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TASMANIAN FISHERIES AND AQUACULTURE INDUSTRY 2018/19: ECONOMIC CONTRIBUTIONS – KEY SECTORS

Presented by the Institute for Marine and Antarctic Studies (IMAS).
Economic estimates provided by IMAS and BDO EconSearch.



UNIVERSITY of TASMANIA

IMAS 

Institute for Marine and Antarctic Studies

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*Tasmanian Fisheries and Aquaculture
Industry 2018/19: Economic Contributions Summary
2021*

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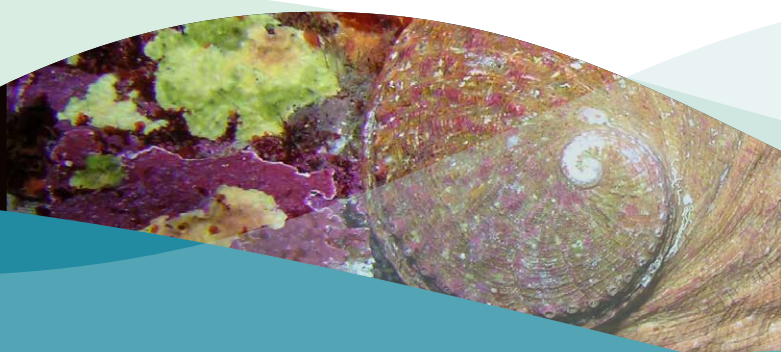
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DESIGN AND IMAGE CREDITS

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PREFACE

This report presents a summary of the economic contribution of six (6) key fisheries and aquaculture production sectors to the Tasmanian economy for the 2018/19 financial year:

- Tasmanian Rock Lobster Fishery
- Tasmanian Abalone Fishery
- Tasmanian Scalefish Fishery
- Tasmanian Salmonid Aquaculture
- Tasmanian Pacific Oyster Aquaculture
- Tasmanian Abalone Aquaculture

It details each of the above production sectors' contribution to the State economy for the 2018/19 financial year. The contribution of immediate processing or farm gate retail activity is not included.

This work was undertaken by the Institute for Marine and Antarctic Studies at the University of Tasmania in collaboration with BDO EconSearch and builds on the foundations and approach set out in *2017/18 National Fisheries and Aquaculture Industry Contributions Study* (FRDC project 2017-210).

It represents a significant step forward in measuring and monitoring the contribution of Tasmania's seafood production activities industries to the economic prosperity and wellbeing of the Tasmanian community.

The effects of COVID-19 have negatively affected levels of seafood industry activity more recently. This report therefore provides a baseline with which to continue to understand changes in economic conditions for these industries.

Estimates are based on the best available data and most appropriate methods given data availability. Full results and discussion are provided in *Tasmanian Fisheries and Aquaculture Industry 2018/19: Economic Contributions Technical Report*.

Future work will expand this analysis to include other seafood and supply chain sectors.

This report considers the economic contribution of key fishery and aquaculture industries in Tasmania. Comparisons of these measures to economic contributions reported for recreational fisheries should be made very cautiously.

A recreational fishing survey is currently underway as part of *National Social and Economic Survey of Recreational Fishers 2019* (FRDC 2018-161) and is expected to deliver information for recreational fishing in Australia at the national, State and Territory level in 2022.

