: EconSearch analysis

Appendix Table 1.2 The economic impact of the Southern Zone Rock Lobster fishing industry in the Limestone Coast region, 2009/10

Sector	Output		Employment [a]		Household Income		Contribution to GSP	
	($m)	%	(fte jobs)	%	($m)	%	($m)	%
Direct effects								
Fishing	70.7	56%	414	58%	21.6	61%	47.6	64%
Processing	7.2	6%	26	4%	1.5	4%	2.4	3%
Transport	1.4	1%	7	1%	0.4	1%	0.6	1%
Retail	0.1	0%	1	0%	0.0	0%	0.0	0%
Food services	0.1	0%	1	0%	0.0	0%	0.0	0%
Capital expenditure [b]	1.7	1%	19	3%	0.6	2%	0.8	1%
Total Direct [c]	*81.2*	*63%*	*467*	*63%*	*24.1*	*66%*	*51.5*	*68%*
Flow-on effects								
Trade	10.8	9%	99	14%	3.6	10%	5.2	7%
Manufacturing	9.2	7%	61	8%	2.0	6%	3.1	4%
Business Services	3.5	3%	16	2%	1.1	3%	1.6	2%
Transport	2.1	2%	17	2%	0.6	2%	0.9	1%
Other Sectors	19.0	15%	55	8%	4.2	12%	12.3	16%
Total Flow-on [c]	*44.6*	35%	*248*	35%	*11.5*	32%	*23.1*	31%
Total [c]	**125.8**	**100%**	**715**	**100%**	**35.6**	**100%**	**74.6**	**100%**
Total/Direct	1.5	-	1.5	-	1.5	-	1.4	-
Total/Tonne	$101,100	-	0.58	-	$28,600	-	$60,000	-

[a] Full-time equivalent jobs. Direct employment in the fishing sector was comprised of 214 full-time jobs and 299 part-time jobs, that is, 513 jobs in aggregate, which was estimated to be equal to 414 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: EconSearch analysis

Appendix 2 Rock Lobster Exports from South Australia, 1995/96 to 2010/11

Appendix Table 2.1 Rock Lobster exports from South Australia, quantity (kg) by category, 1995/96 to 2010/11

Category	Year															
	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Whole rock lobster - frozen	17,712	254	0	0	0	145,255	24,166	39,382	22,679	5,829	1,177	64	2,827	2,215	1,211	1,402
Whole rock lobster- live, fresh or chilled	1,465,501	1,352,898	1,487,904	2,187,018	2,284,822	2,025,710	1,695,170	1,763,339	1,877,960	1,828,341	1,743,730	1,937,308	2,061,812	1,589,478	1,374,720	851,138
Rock lobster tails - frozen	16,624	25,713	40,790	50,833	36,592	18,862	10,187	18,879	3,264	5,044	9,592	6,734	12,506	4,129	2,709	4,007
Rock lobster tails - fresh or chilled	0	10,244	0	1,190	1,338	941	2,141	1,341	2,681	4,903	2,055	0	0	0	0	0
Other	10,685	100,740	168,410	685	15,499	130,230	569,788	338,494	51,378	0	3,015	9,901	23	0	978	8
Total	1,510,522	1,489,849	1,697,104	2,239,726	2,338,251	2,320,998	2,301,452	2,161,435	1,957,962	1,844,117	1,759,569	1,954,007	2,077,168	1,595,822	1,379,618	856,555

Source: Australian Bureau of Statistics (by request)

Appendix Table 2.2 Rock Lobster exports from South Australia, value ($'000 fob) by category, 1995/96 to 2010/11

Category	Year															
	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Whole rock lobster - frozen	730	14	0	0	0	5,180	1,167	1,864	991	326	114	8	214	173	42	34
Whole rock lobster- live, fresh or chilled	54,517	49,154	57,600	75,575	81,678	84,725	80,437	74,221	66,367	67,361	76,611	95,617	93,805	113,262	91,614	56,074
Rock lobster tails - frozen	1,313	1,914	2,736	2,863	2,586	1,444	1,044	1,466	172	331	750	540	713	350	228	367
Rock lobster tails - fresh or chilled	0	918	0	90	100	42	162	130	157	276	90	0	0	0	0	0
Other	402	4,443	6,887	22	631	4,597	26,618	13,844	1,580	0	116	534	1	0	81	1
Total	56,962	56,443	67,222	78,549	84,995	95,990	109,429	91,525	69,268	68,295	77,681	96,698	94,732	113,785	91,965	56,476

Source: Australian Bureau of Statistics (by request)

Appendix Table 2.3 Rock Lobster exports from South Australia, quantity (kg) by country of destination, 1995/96 to 2010/11

