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QUEENSLAND 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.



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Queensland Fisheries and Aquaculture Industry 2017/18: Economic Contributions Summary
FRDC project 2017-210
2019

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IMAGE CREDITS

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PREFACE

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

This work is an exciting step forward that lays the groundwork for the Queensland seafood industry to celebrate its economic contributions and to showcase these to its communities and to Queenslanders in general. It also provides the starting point for monitoring contributions to Queensland'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 Queensland.

This is the first time the economic contribution of the Queensland 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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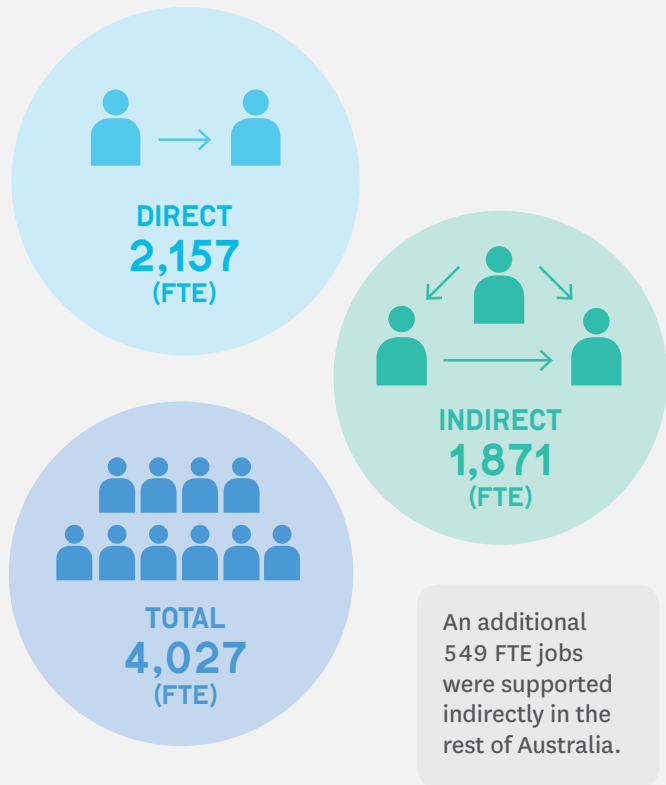
CONTRIBUTING TO QUEENSLAND'S ECONOMIC PROSPERITY