CONTENTS

Fisheries Production	2
Aquaculture Production	6
Tables	10
Technical Summary	13



FISHERIES PRODUCTION

TASMANIAN ROCK LOBSTER FISHERY PRODUCTION

ECONOMIC CONTRIBUTION TO TASMANIA

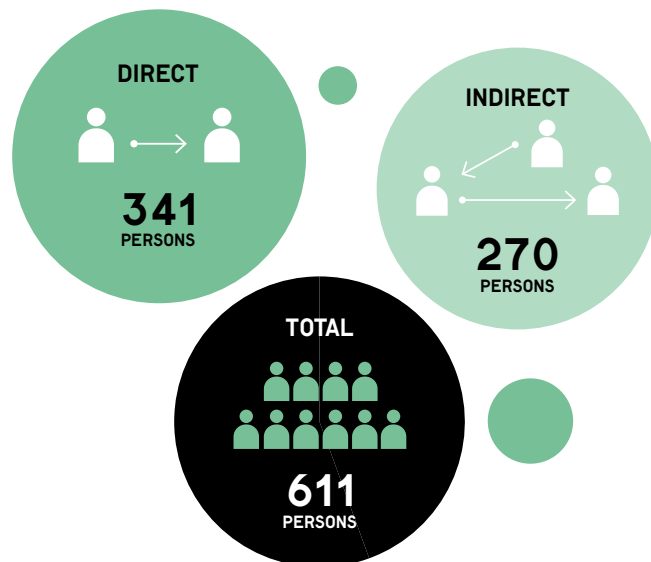
In 2018/19, the Tasmanian Rock Lobster fishery contributed \$100 million dollars (total GVA) to the Tasmanian economy.

\$100 MILLION

TOTAL GVA



CONTRIBUTION TO EMPLOYMENT IN TASMANIA



Contribution to Employment is measured as the total number of persons engaged directly or indirectly in production from the sector. It does not reflect the prevalence of part time work or those with irregular hours.

ADDING VALUE

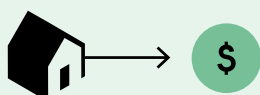
DIRECT GVA

\$66.4 MILLION

FROM CATCH/PRODUCTION

INDIRECT GVA

\$34.0 MILLION



\$20.1M

FROM HOUSEHOLD RE-SPENDING OF INCOME



\$13.9M

FROM BUSINESS RE-SPENDING IN OTHER SECTORS

HOUSEHOLD INCOME

TOTAL HOUSEHOLD INCOME

\$38.9 MILLION

FROM THE TASMANIAN ROCK LOBSTER FISHERY



\$18.9M

EARNED DIRECTLY AS INCOME BY FISHING HOUSEHOLDS



\$20.0M

EARNED IN OTHER TAS HOUSEHOLDS AS A RESULT OF ROCK LOBSTER FISHING

Gross Value Added (GVA) represents the value of all goods and services produced in an industry, minus the cost of all inputs and raw materials used to produce that good or service. It provides a measure of the net contribution of an activity to the State/Territory economies, excluding net taxes. **Note**, totals may not sum due to rounding.

Household income is a measure of wages and salaries paid in cash and in kind, drawings by owner operators and other payments to labour. It includes overtime payments, employers' superannuation contributions and income tax, but excludes payroll tax.

Note, totals may not sum due to rounding.

TASMANIAN ABALONE FISHERY PRODUCTION

ECONOMIC CONTRIBUTION TO TASMANIA

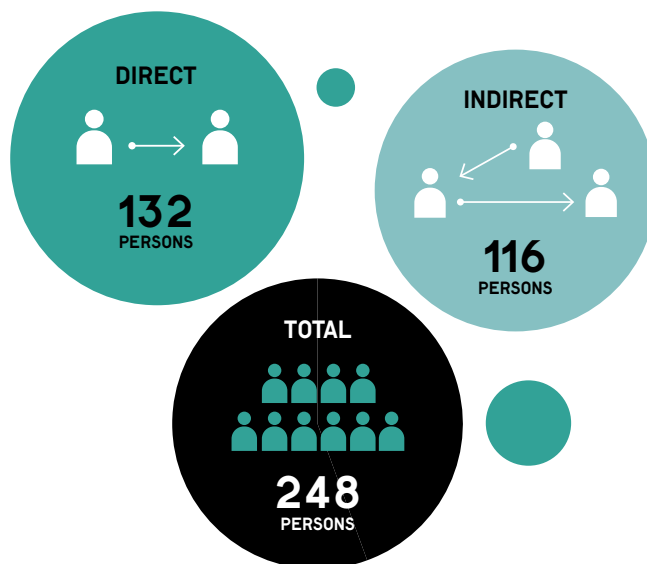
In 2018/19, the Tasmanian Abalone fishery contributed \$81 million dollars (total GVA) to the Tasmanian economy.

\$81 MILLION

TOTAL GVA



CONTRIBUTION TO EMPLOYMENT IN TASMANIA



Contribution to Employment is measured as the total number of persons engaged directly or indirectly in production from the sector. It does not reflect the prevalence of part time work or those with irregular hours.