Country of Destination	Year															
	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Canada	0	0	0	13	2,180	1,360	110	124,844	0	18	0	0	0	0	0	0
China	59,661	208,695	620,032	761,667	70,602	5,284	69,366	124,844	55,805	292,265	70,230	35,193	56,250	2,946	113	199,839
Denmark	0	0	0	0	0	0	0	0	0	0	33	54	0	67	0	0
France	0	0	0	6,504	23,763	38,493	34,577	21,899	7,590	3,265	6,799	4,577	3,513	250	600	0
Germany	0	0	0	300	2,243	0	556	0	0	0	71	0	0	95	0	0
Hong Kong	946,297	793,609	818,785	1,178,555	1,941,392	2,042,772	1,995,842	1,833,031	1,732,694	1,387,463	1,574,584	1,832,744	1,932,782	1,543,665	1,348,669	631,809
Italy	3,200	5,440	6,130	15,125	14,677	20,950	17,966	15,700	11,070	8,006	5,222	2,619	1,971	200	0	0
Japan	156,624	140,602	112,604	98,438	119,005	113,411	78,688	89,617	96,529	82,453	74,861	54,075	55,550	28,255	14,976	4,471
Korea, Republic of	8,975	720	200	2,845	1,525	3,416	3,972	4,888	2,683	1,978	2,244	1,101	2,160	0	0	0
Malaysia	1,081	2,065	2,282	1,562	2,953	6,624	17,039	8,244	10,041	12,229	4,016	5,389	5,865	4,696	7,623	9,977
Philippines	117	1,925	959	0	0	0	365	25	40	72	28	0	23	25	15	9
Russian Federation	0	0	0	0	0	0	0	0	0	0	0	0	47	347	0	0
Singapore	36,182	50,545	36,043	27,683	24,175	32,710	28,967	26,885	19,502	26,109	11,951	10,292	12,414	8,605	5,567	9,304
Taiwan	278,819	255,526	72,156	99,460	103,480	28,739	27,983	8,210	806	100	0	395	0	0	0	0
Thailand	620	3,944	0	0	2,400	0	9	0	0	0	225	0	0	0	0	0
United Arab Emirates	2,460	4,530	1,533	3,865	1,525	1,655	2,934	2,240	1,380	4,670	1,453	2,398	2,886	2,179	441	556
United Kingdom	100	0	0	0	300	37	0	0	0	19	385	20	200	39	0	0
USA	10,346	22,018	25,630	43,589	27,861	24,595	22,800	22,023	5,979	9,111	7,358	5,117	2,441	4,123	1,614	590
Vietnam	0	0	0	0	0	0	0	0	13,843	13,184	58	0	76	0	0	0
Total	1,510,522	1,489,849	1,697,104	2,239,726	2,338,251	2,296,366	2,301,452	2,283,876	1,957,962	1,844,117	1,759,572	1,954,007	2,077,168	1,595,822	1,379,618	856,555

Source: Australian Bureau of Statistics (by request)

Appendix Table 2.4 Rock Lobster exports from South Australia, value ($'000 fob) by country of destination, 1995/96 to 2010/11

Country of Destination	Year															
	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Canada	0	0	0	1	266	40	7	5,246	0	2	0	0	0	0	0	0
China	2,328	7,480	24,525	26,368	2,601	225	3,379	5,246	2,004	10,818	2,900	1,760	2,460	201	7	12,148
Denmark	0	0	0	0	0	0	0	0	0	0	4	6	0	9	0	0
France	0	0	0	232	889	1,512	1,525	981	266	126	296	296	226	17	29	0
Germany	0	0	0	13	70	0	24	0	0	0	7	0	0	4	0	0
Hong Kong	35,350	29,860	31,864	40,067	68,521	83,350	93,882	75,895	60,431	50,669	68,924	90,050	87,886	109,957	89,657	42,653
Italy	103	166	234	532	566	867	890	816	449	331	238	145	78	12	0	0
Japan	6,500	5,977	4,784	3,824	5,374	5,023	3,834	4,465	4,015	3,416	3,648	3,074	2,785	2,287	1,192	371
Korea, Republic of	395	24	11	137	60	160	215	253	125	88	106	64	91	0	0	0
Malaysia	42	90	88	62	112	290	843	358	342	466	232	267	281	287	548	645
Philippines	5	73	41	0	0	0	19	1	1	2	2	0	1	2	2	1
Russian Federation	0	0	0	0	0	0	0	0	0	0	0	0	3	44	0	0
Singapore	1,426	2,073	1,479	1,051	1,014	1,383	1,554	1,173	713	1,024	669	533	584	550	397	574
Taiwan	10,085	9,040	2,666	3,346	3,757	1,166	1,234	357	25	12	0	16	0	0	0	0
Thailand	22	148	0	0	101	0	1	0	0	0	9	0	0	0	0	0
United Arab Emirates	94	190	61	127	62	88	162	108	52	173	62	130	137	169	30	43
United Kingdom	3	0	0	0	10	4	0	0	0	2	30	2	21	5	0	0
USA	465	1,313	1,444	2,785	1,586	1,842	1,844	1,734	332	500	543	351	143	196	105	41
Vietnam	0	0	0	0	0	0	0	0	511	522	4	0	3	0	0	0
Total	56,962	56,443	67,222	78,549	84,995	94,144	109,429	96,697	69,268	68,295	77,681	96,698	94,732	113,785	91,965	56,476

Source: Australian Bureau of Statistics (by request)

Appendix 3 Summary Economic Indicators for SA Commercial Fisheries

Appendix Table 3.1 Commercial fisheries catch, South Australia, 1997/98 to 2009/10 (tonnes) [a]