ECONOMY

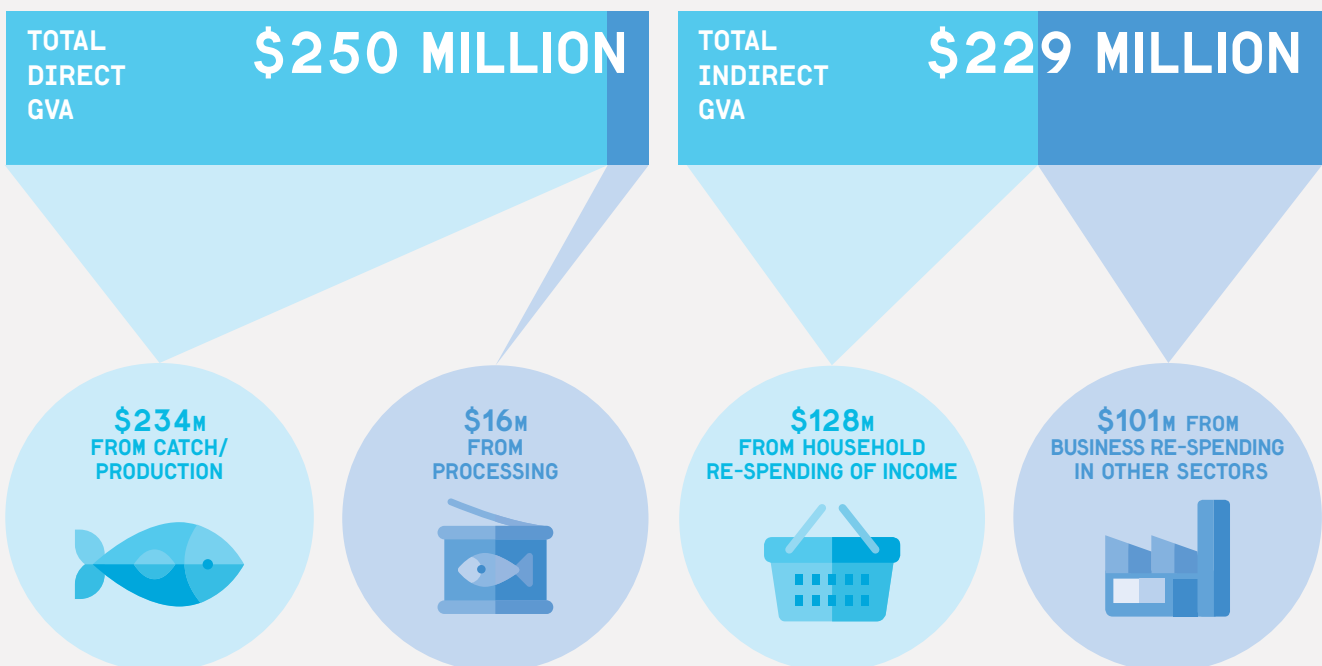
In 2017/18, QLD's fishing, aquaculture and associated processing industries contributed \$479 million dollars (total GVA) to the QLD economy.



EMPLOYMENT



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 QLD was **\$479 million**

\$234 million generated by fishing and aquaculture

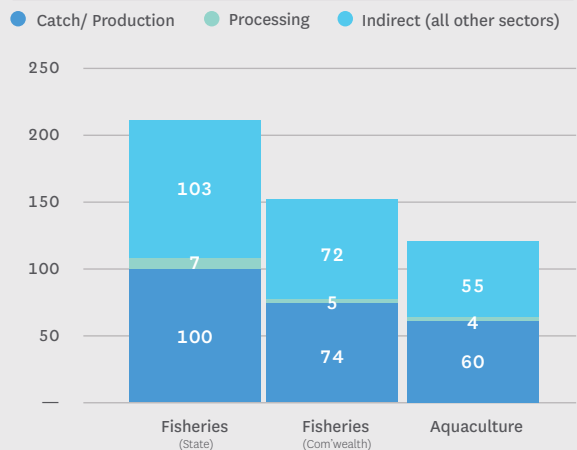
\$16 million generated by associated seafood processing activities

\$229 million generated by flow-on business activity in other sectors of the economy

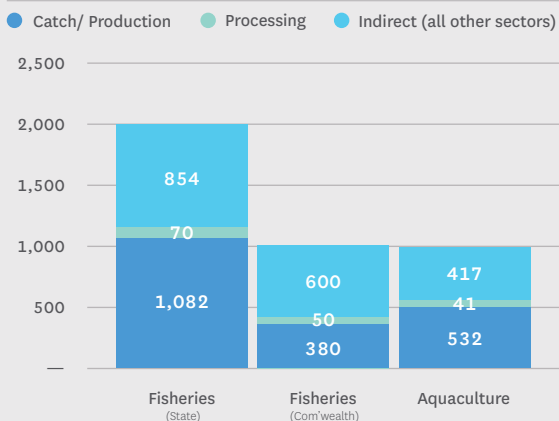
An additional **\$79 million** generated by QLD fishing, aquaculture and associated processing in other states and territories of Australia

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.

GROSS VALUE ADDED 2017/18 (\$ MILLIONS)



EMPLOYMENT 2017/18 (FTE JOBS)



EMPLOYMENT

In 2017/18, total employment contribution to QLD was **4,027 full-time equivalent (FTE) jobs**.