ADDING VALUE

DIRECT GVA

\$66.7 MILLION

FROM CATCH/PRODUCTION

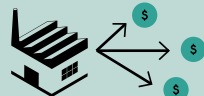
INDIRECT GVA

\$14.2 MILLION



\$8.2M

FROM HOUSEHOLD RE-SPENDING OF INCOME



\$6.0M

FROM BUSINESS RE-SPENDING IN OTHER SECTORS

HOUSEHOLD INCOME

TOTAL HOUSEHOLD INCOME

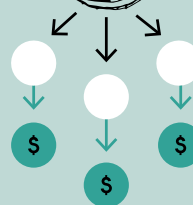
\$15.8 MILLION

FROM THE TASMANIAN ABALONE FISHERY



\$7.5M*

EARNED DIRECTLY AS INCOME BY FISHING HOUSEHOLDS



\$8.3M

EARNED IN OTHER TAS HOUSEHOLDS AS A RESULT OF ABALONE FISHING

Gross Value Added (GVA) represents the value of all goods and services produced in an industry, minus the cost of all inputs and raw materials used to produce that good or service. It provides a measure of the net contribution of an activity to the State/Territory economies, excluding net taxes. **Note**, totals may not sum due to rounding.

Household income is a measure of wages and salaries paid in cash and in kind, drawings by owner operators and other payments to labour. It includes overtime payments, employers' superannuation contributions and income tax, but excludes payroll tax. **Note**, totals may not sum due to rounding.

***Note**, imputed wage value for a small qty of unpaid quota holders' time (admin tasks related to quota owning) unaccounted for.

TASMANIAN SCALEFISH FISHERY PRODUCTION

ECONOMIC CONTRIBUTION TO TASMANIA

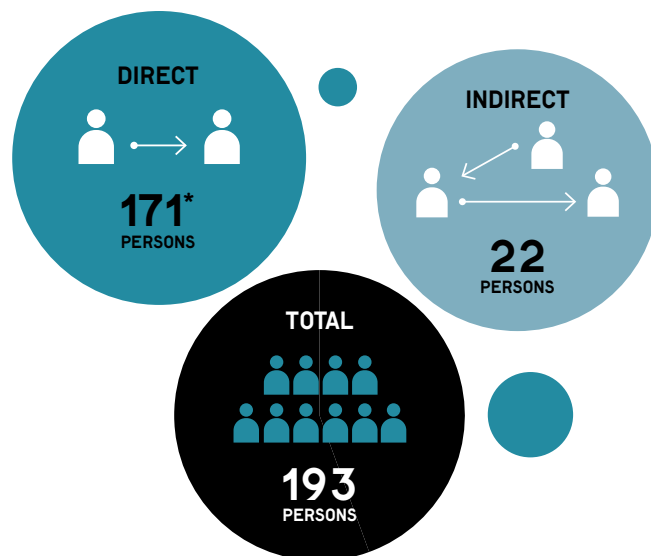
In 2018/19, the Tasmanian Scalefish fishery contributed \$5 million dollars (total GVA) to the Tasmanian economy.

\$5 MILLION

TOTAL GVA



CONTRIBUTION TO EMPLOYMENT IN TASMANIA



Contribution to Employment is measured as the total number of persons engaged directly or indirectly in production from the sector. It does not reflect the prevalence of part time work or those with irregular hours. ***Note**, this fishery has a large number of operators who work primarily in other fisheries, and take occasional or incidental Scalefish catches.

ADDING VALUE

DIRECT GVA

\$2.5 MILLION

FROM CATCH/PRODUCTION

INDIRECT GVA

\$2.8 MILLION



\$1.8M

FROM HOUSEHOLD RE-SPENDING OF INCOME



\$1.0M

FROM BUSINESS RE-SPENDING IN OTHER SECTORS

HOUSEHOLD INCOME

TOTAL HOUSEHOLD INCOME

\$3.5 MILLION

FROM THE TASMANIAN SCALEFISH FISHERY



\$1.9M

EARNED DIRECTLY AS INCOME BY FISHING HOUSEHOLDS



\$1.6M

EARNED IN OTHER TAS HOUSEHOLDS AS A RESULT OF SCALEFISH FISHING

Gross Value Added (GVA) represents the value of all goods and services produced in an industry, minus the cost of all inputs and raw materials used to produce that good or service. It provides a measure of the net contribution of an activity to the State/Territory economies, excluding net taxes. **Note**, totals may not sum due to rounding.

