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TASMANIAN FISHERIES AND AQUACULTURE INDUSTRY 2017/18: ECONOMIC CONTRIBUTIONS SUMMARY

Presented by the Fisheries Research and Development Corporation and the Institute for Marine and Antarctic Studies.
Economic estimates provided by BDO EconSearch.

FRDC UNIVERSITY of TASMANIA IMAS BDO

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Tasmanian Fisheries and Aquaculture Industry 2017/18: Economic Contributions Summary
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ACKNOWLEDGMENTS

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PREFACE

This report presents a summary of the economic contribution of Tasmania's fisheries and aquaculture industries to the Tasmanian community.

This work is an exciting step forward that lays the groundwork for the Tasmanian seafood industry to celebrate its economic contributions and to showcase these to its communities and to Tasmanians in general. It also provides the starting point for monitoring contributions to Tasmania's economic prosperity over time.

The FRDC on behalf of the Australian Government funded the *National Fisheries and Aquaculture Industry Contributions Study (FRDC project 2017-210)* to produce evidence of industry's contributions. The project was undertaken by the Institute for Marine and Antarctic Studies, University of Tasmania. As part of this project, BDO EconSearch was commissioned to provide an estimate of the economic contribution of Australia's fisheries and aquaculture industries in each state and territory to the Australian community, and to the relevant state or territory community, that is aimed at helping industry tell the story of its contribution.

This summary presents the results of this study for Tasmania.

This is the first time the economic contribution of the Tasmanian seafood industry has been reported at the state and national level. Estimates are based on the best available data and most appropriate methods given data availability. Full results are provided in the *Australian Fisheries and Aquaculture Industry 2017/18: Economic Contributions Estimates Report* and demonstrate the nationally consistent approach.

Project Steering Committee, National Fisheries and Aquaculture Industry Contributions Study (FRDC project 2017–210)

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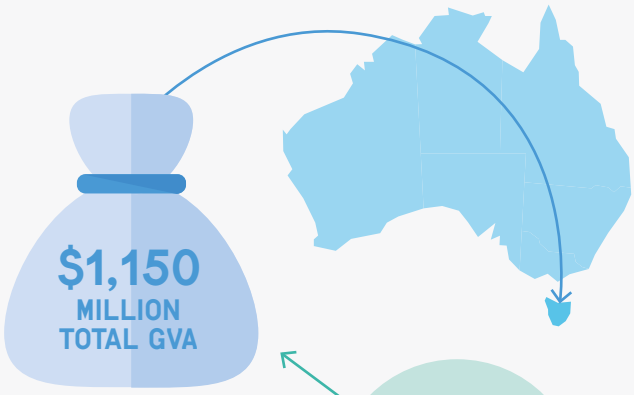
CONTRIBUTING TO TASMANIA'S ECONOMIC PROSPERITY

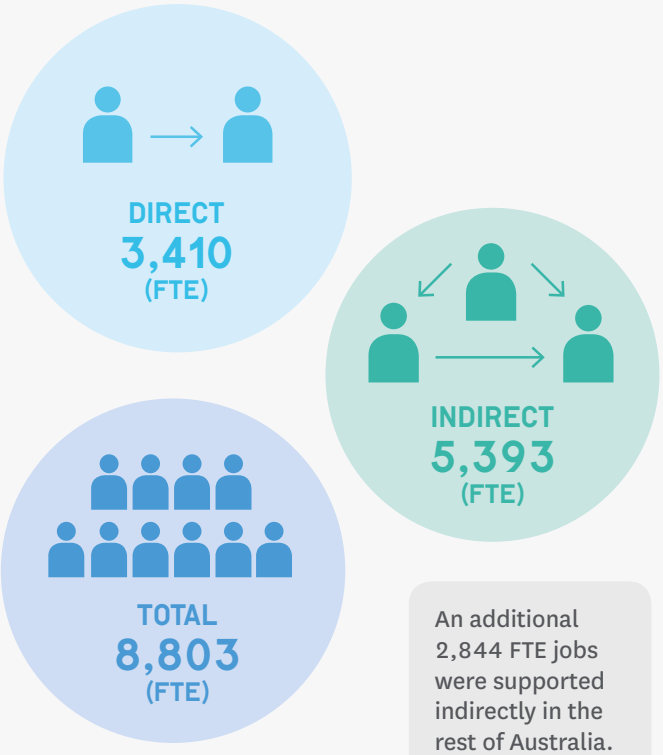
ECONOMY

In 2017/18, TAS's fishing, aquaculture and associated processing industries contributed $1,150 million dollars (total GVA) to the TAS economy.