Year	Abalone	GSV Prawns	SG & WC Prawns	Sth'n Zone Rock Lobster	Nth'n Zone Rock Lobster	Blue Swimmer Crabs	Lakes and Coorong [b]	Sardines	Other Marine Species	Total SA Fisheries [c]
1997/98	812	267	2,492	1,680	942	469	2,465	6,041	5,594	20,762
1998/99	933	336	2,425	1,713	1,016	501	2,102	4,465	5,036	18,527
1999/00	889	400	2,016	1,717	1,001	467	1,807	3,836	4,869	17,002
2000/01	867	384	2,603	1,716	846	556	2,013	7,368	5,255	21,608
2001/02	850	322	2,309	1,717	675	560	1,640	12,165	4,722	24,960
2002/03	890	232	1,508	1,766	595	583	1,979	21,741	4,175	33,469
2003/04	879	172	1,958	1,896	504	611	2,180	33,160	4,168	45,528
2004/05	902	213	1,960	1,897	446	632	2,258	56,952	3,810	69,070
2005/06	896	175	1,891	1,889	476	649	2,440	28,626	3,186	40,228
2006/07	883	209	2,024	1,895	492	637	2,443	30,355	2,834	41,772
2007/08	889	229	2,088	1,850	459	669	2,146	29,692	2,909	40,931
2008/09	837	273	1,915	1,407	403	658	2,023	27,850	2,972	38,338
2009/10	855	224	2,445	1,243	310	592	1,916	36,573	3,301	47,459

[a] Excludes catch from the Charter Boat fishery.

[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] Excludes aquaculture, south east non-trawl and deep water trawl.

Source: EconSearch (2012)

Appendix Table 3.2 Commercial fisheries gross value of production, South Australia, 1997/98 to 2009/10 ($m)

Year	Abalone	GSV Prawns	SG & WC Prawns	Sth'n Zone Rock Lobster	Nth'n Zone Rock Lobster	Blue Swimmer Crabs	Lakes and Coorong [a]	Sardines	Other Marine Species [b]	Charter Boat	Total SA Fisheries [c]
1997/98	27	4	29	51	28	2	5	4	17	-	167
1998/99	27	5	35	47	27	2	5	3	18	-	169
1999/00	32	8	36	51	30	2	5	3	20	-	187
2000/01	40	7	46	55	28	3	6	5	21	-	210
2001/02	35	6	42	66	26	3	5	9	19	-	210
2002/03	36	4	28	64	19	4	4	18	21	-	198
2003/04	32	3	40	49	12	4	5	23	23	-	191
2004/05	34	4	32	54	12	4	5	28	21	-	194
2005/06	34	3	34	66	15	5	6	16	17	4	197
2006/07	31	3	39	79	18	5	7	19	19	5	221
2007/08	31	3	33	76	16	6	8	16	20	5	209
2008/09	33	3	31	85	19	5	8	18	22	5	225
2009/10	28	3	29	71	15	4	6	23	23	5	207

[a] Revalued SARDI estimates using Baker and Pierce (1998) for the years 1997/98 to 2001/02 and survey based readjustment factors for 2002/03 to 2009/10. Excludes the River fishery for the years 2003/04 to 2009/10.

[b] SARDI estimates for the years 1997/98 to 2002/03, revalued SARDI estimates for 2003/04 to 2008/09 using weighted average prices from Sydney and Melbourne fish markets and price data obtained from fishers.

[c] Excludes aquaculture, south east non-trawl, tuna, deep water trawl.

Source: EconSearch (2012)

Appendix Table 3.3 Cost of management in South Australian commercial fisheries, 2009/10

	Licence Fees ($'000)	GVP ($'000)	Fees/ GVP (%)	Catch ('000kg)	Fees/ Catch ($/kg)	Licence Holders (no.)	Fees/ Licence ($/licence)
Abalone	2,512	28,068	9.0%	855	$2.94	35	$71,782
Charter Boats [a]	244	5,255	4.6%	22	$11.19	110	$2,220
GSV Prawns	340	2,573	13.2%	224	$1.52	10	$34,012
SG & WC Prawns	945	28,569	3.3%	2,445	$0.39	42	$22,508
Sth'n Zone Rock Lobster	2,594	70,720	3.7%	1,243	$2.09	181	$14,332
Nth'n Zone Rock Lobster	1,165	15,117	7.7%	310	$3.76	68	$17,126
Blue Crabs - Pots	283	4,125	6.9%	539	$0.53	9	$31,472
Blue Crabs – Marine Scale	4	332	1.1%	53	$0.07	4	$905
Lakes and Coorong [b]	393	6,162	6.4%	1,916	$0.21	36	$10,918
Marine Scalefish [c]	1,961	23,251	8.4%	3,301	$0.59	334	$4,281
Sardines	656	23,041	2.8%	36,573	$0.02	14	$46,860
Total SA	11,097	207,213	5.4%	47,481	$0.23	843	$13,164

[a] Number of clients (not catch) and Fees/1000 clients.

[b] Excludes the River fishery.