Household income is a measure of wages and salaries paid in cash and in kind, drawings by owner operators and other payments to labour. It includes overtime payments, employers' superannuation contributions and income tax, but excludes payroll tax. **Note**, totals may not sum due to rounding.

AQUACULTURE PRODUCTION

TASMANIAN SALMONID AQUACULTURE PRODUCTION*

ECONOMIC CONTRIBUTION TO TASMANIA

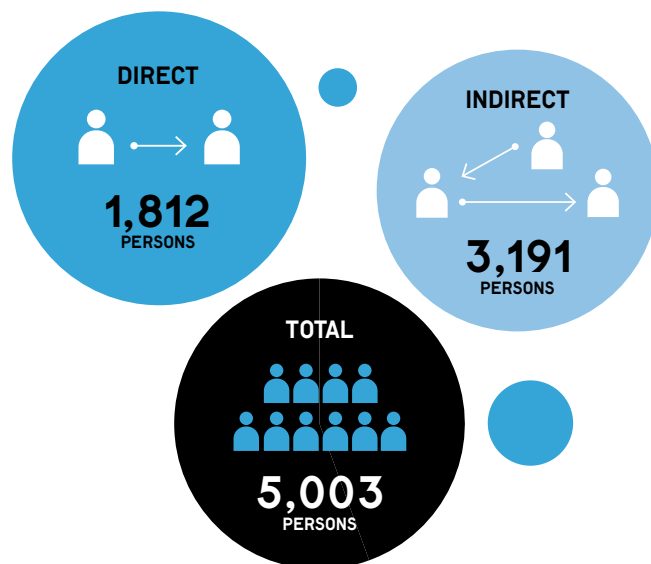
In 2018/19, the Tasmanian Salmonid aquaculture contributed \$650 million dollars (total GVA) to the Tasmanian economy.

\$650 MILLION

TOTAL GVA



CONTRIBUTION TO EMPLOYMENT IN TASMANIA



Contribution to Employment is measured as the total number of persons engaged directly or indirectly in production from the sector. It does not reflect the prevalence of part time work or those with irregular hours.

ADDING VALUE

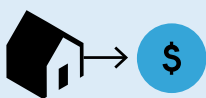
DIRECT GVA

\$230.3 MILLION

FROM CATCH/PRODUCTION

INDIRECT GVA

\$419.2 MILLION



\$187.0M

FROM HOUSEHOLD
RE-SPENDING
OF INCOME



\$232.2M

FROM BUSINESS
RE-SPENDING
IN OTHER SECTORS

Gross Value Added (GVA) represents the value of all goods and services produced in an industry, minus the cost of all inputs and raw materials used to produce that good or service. It provides a measure of the net contribution of an activity to the State/Territory economies, excluding net taxes. **Note**, totals may not sum due to rounding.

HOUSEHOLD INCOME

TOTAL HOUSEHOLD INCOME

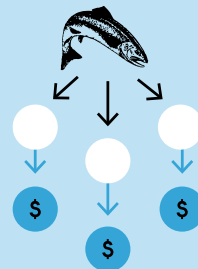
\$361.7 MILLION

FROM TASMANIAN SALMONID AQUACULTURE



\$122.5M

EARNED DIRECTLY
AS INCOME BY
FISHING HOUSEHOLDS



\$239.2M

EARNED IN OTHER TAS
HOUSEHOLDS AS A RESULT
OF SALMONID AQUACULTURE

Household income is a measure of wages and salaries paid in cash and in kind, drawings by owner operators and other payments to labour. It includes overtime payments, employers' superannuation contributions and income tax, but excludes payroll tax. **Note**, totals may not sum due to rounding.