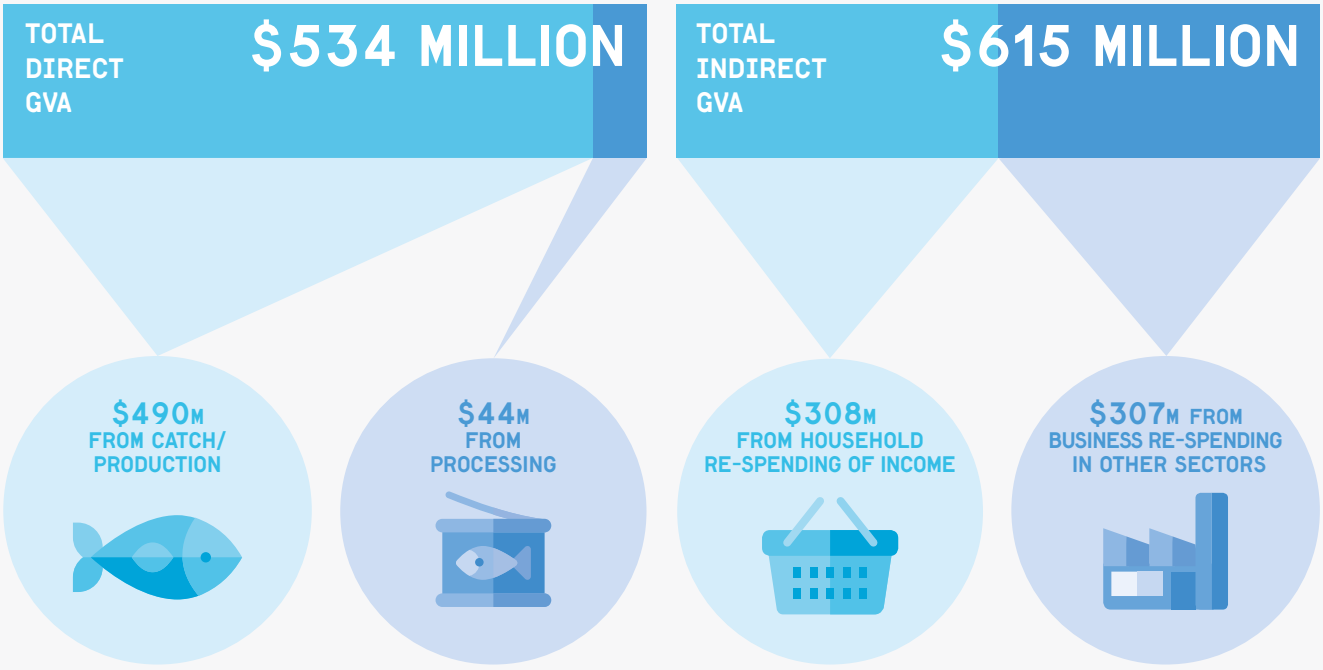
An additional $364 million GVA was generated indirectly in the rest of Australia.

EMPLOYMENT



An additional 2,844 FTE jobs were supported indirectly in the rest of Australia.

ADDING VALUE



Note, totals may not sum due to rounding. Some sub-sectors have not been included in the estimates due to data not being available. See Table 3 for details.