[c] 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: EconSearch (2012)

Appendix Table 3.4 Financial performance in South Australian commercial fisheries, 2009/10, ($'000) (average per boat)

	Abalone	Charter Boats	GSV Prawns	SG & WC Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs [a]	Marine Scalefish [b]	Sardines	Lakes and Coorong
Total Boat Gross Income	**793.4**	**129.4**	**301.2**	**645.3**	**454.5**	**262.6**	**4,379.3**	**93.1**	**1,449.3**	**171.2**
Variable Costs										
Fuel	15.0	23.9	37.5	93.8	49.1	23.6	469.7	8.9	166.6	10.4
Repairs & Maintenance	22.4	14.7	13.1	36.9	35.2	13.7	449.1	6.9	121.1	7.9
Bait/Ice	0.1	4.1	0.0	0.0	5.5	3.3	72.8	1.9	9.3	2.0
Provisions	9.1	5.6	0.6	8.1	0.9	6.6	0.0	0.7	6.0	0.4
Labour - paid	220.0	24.1	108.8	246.0	107.9	71.3	1,069.8	11.0	457.6	29.6
- unpaid	0.9	12.5	8.1	1.7	22.0	21.6	108.7	21.5	8.3	41.6
Other	5.0	4.1	0.5	17.1	0.7	1.0	138.6	0.0	26.0	18.5
Total Variable Costs	**272.4**	**89.0**	**168.6**	**403.6**	**221.3**	**141.1**	**2,308.8**	**51.0**	**794.9**	**110.4**
Fixed Costs										
Licence Fee	69.9	2.8	33.8	22.4	19.1	20.6	338.0	6.1	34.0	7.5
Insurance	4.4	3.4	20.5	19.4	6.8	7.8	109.9	1.9	33.2	1.4
Interest	18.8	5.1	19.7	45.6	28.6	46.8	656.8	3.7	67.6	3.7
Labour - unpaid	20.8	7.5	13.3	8.8	8.0	8.6	72.9	3.0	13.1	9.9
Leasing	0.0	0.0	0.0	0.0	8.6	14.0	0.0	0.0	2.1	0.0
Legal & Accounting	8.8	1.4	6.9	10.3	4.0	4.2	24.5	1.1	5.5	2.4
Telephone etc.	3.1	2.4	2.7	3.6	1.9	3.2	30.6	1.0	1.0	3.3
Slipping & Mooring	2.1	1.6	4.2	2.9	3.0	1.8	0.0	0.5	13.3	0.0
Travel	8.4	1.1	0.4	1.5	2.2	3.9	17.4	0.5	0.1	0.4
Office & Admin	9.1	5.8	4.1	6.3	4.2	4.5	47.1	7.6	10.6	7.2
Total Fixed Costs	**145.3**	**31.1**	**105.6**	**120.8**	**86.3**	**115.5**	**1,297.3**	**25.3**	**180.6**	**35.8**
Total Boat Cash Costs (3 + 7)	**417.7**	**120.1**	**274.2**	**524.4**	**307.6**	**256.6**	**3,606.1**	**76.3**	**975.5**	**146.3**
Boat Gross Margin (1 - 3)	**521.0**	**40.4**	**132.6**	**241.6**	**233.2**	**121.5**	**2,070.5**	**42.1**	**654.4**	**60.7**
Total Unpaid Labour (2 + 5)	**21.7**	**20.0**	**21.3**	**10.5**	**30.0**	**30.2**	**181.6**	**24.5**	**21.4**	**51.5**
Gross Operating Surplus (1 - 8 + 9)	**397.4**	**29.3**	**48.3**	**131.4**	**176.9**	**36.2**	**954.8**	**41.2**	**495.2**	**76.4**
Boat Cash Income (1 - 8)	**375.7**	**9.3**	**27.0**	**120.9**	**146.9**	**6.0**	**773.2**	**16.8**	**473.8**	**24.9**
Depreciation	**40.7**	**35.2**	**97.3**	**147.7**	**45.0**	**37.6**	**345.0**	**14.6**	**150.6**	**20.8**
Boat Business Profit (10 - 11)	**335.1**	**-25.9**	**-70.3**	**-26.8**	**101.8**	**-31.6**	**428.2**	**2.2**	**323.1**	**4.1**
Profit at Full Equity (12 + 4 + 6)	**353.8**	**-20.8**	**-50.5**	**18.8**	**139.1**	**29.3**	**1,085.0**	**5.9**	**392.8**	**7.8**
Boat Capital										
Fishing Gear & Equip	288.8	370.1	1,359.1	1,842.5	444.7	376.6	1,868.0	128.8	2,923.4	114.4
Licence Value	7,195.4	34.6	2,133.9	3,199.9	3,756.2	1,438.1	19,263.7	156.9	4,446.7	199.9
Total Boat Capital	**7,484.2**	**404.8**	**3,493.0**	**5,042.4**	**4,200.9**	**1,814.7**	**21,131.7**	**285.7**	**7,370.1**	**314.4**
Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	**122.5%**	**-5.6%**	**-3.7%**	**1.0%**	**31.3%**	**7.8%**	**58.1%**	**4.6%**	**13.4%**	**6.8%**
Rate of Return on Total Boat Capital (13 / 15 * 100)	**4.7%**	**-5.1%**	**-1.4%**	**0.4%**	**3.3%**	**1.6%**	**5.1%**	**2.1%**	**5.3%**	**2.5%**

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

[b] Excludes the Commonwealth managed fisheries: south east non-trawl, tuna, deep water trawl.