*These estimates rely on secondary data and data matching methods and as such should be treated with caution. Provision of primary data from industry would improve the accuracy of these estimates, so that they could be better relied upon.

TASMANIAN PACIFIC OYSTER AQUACULTURE PRODUCTION

ECONOMIC CONTRIBUTION TO TASMANIA

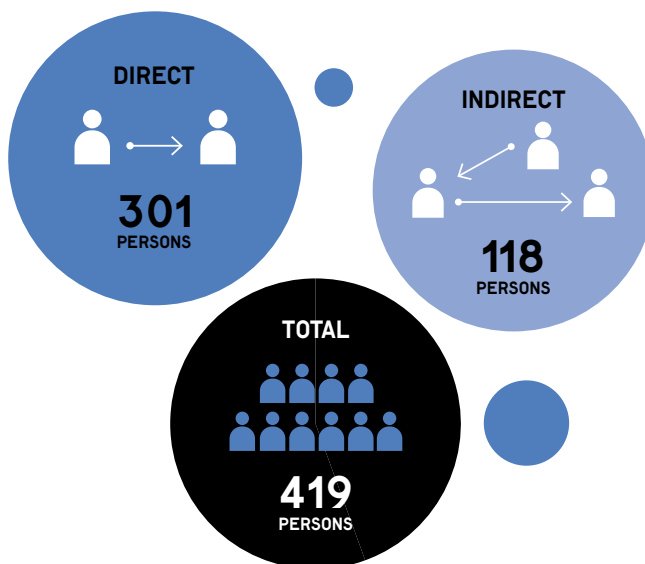
In 2018/19, Tasmanian Pacific Oyster aquaculture contributed \$35 million dollars (total GVA) to the Tasmanian economy.

\$35 MILLION

TOTAL GVA



CONTRIBUTION TO EMPLOYMENT IN TASMANIA



Contribution to Employment is measured as the total number of persons engaged directly or indirectly in production from the sector. It does not reflect the prevalence of part time work or those with irregular hours.

ADDING VALUE

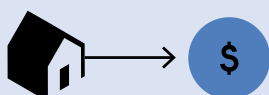
DIRECT GVA

\$19.7 MILLION

FROM CATCH/PRODUCTION

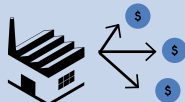
INDIRECT GVA

\$15.0 MILLION



\$9.6M

FROM HOUSEHOLD RE-SPENDING OF INCOME



\$5.3M

FROM BUSINESS RE-SPENDING IN OTHER SECTORS

HOUSEHOLD INCOME

TOTAL HOUSEHOLD INCOME

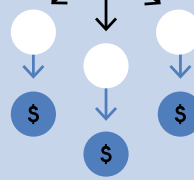
\$18.6 MILLION

FROM TASMANIAN PACIFIC OYSTER AQUACULTURE



\$10.5M

EARNED DIRECTLY AS INCOME BY FISHING HOUSEHOLDS



\$8.2M

EARNED IN OTHER TAS HOUSEHOLDS AS A RESULT OF PACIFIC OYSTER AQUACULTURE

Gross Value Added (GVA) represents the value of all goods and services produced in an industry, minus the cost of all inputs and raw materials used to produce that good or service. It provides a measure of the net contribution of an activity to the State/Territory economies, excluding net taxes. **Note**, totals may not sum due to rounding.

Household income is a measure of wages and salaries paid in cash and in kind, drawings by owner operators and other payments to labour. It includes overtime payments, employers' superannuation contributions and income tax, but excludes payroll tax. **Note**, totals may not sum due to rounding.