1,995 FTE jobs contributed by fisheries and aquaculture

162 FTE jobs contributed by associated seafood processing

1,871 FTE jobs contributed by flow-on business activity in other sectors

An additional **549 FTE jobs** generated by QLD fishing, aquaculture and associated processing indirectly in other states and territories of Australia

HOUSEHOLD INCOME

In 2017/18, total household income contribution in QLD was **\$242 million**

\$92 million earned as income in fishing and aquaculture

\$9 million earned in associated seafood processing

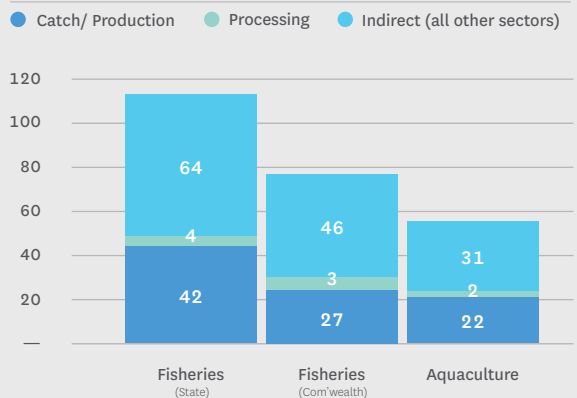
\$141 million earned in other businesses in QLD as a result of fishing, aquaculture and associated processing activities

An additional **\$46 million** generated by QLD 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.

HOUSEHOLD INCOME 2017/18 (\$ MILLIONS)



ECONOMIC ACTIVITY

GROSS VALUE OF PRODUCTION

In 2017/18, GVP of QLD fisheries, aquaculture and associated seafood processing was **\$469 million**

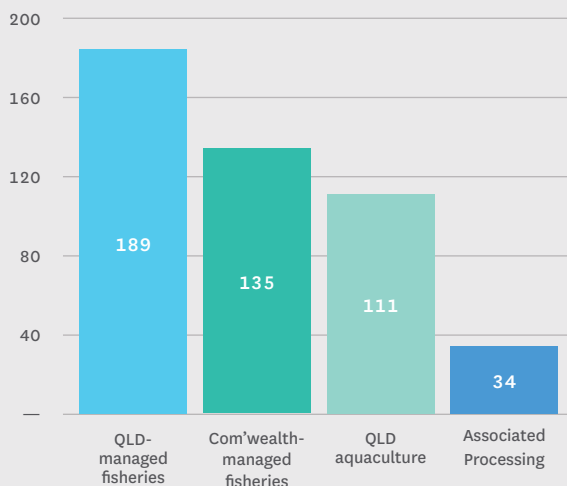
40% from QLD fisheries catch

29% from Commonwealth-managed fisheries landed in QLD

24% from QLD aquaculture production

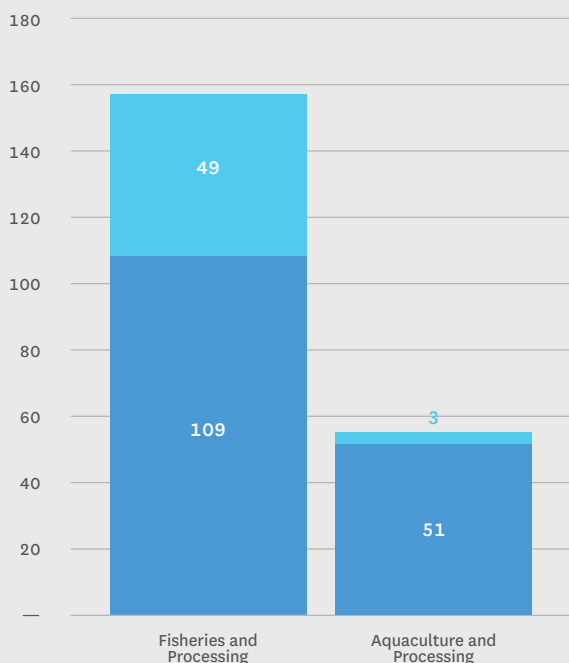
7% from associated seafood processing

GVP OF CATCH/PRODUCTION AND PROCESSING (\$ MILLIONS)