Source: EconSearch (2012)

Appendix Table 3.5 Costs as a percentage of total cash costs in South Australian commercial fisheries, 2009/10

	Abalone	Charter Boats	GSV Prawns	SG & WC Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs	Marine Scalefish [a]	Sardines	Lakes and Coorong
Variable Costs										
Fuel	4%	20%	14%	18%	16%	9%	13%	12%	17%	7%
Repairs & Maintenance	5%	12%	5%	7%	11%	5%	12%	9%	12%	5%
Bait/Ice	0%	3%	0%	0%	2%	1%	2%	3%	1%	1%
Provisions	2%	5%	0%	2%	0%	3%	0%	1%	1%	0%
Labour - paid	53%	20%	40%	47%	35%	28%	30%	14%	47%	20%
- unpaid	0%	10%	3%	0%	7%	8%	3%	28%	1%	28%
Other	1%	3%	0%	3%	0%	0%	4%	0%	3%	13%
Fixed Costs										
Licence Fee	17%	2%	12%	4%	6%	8%	9%	5%	28%	6%
Insurance	1%	3%	7%	4%	2%	3%	3%	2%	28%	1%
Interest	4%	4%	7%	9%	9%	18%	18%	3%	56%	3%
Labour - unpaid	5%	6%	5%	2%	3%	3%	2%	2%	11%	8%
Leasing	0%	0%	0%	0%	3%	5%	0%	0%	2%	0%
Legal & Accounting	2%	1%	2%	2%	1%	2%	1%	1%	5%	2%
Telephone etc.	1%	2%	1%	1%	1%	1%	1%	1%	1%	3%
Slipping & Mooring	1%	1%	2%	1%	1%	1%	0%	0%	11%	0%
Travel	2%	1%	0%	0%	1%	2%	0%	0%	0%	0%
Office & Admin	2%	5%	2%	1%	1%	2%	1%	6%	9%	6%
Total Variable Costs	**65%**	**74%**	**61%**	**77%**	**72%**	**55%**	**64%**	**67%**	**81%**	**76%**
Total Fixed Costs	**35%**	**26%**	**39%**	**23%**	**28%**	**45%**	**36%**	**33%**	**19%**	**24%**
Total Cash Costs	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

[a] Excludes Commonwealth managed fisheries: south east non-trawl, tuna, deep water trawl.

Source: EconSearch (2012)

Appendix Table 3.6 Economic impacts of South Australian commercial fisheries, 2009/10

	Abalone	Charter Boats	GSV Prawns	SG & WC Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs	Marine Scalefish	Sardines	Lakes and Coorong	All Fisheries [a]
Output ($m)											
Direct											
Fishing	28.1	5.3	2.6	28.6	70.7	15.1	4.5	23.3	23.0	6.2	207.2
Downstream [b]	16.2	4.7	3.3	34.5	20.6	5.4	2.7	13.5	3.8	7.3	112.0
All other sectors (indirect)	45.1	14.0	8.8	79.8	101.3	27.5	8.8	59.1	26.0	18.0	388.6
Total	**89.4**	**24.0**	**14.7**	**142.9**	**192.6**	**48.0**	**16.0**	**95.9**	**52.8**	**31.5**	**707.8**
Total/Direct	2.0	2.4	2.5	2.3	2.1	2.3	2.2	2.6	2.0	2.3	2.2
Total/Tonne ($)	$104,600	$1,100	$65,400	$58,400	$154,900	$154,700	$26,900	$29,000	$1,800	$16,400	$14,409
Contribution to GSP ($m)											
Direct											
Fishing	22.4	2.3	1.3	18.8	47.6	8.0	2.7	10.6	17.0	3.9	134.7
Downstream	5.6	2.3	1.5	15.6	7.6	2.2	1.1	5.7	1.5	2.9	45.9
All other sectors (indirect)	22.6	6.9	4.4	39.5	50.5	13.8	4.3	29.2	13.0	9.0	193.1
Total	**50.6**	**11.5**	**7.2**	**73.9**	**105.7**	**23.9**	**8.2**	**45.5**	**31.4**	**15.8**	**373.8**
Total/Direct	1.8	2.5	2.6	2.1	1.9	2.4	2.1	2.8	1.7	2.3	2.1
Total/Tonne ($)	$59,200	$500	$32,097	$30,200	$85,500	$77,100	$13,700	$13,774	$1,129	$8,239	$7,633
Employment (fte jobs)											
Direct											
Fishing	90.4	78.5	28.2	184.6	414.1	152.8	28.1	565.6	47.7	62.0	1,652.1
Downstream	61.3	30.6	26.1	272.8	100.5	27.4	14.5	99.5	24.4	42.1	699.2
All other sectors (indirect)	218.1	66.1	41.5	372.2	481.5	131.6	41.4	279.5	122.2	84.8	1,838.8
Total	**369.8**	**175.1**	**95.8**	**829.6**	**996.1**	**311.7**	**84.0**	**944.6**	**194.2**	**189.0**	**4,190.1**
Total/Direct	2.4	1.6	1.8	1.8	1.9	1.7	2.0	1.4	2.7	1.8	1.8
Total/Tonne	0.43	0.01	0.43	0.34	0.80	1.01	0.14	0.29	0.01	0.10	0.08
Household Income ($m)											
Direct											
Fishing	8.5	1.8	1.3	10.8	21.6	4.3	1.3	10.6	6.7	2.9	69.7
Downstream	3.7	1.3	1.0	10.1	5.1	1.4	0.7	4.0	1.1	1.9	30.2
All other sectors (indirect)	12.5	3.8	2.4	21.7	27.7	7.7	2.4	16.2	7.1	4.9	106.4
Total	**24.7**	**6.9**	**4.7**	**42.6**	**54.4**	**13.4**	**4.3**	**30.7**	**14.8**	**9.8**	**206.3**
Total/Direct	2.0	2.2	2.1	2.0	2.0	2.4	2.3	2.1	1.9	2.0	2.1
Total/Tonne ($)	$28,800	$300	$21,000	$17,400	$43,700	$43,000	$7,300	$9,300	$500	$5,000	$4,202

[a] Excludes the River fishery and the Commonwealth managed fisheries: south-east non-trawl, tuna and deep water trawl.