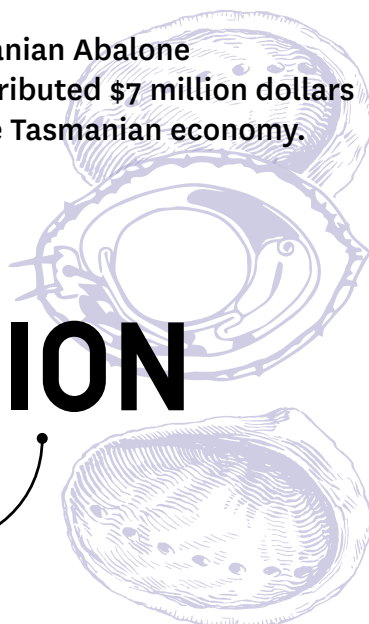
TASMANIAN ABALONE AQUACULTURE PRODUCTION

ECONOMIC CONTRIBUTION TO TASMANIA

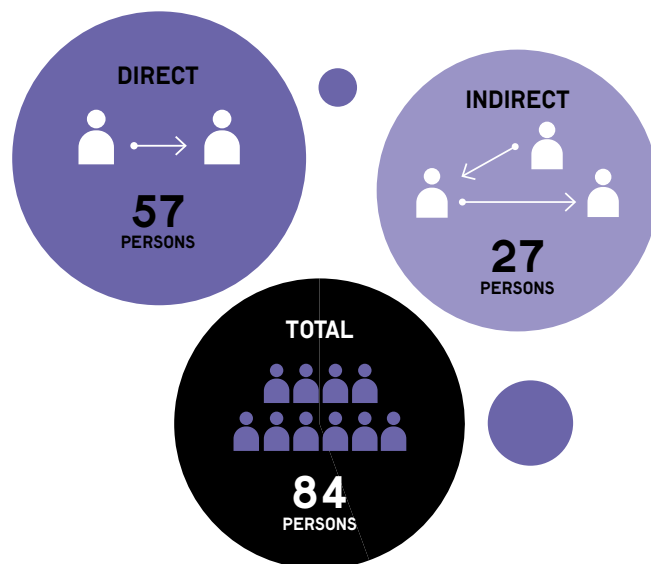
In 2018/19, Tasmanian Abalone aquaculture contributed \$7 million dollars (total GVA) to the Tasmanian economy.

\$7 MILLION

TOTAL GVA



CONTRIBUTION TO EMPLOYMENT IN TASMANIA



Contribution to Employment is measured as the total number of persons engaged directly or indirectly in production from the sector. It does not reflect the prevalence of part time work or those with irregular hours.

ADDING VALUE

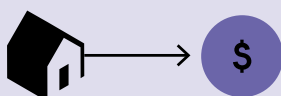
DIRECT GVA

\$3.3 MILLION

FROM CATCH/PRODUCTION

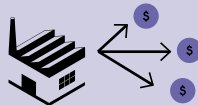
INDIRECT GVA

\$3.7 MILLION



\$2.2M

FROM HOUSEHOLD
RE-SPENDING
OF INCOME



\$1.5M

FROM BUSINESS
RE-SPENDING
IN OTHER SECTORS

HOUSEHOLD INCOME

TOTAL HOUSEHOLD INCOME

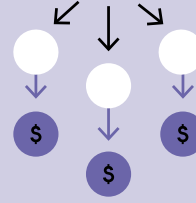
\$4.2 MILLION

FROM TASMANIAN ABALONE AQUACULTURE



\$2.2M

EARNED DIRECTLY
AS INCOME BY
FISHING HOUSEHOLDS



\$2.0M

EARNED IN OTHER TAS
HOUSEHOLDS AS A RESULT
OF ABALONE AQUACULTURE

Gross Value Added (GVA) represents the value of all goods and services produced in an industry, minus the cost of all inputs and raw materials used to produce that good or service. It provides a measure of the net contribution of an activity to the State/Territory economies, excluding net taxes. **Note**, totals may not sum due to rounding.

Household income is a measure of wages and salaries paid in cash and in kind, drawings by owner operators and other payments to labour. It includes overtime payments, employers' superannuation contributions and income tax, but excludes payroll tax. **Note**, totals may not sum due to rounding.