ECONOMIC CONTRIBUTIONS

GROSS VALUE ADDED

In 2017/18, total fishery and aquaculture GVA in TAS was $1,150 million

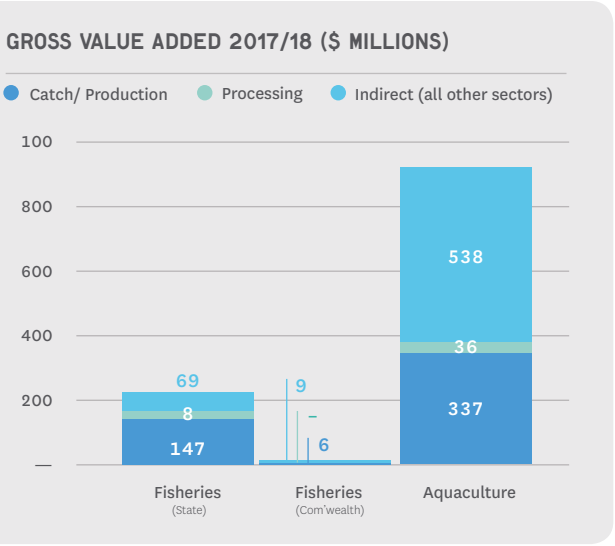
$490 million generated by fishing and aquaculture

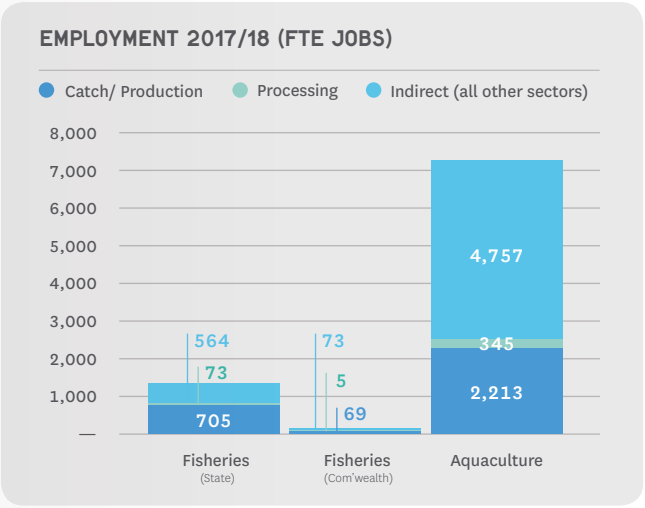
$44 million generated by associated seafood processing activities

$615 million generated by flow-on business activity in other sectors of the economy

An additional $364 million generated by TAS fishing, aquaculture and associated processing in other states and territories of Australia

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.





EMPLOYMENT

In 2017/18, total employment contribution to TAS was 8,803 full-time equivalent (FTE) jobs.

2,987 FTE jobs contributed by fisheries and aquaculture

423 FTE jobs contributed by associated seafood processing

5,393 FTE jobs contributed by flow-on business activity in other sectors

An additional 2,844 FTE jobs generated by TAS fishing, aquaculture and associated processing indirectly in other states and territories of Australia

HOUSEHOLD INCOME

In 2017/18, total household income contribution in TAS was $597 million

$196 million earned as income in fishing and aquaculture

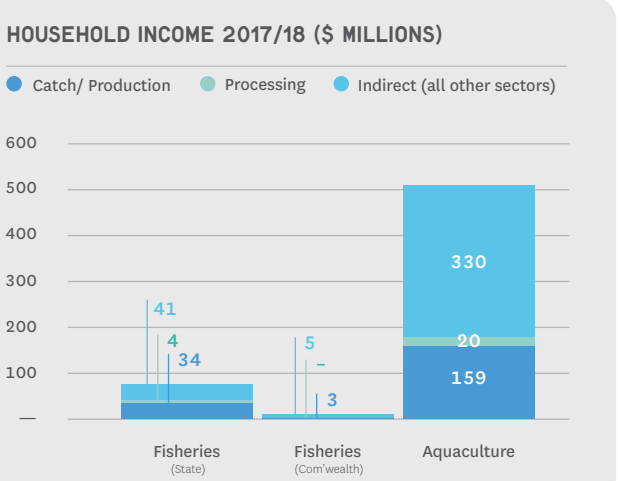
$24 million earned in associated seafood processing

$377 million earned in other businesses in TAS as a result of fishing, aquaculture and associated processing activities

An additional $221 million generated by TAS fishing, aquaculture and associated processing indirectly in other states and territories of Australia

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, employer's superannuation contributions and income tax, but excludes payroll tax.