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

Source: EconSearch (2012)

Appendix Table 3.7 Economic rent in South Australian commercial fisheries, 2009/10 ($m)

	Abalone	GSV Prawns	SG & WC Prawns	Sth'n Zone Rock Lob	Nth'n Zone Rock Lob	Blue Crabs	Marine Scalefish	Sardines	Lakes and Coorong	All Fisheries [a]
Gross Income	27.8	2.6	28.6	70.7	15.1	4.4	23.3	23.0	6.2	201.6
Less Labour	8.5	1.1	11.4	21.5	5.8	1.3	8.9	7.6	2.9	68.9
Less Materials & Services	5.5	1.1	9.8	22.0	6.2	1.7	9.3	6.8	2.2	64.6
Less Depreciation	1.4	0.8	6.5	7.0	2.2	0.3	3.7	2.4	0.7	25.1
Less Opportunity Cost of Capital (@10%)	1.0	1.2	8.2	6.9	2.2	0.2	3.2	4.6	0.4	27.9
Economic Rent	**11.4**	**-1.6**	**-7.3**	**13.4**	**-1.3**	**0.9**	**-1.7**	**1.6**	**-0.1**	**15.2**

[a] Excludes the River fishery and the Commonwealth managed fisheries: south east non-trawl, tuna, deep water trawl.

Source: EconSearch (2012)

Appendix 4 Financial Performance, 1997/98 to 2007/08

Appendix Table 4.1 Financial performance in the SA Southern Zone Rock Lobster fishery, 1997/98 to 1999/00 (average per boat) [a]

		1997/98		1998/99		1999/00	
		Average per Boat	Share of TBCC [b]	Average per Boat	Share of TBCC [b]	Average per Boat	Share of TBCC [b]
(1)	Total Boat Gross Income	$282,282		$263,143		$287,008	
	Variable Costs						
	Fuel	$15,486	8%	$12,657	7%	$14,367	8%
	Repairs & Maintenance [c]	$18,415	9%	$16,201	9%	$12,565	7%
	Bait/Ice	$9,482	5%	$8,233	5%	$6,229	3%
	Provisions	$3,617	2%	$3,182	2%	$2,468	1%
	Labour - paid	$79,973	41%	$76,824	43%	$86,171	46%
(2)	- unpaid [d]	$23,433	12%	$22,510	13%	$25,249	13%
	Other	$2,408	1%	$2,440	1%	$2,502	1%
(3)	**Total Variable Costs**	**$152,814**	**79%**	**$142,048**	**79%**	**$149,551**	**80%**
	Fixed Costs						
	Licence Fee	$13,152	7%	$10,810	6%	$10,179	5%
	Insurance	$4,459	2%	$3,746	2%	$3,466	2%
(4)	Interest	$9,274	5%	$8,560	5%	$9,478	5%
(5)	Labour - unpaid [d]	$4,771	2%	$4,917	3%	$5,056	3%
(6)	Leasing	$2,006	1%	$1,824	1%	$1,974	1%
	Legal & Accounting	$2,003	1%	$2,030	1%	$2,081	1%
	Telephone etc.	$1,338	1%	$1,356	1%	$1,390	1%
	Slipping & Mooring	$1,329	1%	$1,346	1%	$1,380	1%
	Travel	$1,391	1%	$1,409	1%	$1,444	1%
	Office & Admin	$1,770	1%	$1,793	1%	$1,838	1%
(7)	**Total Fixed Costs**	**$41,492**	**21%**	**$37,790**	**21%**	**$38,285**	**20%**
(8)	**Total Boat Cash Costs (3 + 7)**	**$194,307**	**100%**	**$179,838**	**100%**	**$187,836**	**100%**
	Boat Gross Margin (1 - 3)	**$129,468**		**$121,094**		**$137,457**	
(9)	**Total Unpaid Labour (2 + 5)**	**$28,204**		**$27,427**		**$30,306**	
	Gross Operating Surplus (1 - 8 + 9)	**$116,180**		**$110,731**		**$129,478**	
(10)	**Boat Cash Income (1 - 8)**	**$87,976**		**$83,304**		**$99,172**	
(11)	**Depreciation**	**$27,120**		**$27,455**		**$27,942**	
(12)	**Boat Business Profit (10 - 11)**	**$60,856**		**$55,849**		**$71,230**	
(13)	**Profit at Full Equity (12 + 4 + 6)**	**$72,135**		**$66,233**		**$82,681**	
	Boat Capital						
(14)	Fishing Gear & Equip	$237,777		$240,717		$244,988	
	Licence Value	$1,342,357		$1,232,869		$1,544,832	
(15)	**Total Boat Capital**	**$1,580,134**		**$1,473,586**		**$1,789,820**	
	Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	**30.3%**		**27.5%**		**33.7%**	
	Rate of Return on Total Boat Capital (13 / 15 * 100)	**4.6%**		**4.5%**		**4.6%**	

[a] Financial performance estimates for 1997/98 to 1999/00 are based on the October 1998 survey of licence holders.