TABLE 1. ECONOMIC CONTRIBUTION OF TASMANIAN COMMERCIAL FISHING AND AQUACULTURE PRODUCTION TO TASMANIA, 2018/19

		GROSS VALUE ADDED (\$M)	EMPLOYMENT (NO. PERS.)	HOUSEHOLD INCOME (\$M)	REVENUE (\$M)
TASMANIAN ROCK LOBSTER FISHERY	DIRECT				
	Fishing	66.4	341	18.9	87.4
	INDIRECT (ALL OTHER SECTORS)				
	Production induced	13.9	101	9.5	—
	Consumption induced	20.1	169	10.4	—
	Total indirect	34.0	270	20.0	—
	TOTAL ^A	100.4	611	38.9	—
TASMANIAN ABALONE FISHERY	DIRECT				
	Fishing	66.7	132	7.5	73.9
	INDIRECT (ALL OTHER SECTORS)				
	Production induced	6.0	47	4.0	—
	Consumption induced	8.2	69	4.2	—
	Total indirect	14.2	116	8.3	—
	TOTAL ^A	80.8	248	15.8	—
TASMANIAN SCALEFISH FISHERY	DIRECT				
	Fishing	2.5	171	1.9	4.3
	INDIRECT (ALL OTHER SECTORS)				
	Production induced	1.0	7	0.7	—
	Consumption induced	1.8	15	0.9	—
	Total indirect	2.8	22	1.6	—
	TOTAL ^A	5.3	193	3.5	—
TASMANIAN SALMONID AQUACULTURE	DIRECT				
	Aquaculture	230.3	1,812	122.5	646.3
	INDIRECT (ALL OTHER SECTORS)				
	Production induced	232.2	1,619	142.1	—
	Consumption induced	187.0	1,572	97.1	—
	Total indirect	419.2	3,191	239.2	—
	TOTAL ^A	649.6	5,003	361.7	—
TASMANIAN PACIFIC OYSTER AQUACULTURE	DIRECT				
	Aquaculture	19.7	301	10.5	29.0
	INDIRECT (ALL OTHER SECTORS)				
	Production induced	5.3	37	3.2	—
	Consumption induced	9.6	81	5.0	—
	Total indirect	15.0	118	8.2	—
	TOTAL ^A	34.7	419	18.6	—
TASMANIAN ABALONE AQUACULTURE	DIRECT				
	Aquaculture	3.3	57	2.2	5.9
	INDIRECT (ALL OTHER SECTORS)				
	Production induced	1.5	9	0.9	—
	Consumption induced	2.2	18	1.1	—
	Total indirect	3.7	27	2.0	—
	TOTAL ^A	7.0	84	4.2	—

A Totals may not sum due to rounding. Source: 2018/19 Social-Economic survey of Tasmanian commercial rock lobster fishers, 2018/19 Social-Economic survey of Tasmanian scalefish fishers, DPIPWE FILMS database, Knuckey & Sen (2017), KPMG (2015), company annual reports, and IMAS analysis.

**TABLE 2. TASMANIAN OVERSEAS SEAFOOD EXPORTS, KEY SECTORS
BY EXPORT VALUE, 2018/19**

SEAFOOD CATEGORY	EXPORT QUANTITY		EXPORT VALUE ^A		AVERAGE VALUE (\$/kg)
	(Tonnes)	(%)	(\$m)	(%)	
Atlantic & Pacific Salmon (salmonid)	8,653	84.3%	107.2	51.7%	12.4
Farmed and Wildcatch Abalone ^E	770	7.5%	72.4	34.9%	94.0
Rock Lobster ^E	128	1.2%	14.1	6.8%	110.7
Filletted and Whole Fish ^B	330	3.2%	2.4	1.2%	7.4
Trout (salmonid)	85	0.8%	1.2	0.6%	14.3
Oysters	7	0.1%	0.1	0.1%	17.8
Other ^C	291	2.8%	9.8	4.7%	33.6
Total^{CD}	10,265	100.0%	207.3	100.0%	20.2

A Export values are in terms of Free on Board (FOB) values. FOB values exclude the cost of freight and merchandise insurance involved in shipping the goods beyond the place of export up to the customs frontier of the importing country.

B Category inclusive of species caught in Commonwealth-managed fisheries, and potentially species caught in the Tasmanian Scalefish Fishery for 2018/19.

C "Other" includes Ornamental fish, of which export quantity is measured by number of specimens. The reported export quantity and export price figures exclude Ornamental fish due to differences in units of measurement.

D Totals may not sum due to rounding.