Note, totals may not sum due to rounding.



ECONOMIC ACTIVITY

GROSS VALUE OF PRODUCTION

In 2017/18, GVP of TAS fisheries, aquaculture and associated seafood processing was **$1,182 million**

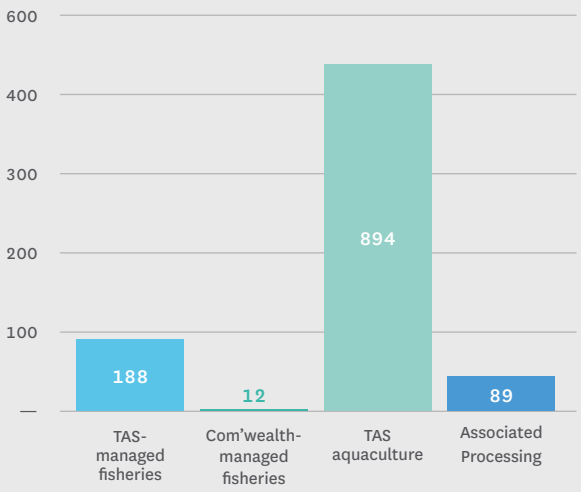
16% from TAS managed fisheries catch

1% from Commonwealth-managed fisheries catch landed in TAS

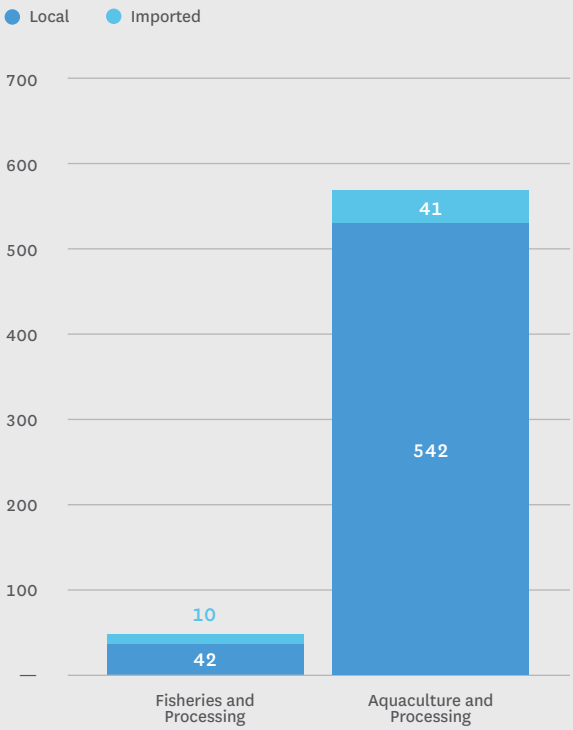
76% from TAS aquaculture production

7% from associated seafood processing

GVP OF CATCH/PRODUCTION AND PROCESSING ($ MILLIONS)



EXPENDITURE ($ MILLIONS)



EXPENDITURE

In 2017/18, total (non-wage) expenditure by TAS fishing, aquaculture and processing businesses was **$635 million**

81% of total initial expenditure by fisheries and associated seafood processing was local

93% of total initial expenditure by aquaculture and associated seafood processing was local

Major sectors receiving payments from TAS fisheries, aquaculture and associated processing were:

- Food supply (bait and fish feed)
- Administratrion support services
- Professional, scientific and technical services
- Road transport
- Manufactured products

Local expenditure excludes: wages, imports (i.e. diesel), indirect taxes (i.e. fuel excise), intra-industry purchases (i.e. fish for bait or processing) and items that represent a return to capital (i.e. quota leasing, insurance and interest). A margin was included for some of these items. Defining expenditure this way avoids overstating flow-on economic contributions.