[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: EconSearch analysis

Appendix Table 4.2 Financial performance in the SA Southern Zone Rock Lobster fishery, 2000/01 to 2002/03 (average per boat) [a]

		2000/01		2001/02		2002/03	
		Average per Boat	Share of TBCC [b]	Average per Boat	Share of TBCC [b]	Average per Boat	Share of TBCC [b]
(1)	Total Boat Gross Income	$300,610		$364,660		$354,481	
	Variable Costs						
	Fuel	$15,502	8%	$13,219	6%	$13,016	6%
	Repairs & Maintenance [c]	$12,299	6%	$10,953	5%	$10,912	5%
	Bait/Ice	$7,954	4%	$5,908	3%	$5,804	3%
	Provisions	$285	0%	$254	0%	$253	0%
	Labour - paid	$83,531	42%	$104,717	48%	$105,747	48%
(2)	- unpaid [d]	$17,822	9%	$22,342	10%	$22,562	10%
	Other	$4,472	2%	$4,595	2%	$4,780	2%
(3)	**Total Variable Costs**	**$141,864**	**72%**	**$161,989**	**74%**	**$163,074**	**74%**
	Fixed Costs						
	Licence Fee	$12,427	6%	$13,215	6%	$12,884	6%
	Insurance	$4,071	2%	$4,184	2%	$4,352	2%
(4)	Interest	$17,239	9%	$16,201	7%	$15,993	7%
(5)	Labour - unpaid [d]	$4,778	2%	$4,938	2%	$5,130	2%
(6)	Leasing	$9,818	5%	$11,772	5%	$11,126	5%
	Legal & Accounting	$2,433	1%	$2,500	1%	$2,600	1%
	Telephone etc.	$1,227	1%	$1,261	1%	$1,311	1%
	Slipping & Mooring	$1,386	1%	$1,425	1%	$1,482	1%
	Travel	$651	0%	$669	0%	$696	0%
	Office & Admin	$1,701	1%	$1,749	1%	$1,819	1%
(7)	**Total Fixed Costs**	**$55,732**	**28%**	**$57,913**	**26%**	**$57,393**	**26%**
(8)	**Total Boat Cash Costs (3 + 7)**	**$197,596**	**100%**	**$219,902**	**100%**	**$220,466**	**100%**
	Boat Gross Margin (1 - 3)	**$158,746**		**$202,671**		**$191,408**	
(9)	**Total Unpaid Labour (2 + 5)**	**$22,600**		**$27,280**		**$27,692**	
	Gross Operating Surplus (1 - 8 + 9)	**$80,414**		**$117,478**		**$106,323**	
(10)	**Boat Cash Income (1 - 8)**	**$103,014**		**$144,758**		**$134,015**	
(11)	**Depreciation**	**$39,221**		**$38,318**		**$44,520**	
(12)	**Boat Business Profit (10 - 11)**	**$63,793**		**$106,440**		**$89,495**	
(13)	**Profit at Full Equity (12 + 4 + 6)**	**$90,851**		**$134,413**		**$116,614**	
	Boat Capital						
(14)	Fishing Gear & Equip	$283,491		$276,964		$321,797	
	Licence Value	$2,378,667		$3,600,050		$3,499,566	
(15)	**Total Boat Capital**	**$2,662,157**		**$3,877,014**		**$3,821,363**	
	Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	**32.0%**		**48.5%**		**36.2%**	
	Rate of Return on Total Boat Capital (13 / 15 * 100)	**3.4%**		**3.5%**		**3.1%**	

[a] Financial performance estimates for 2000/01 to 2002/03 are based on the October 2001 survey of licence holders.

[b-d] See notes for Appendix Table 4.1

Appendix Table 4.3 Financial performance in the SA Southern Zone Rock Lobster fishery, 2003/04 to 2005/06 (average per boat) [a]