E The export value of rock lobster and abalone only includes direct international exports from Tasmania and does not include product which is consolidated interstate prior to export. Most abalone and rock lobster were ultimately exported overseas for the 2018/19 year; for example, industry estimates that around 90% of Tasmanian rock lobsters caught during 2018/19 were exported in that year.

Source: ABS (2020) and IMAS analysis.



TECHNICAL SUMMARY

This is a summary of the economic contributions of Tasmania's fisheries and aquaculture industries to the Tasmanian economy. Full results and discussion are provided in *Tasmanian Fisheries and Aquaculture Industry 2018/19: Economic Contributions Technical Report*.

SCOPE

The estimates reported include economic contributions of commercial fishing production activity and aquaculture production activity.

These estimates are for economic contributions of these activities in Tasmania to the Tasmanian economy.

Commercial activities by Indigenous fishing and aquaculture businesses are included in commercial fishing and aquaculture. Commercial charter fishing activity is excluded. Fishery and aquaculture sector management activity (other than where these costs are recovered through licence fees) is excluded. Seafood processing of either locally produced or imported seafood is excluded. The analysis relates to the primary production units only (i.e., the harvesting or farming activities).

The economic activity of sectors that supply goods and services to the commercial fishing and aquaculture industry are included in the analysis as the flow-on effects from the expenditures by the commercial fishing and aquaculture industry. This includes fishing support services and aquaculture support services.

The contributions of Tasmanian fisheries and aquaculture to the rest of Australia are outside the scope of this report.

DATA

Best available data for 2018/19 was used to produce estimates of industry total revenue, and of direct employment, GVA, GSP/GDP and household income. Data was collected from primary sources (databases and surveys) and published sources, where available, for the individual fisheries/aquaculture sectors. This data included: wild catch/farm production, product prices, cost of production, licence fees, employment. Further information on data sources is provided in the *Tasmanian Fisheries and Aquaculture Industry 2018/19: Economic Contributions Technical Report*.

MODEL APPROACH

The flow-on effects of each fishery and aquaculture sector in this report were estimated using input-output (IO) analysis. An extended input-output model known as the RISE model (Regional Industry Structure and Employment) was developed by BDO EconSearch for this analysis. The model describes the interlinkages between different industries and different types of economic activity in Tasmania's economy.

LIMITATIONS

The main limitations are due to data gaps and issues with data quality for some sectors. Limited data was available to estimate the contributions of the processing sector, and as such the estimates for this sector have been omitted from the current report. Similarly, the estimates present an incomplete profile of economic contributions made along the seafood supply chain, as secondary processing and retail sectors are not included due to lack of data. Addressing this by collecting data on these sectors presents an opportunity to produce more comprehensive estimates in future.

Likewise, the provision of primary data for the Tasmanian Salmonid Aquaculture sector would improve accuracy so those results could be better relied upon.

COMPARISON

Comparisons of these estimates can also be made with other productive industries (for example, beef or sheep). These will be less reliable due to differences in the number of sectors included (this study included only the catch/production sector), data availability and quality, and modelling across various studies.

The use of these estimates to predict the impact of changes in the level of activity of the fisheries and aquaculture industries is not advised. While results can be used to highlight the possible size and nature of impacts, further analysis would be required to estimate the actual impact on the economic measures of such changes.

Comparisons of the economic contributions of commercial fisheries and recreational fisheries (made as fishing-related expenditures generate direct and indirect economic impacts) need to be made very cautiously. The two activities are fundamentally different and require different input-output modelling approaches, and comparison can only be made where estimates are comprehensive.

For commercial fisheries this requires that estimates include backward and forward linked sectors (for example, boat building sectors, as well as seafood retail sectors). For recreational fisheries this requires that only expenditures that are directly attributable to fishing are included in the estimate.

The use of estimates of economic contributions to predict the impact on a state or territory economy of changes in resource allocation between commercial and recreational fisheries can complement economic benefit or efficiency analysis. However, it will require further knowledge to determine how inputs would be redeployed in the economy by other sectors where commercial fishing is no longer occurring, and how recreational fishers would spend their discretionary income on substitutable activities were they not able to recreationally catch fish.

This work also supports the ability for individual industries and jurisdictions to monitor trends in the size of contributions over time.

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