TABLE 1. ECONOMIC CONTRIBUTION OF TAS COMMERCIAL FISHING AND AQUACULTURE TO TAS, 2017/18

	GROSS VALUE ADDED ($M)	EMPLOYMENT (FTE JOBS)	HOUSEHOLD INCOME ($M)	GVP ($M)
FISHING (TAS MANAGED)				
DIRECT				
Fishing	147	705	34	188
Processing	8	73	4	15
INDIRECT (ALL OTHER SECTORS)[A]				
Production induced	28	248	20	—
Consumption induced	41	317	21	—
Total indirect	**69**	**564**	**41**	—
TOTAL[B]	**224**	**1,342**	**79**	**203**
FISHING (COMMONWEALTH MANAGED)				
DIRECT				
Fishing	6	69	3	12
Processing	0	5	0	1
INDIRECT (ALL OTHER SECTORS)[A]				
Production induced	4	36	3	—
Consumption induced	5	37	2	—
Total indirect	**9**	**73**	**5**	—
TOTAL[B]	**15**	**146**	**9**	**13**
AQUACULTURE				
DIRECT				
Production	337	2,213	159	894
Processing	36	345	20	73
INDIRECT (ALL OTHER SECTORS)[A]				
Production induced	275	2,705	193	—
Consumption induced	263	2,052	138	—
Total indirect	**538**	**4,757**	**330**	—
TOTAL[B]	**911**	**7,315**	**508**	**966**
FISHING AND AQUACULTURE TOTAL				
DIRECT				
Catch and Production	490	2,987	196	1,094
Processing	44	423	24	89
INDIRECT (ALL OTHER SECTORS)[A]				
Production induced	307	2,988	215	—
Consumption induced	308	2,405	161	—
Total indirect	**615**	**5,393**	**377**	—
TOTAL[B]	**1,150**	**8,803**	**597**	**1,182**

A Indirect GVP effects are excluded to avoid double counting.
B Totals may not sum due to rounding.

Source: DPIPWE, IMAS, Knuckey & Sen (2017), KPMG (2015), EconSearch (2013), BDO EconSearch (2019b,c,f,g,h,i,l), Bath et al. (2018), George et al. (2012), KPMG (2015) and BDO EconSearch analysis.

TECHNICAL SUMMARY

This is a summary of the economic contributions of Tasmania's fisheries, aquaculture and associated processing industries to the Tasmanian economy. The full national report of economic estimates is the *Australian Fisheries and Aquaculture Industry 2017/18: Economic Contributions Estimates Report*.

SCOPE

The estimates reported includes economic contributions of: commercial fishing activity; aquaculture activity; associated processing 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 locally produced seafood is included where it occurs within Tasmania. Processing of imported seafood is excluded.

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. Contributions of Tasmanian fisheries and aquaculture to the rest of Australia are also reported.

DATA

Best available data for 2017/18 was used to produce estimates of GVP, and of direct employment, GVA, GSP/GDP and household income. Data was collected from primary sources (databases) 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 and validation is provided in the Australian Fisheries and Aquaculture Industry Economic Contributions – Data Framework.

Where cost data was not available for a particular sub-sector, it was matched with an equivalent sub-sector for which data was available and cost data was then imputed based on available activity data (including: production, GVP, total days fished, average vessel length, active vessels).

Fisheries or aquaculture sub-sectors excluded from the analysis due to lack of data are listed in Table 4.

MODEL APPROACH

The flow-on effects of State and Territory fisheries, Commonwealth fisheries and aquaculture sectors for each State or Territory were estimated using multi-region input-output (MRIO) analysis. An extended input-output model known as the RISE model (Regional Industry Structure and Employment) was used. The model includes one region for each state and territory in Australia and captures the interstate trade effects between them.

LIMITATIONS

The main limitations are due to data gaps and issues with data quality for some sectors. These were identified in the process of building the national data framework which supports the estimation of contributions.

Limited data was available to estimate the contributions of the processing sector, and the estimates of the processing sector should be regarded as preliminary. 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.