		2003/04		2004/05		2005/06	
		Average per Boat	Share of TBCC [b]	Average per Boat	Share of TBCC [b]	Average per Boat	Share of TBCC [b]
(1)	Total Boat Gross Income	$273,860		$314,212		$379,715	
	Variable Costs						
	Fuel	$15,730	8%	$18,161	10%	$21,559	10%
	Repairs & Maintenance [c]	$13,362	7%	$16,624	9%	$19,406	9%
	Bait/Ice	$7,158	4%	$8,906	5%	$10,418	5%
	Provisions	$310	0%	$299	0%	$349	0%
	Labour - paid	$84,836	42%	$59,044	32%	$74,041	34%
(2)	- unpaid [d]	$18,100	9%	$20,862	11%	$26,161	12%
	Other	$4,924	2%	$688	0%	$721	0%
(3)	**Total Variable Costs**	**$144,419**	**72%**	**$124,583**	**67%**	**$152,655**	**71%**
	Fixed Costs						
	Licence Fee	$15,061	7%	$15,762	8%	$15,832	7%
	Insurance	$4,483	2%	$6,176	3%	$6,472	3%
(4)	Interest	$16,408	8%	$21,683	12%	$21,951	10%
(5)	Labour - unpaid [d]	$5,327	3%	$7,084	4%	$7,351	3%
(6)	Leasing	$8,006	4%	$1,311	1%	$1,591	1%
	Legal & Accounting	$2,679	1%	$2,480	1%	$2,599	1%
	Telephone etc.	$1,351	1%	$1,593	1%	$1,669	1%
	Slipping & Mooring	$1,526	1%	$1,586	1%	$1,662	1%
	Travel	$717	0%	$788	0%	$826	0%
	Office & Admin	$1,874	1%	$2,559	1%	$2,681	1%
(7)	**Total Fixed Costs**	**$57,432**	**28%**	**$61,023**	**33%**	**$62,634**	**29%**
(8)	**Total Boat Cash Costs (3 + 7)**	**$201,851**	**100%**	**$185,606**	**100%**	**$215,289**	**100%**
	Boat Gross Margin (1 - 3)	**$129,441**		**$189,629**		**$227,061**	
(9)	**Total Unpaid Labour (2 + 5)**	**$23,427**		**$27,946**		**$33,512**	
	Gross Operating Surplus (1 - 8 + 9)	**$95,436**		**$156,552**		**$197,938**	
(10)	**Boat Cash Income (1 - 8)**	**$72,009**		**$128,606**		**$164,426**	
(11)	**Depreciation**	**$44,286**		**$47,960**		**$45,728**	
(12)	**Boat Business Profit (10 - 11)**	**$27,723**		**$80,646**		**$118,698**	
(13)	**Profit at Full Equity (12 + 4 + 6)**	**$52,137**		**$103,641**		**$142,240**	
	Boat Capital						
(14)	Fishing Gear & Equip	$320,105		$351,807		$335,439	
	Licence Value	$2,703,642		$2,682,397		$2,873,997	
(15)	**Total Boat Capital**	**$3,023,747**		**$3,034,204**		**$3,209,436**	
	Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	**16.3%**		**29.5%**		**42.4%**	
	Rate of Return on Total Boat Capital (13 / 15 * 100)	**1.7%**		**3.4%**		**4.4%**	

[a] Financial performance estimates for 2003/04 are based on the October 2001 survey of licence holders. Financial performance estimates for 2004/05 and 2005/06 are based on the April-May 2006 survey of licence holders.

[b-d] See notes for Appendix Table 4.1.

Source: EconSearch analysis

Appendix Table 4.4 Financial performance in the SA Southern Zone Rock Lobster fishery, 2006/07 and 2007/08 (average per boat) [a]

		2006/07		2007/08	
		Average per Boat	Share of TBCC [b]	Average per Boat	Share of TBCC [b]
(1)	Total Boat Gross Income	$453,340		$486,656	
	Variable Costs				
	Fuel	$23,925	10%	$39,453	13%
	Repairs & Maintenance [c]	$21,616	9%	$26,867	9%
	Bait/Ice	$10,916	4%	$18,767	6%
	Provisions	$389	0%	$695	0%
	Labour - paid	$91,854	37%	$108,100	36%
(2)	- unpaid [d]	$32,455	13%	$22,085	7%
	Other	$733	0%	$693	0%
(3)	**Total Variable Costs**	**$181,887**	**73%**	**$216,659**	**73%**
	Fixed Costs				
	Licence Fee	$18,685	7%	$19,316	7%
	Insurance	$6,583	3%	$6,492	2%
(4)	Interest	$23,557	9%	$26,090	9%
(5)	Labour - unpaid [d]	$7,639	3%	$7,500	3%
(6)	Leasing	$1,904	1%	$6,203	2%
	Legal & Accounting	$2,643	1%	$3,843	1%
	Telephone etc.	$1,698	1%	$1,773	1%
	Slipping & Mooring	$1,690	1%	$2,843	1%
	Travel	$840	0%	$2,152	1%
	Office & Admin	$2,727	1%	$3,992	1%
(7)	**Total Fixed Costs**	**$67,967**	**27%**	**$80,203**	**27%**
(8)	**Total Boat Cash Costs (3 + 7)**	**$249,853**	**100%**	**$296,862**	**100%**
	Boat Gross Margin (1 - 3)	**$271,453**		**$269,997**	
(9)	**Total Unpaid Labour (2 + 5)**	**$40,093**		**$29,584**	
	Gross Operating Surplus (1 - 8 + 9)	**$243,579**		**$219,378**	
(10)	**Boat Cash Income (1 - 8)**	**$203,486**		**$189,794**	
(11)	**Depreciation**	**$47,916**		**$42,367**	
(12)	**Boat Business Profit (10 - 11)**	**$155,570**		**$147,427**	
(13)	**Profit at Full Equity (12 + 4 + 6)**	**$181,032**		**$179,720**	
	Boat Capital				
(14)	Fishing Gear & Equip	$351,485		$418,617	
	Licence Value	$3,079,283		$3,272,079	
(15)	**Total Boat Capital**	**$3,430,768**		**$3,690,696**	
	Rate of Return on Fishing Gear & Equip (13 / 14 * 100)	**51.5%**		**42.9%**	
	Rate of Return on Total Boat Capital (13 / 15 * 100)	**5.3%**		**4.9%**	

[a] Financial performance estimates for 2006/07 are based on the April-May 2006 survey of licence holders. Estimates for 2007/08 are based on the January-February 2009 licence holder survey.

[b-d] See notes for Appendix Table 4.1.

Source: EconSearch analysis