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 and processing sectors), 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 were commercial fishing no longer occurring, and how recreational fishers would spend their discretionary income on substitutable activities were they not able to recreationally fish.

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

APPENDIX 1
BACKGROUND DATA

TABLE 2: CATCH, PRODUCTION AND GVP OF THE TOP FIVE CONTRIBUTORS (BY GVP) TO TAS COMMERCIAL FISHING AND AQUACULTURE IN 2017/18

RANK	DESCRIPTION	CATCH/ PRODUCTION (T)[A]	GVP ($M)	VALUE PER UNIT ($KG)[B]
	FISHERIES (TAS MANAGED)			
1	Rock Lobster	1,148	93	81.26
2	Abalone	1,473	86	58,69
3	Scalefish	378	4	11.04
4	Giant Crab & Octopus	132	3	22.98
5	Commercial Dive	321	1	3.46
	Other fisheries	7	0	12.21
	Total wild caught	**3,458**	**188**	—
	FISHERIES (COMMONWEALTH MANAGED)			
1	Southern and Eastern Scalefish and Shark (Commonwealth Trawl Sector)	1,332	6	4.31
2	Southern and Eastern Scalefish and Shark (Gillnet Hook and Trap Sector)	487	3	6.33
3	Bass Strait Central Zone Scallop	1,447	3	2.04
4	Southern Squid Jig	30	0	2.75
	Total wild caught	**3,296**	**12**	—
	AQUACULTURE			
1	Salmonids	60,048	865	14.40
2	Oysters	2,523	23	9.18
3	Abalon	98	3	35.00
4	Mussels	592	2	4.00
	Total production[C]	**60,738**	**894**	—

A Production of Oysters are reported per thousand dozen.
B Value per unit of Oysters are by dollars per dozen.
C Production totals excludes Oysters (reported by '000 dozen).
n.a. not available
Source: DPIPWE, IMAS, ABARES and BDO EconSearch analysis

TABLE 3: TAS OVERSEAS SEAFOOD EXPORTS, TOP CONTRIBUTORS BY EXPORT VALUE, 2017/18

RANK	SEAFOOD CATEGORY [A]	EXPORT QUANTITY		EXPORT VALUE [B]		AVERAGE VALUE ($/kg)
		(Tonnes)	(%)	($m)	(%)	
1	Atlantic & pacific salmon	11,414	87	129.0	53	11.3
2	Abalone	1,095	8	84.7	35	77.3
3	Rock lobster	136	1	14.1	6	103.9
4	Toothfish	308	2	11.3	5	36.6
5	Trout	86	1	1.2	1	14.3
6	Eels	29	0	0.6	0	21.0
7	Fish livers, roes & milt	7	0	0.4	0	66.6
8	Preserved fish	2	0	0.2	0	83.6
9	Oysters	7	0	0.1	0	17.7
10	Sea cucumbers	1	0	0.1	0	146.2
	Other[C]	30	0	0.1	0	—
	Total[CD]	**13,113**	**100**	**241.9**	**100**	**18.4**

A Ranked by export value. Seafood categories are defined in Appendix 3, Australian Fisheries and Aquaculture Industry 2017/18: Economic Contributions Estimates Report (BDO 2019). The analysis of exports was based on a customised report from the ABS for *International Merchandise Trade, 2017-18*. Exports (quantity and FOB value) were reported by species/category for each State of origin. The State of origin is the State/Territory in which the final stage of production or manufacture occurs and may not be the State/Territory where the fish was caught/produced.
B 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.
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.
Source: ABS (2019) and BDO EconSearch analysis.

TABLE 4: TAS FISHERIES AND AQUACULTURE SUB-SECTORS EXCLUDED FROM THE ANALYSIS

FISHERY	REASON FOR EXCLUSION
TAS Marine Plant	No basis to estimate costs
AQUACULTURE SUB-SECTOR	**REASON FOR EXCLUSION**
TAS Seahorses	No published production data or means to estimate it.

Source: Australian Fisheries and Aquaculture Industry 2017/18: Economic Contributions Estimates Report (BDO 2019).

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