EXPENDITURE (\$ MILLIONS)

● Local ● Imported



EXPENDITURE

In 2017/18, total (non-wage) expenditure by QLD fishing, aquaculture and processing businesses was **\$212 million**

69% of total initial expenditure by fisheries and associated seafood processing was local

95% of total initial expenditure by aquaculture and associated seafood processing was local

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



Machinery and equipment



Retail trade



Personal and other services



Road transport



Food supply (bait and fish feed)

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 QLD COMMERCIAL FISHING AND AQUACULTURE TO QLD, 2017/18

	GROSS VALUE ADDED (\$M)	EMPLOYMENT (FTE JOBS)	HOUSEHOLD INCOME (\$M)	GVP (\$M)
FISHING (QLD MANAGED)				
DIRECT				
Fishing	100	1,082	42	189
Processing	7	70	4	15
INDIRECT (ALL OTHER SECTORS)^A				
Production induced	44	411	33	—
Consumption induced	58	443	31	—
Total indirect	103	854	64	—
TOTAL^B	210	2,007	110	204
FISHING (COMMONWEALTH MANAGED)				
DIRECT				
Fishing	74	380	27	135
Processing	5	50	3	11
INDIRECT (ALL OTHER SECTORS)^A				
Production induced	32	297	24	—
Consumption induced	40	303	21	—
Total indirect	72	600	46	—
TOTAL^B	150	1,030	75	146
AQUACULTURE				
DIRECT				
Production	60	532	22	111
Processing	4	41	2	9
INDIRECT (ALL OTHER SECTORS)^A				
Production induced	25	192	15	—
Consumption induced	30	225	16	—
Total indirect	55	417	31	—
TOTAL^B	119	990	56	120
FISHING AND AQUACULTURE TOTAL				
DIRECT				
Catch and Production	234	1,995	92	435
Processing	16	162	9	34
INDIRECT (ALL OTHER SECTORS)^A				
Production induced	101	900	73	—
Consumption induced	128	971	69	—
Total indirect	229	1,871	141	—
TOTAL^B	479	4,027	242	469

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

Source: QDAF, BDO EconSearch (2019c,f,g,i,l), Mobsby and Bath (2018), Skirtun et al. (2015), Mobsby et al (2019) and BDO EconSearch analysis.

TECHNICAL SUMMARY

This is a summary of the economic contributions of Queensland's fisheries, aquaculture and associated processing industries to the Queensland 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 Queensland to the Queensland 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 Queensland. 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 Queensland 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 QLD COMMERCIAL FISHING AND AQUACULTURE IN 2017/18

RANK	DESCRIPTION	CATCH/ PRODUCTION (T)	GVP (\$M)	VALUE PER UNIT (\$KG)
FISHERIES (QLD MANAGED)				
1	East Coast Trawl	6,794	85	12.56
2	Coral Reef Finfish	1,410	31	21.82
3	East Coast Inshore	3,228	13	4.03
4	Mud Crab	1,036	10	9.85
5	Tropical Rock Lobster	159	10	62.66
	Other fisheries	5,438	40	7.30
	Total wild caught	18,064	189	—
FISHERIES (COMMONWEALTH MANAGED)				
1	Northern Prawn	5,931	94	15.91
2	Eastern Tuna and Billfish	2,615	22	8.58
3	Torres Strait Rock Lobster	283	13	45.21
4	Torres Strait Prawn	241	4	16.44
5	Torres Strait Spanish Mackerel	93	1	9.11
6	Torres Strait Finfish	28	0	11.90
7	Coral Seas ^A	n.p.	n.p.	n.p.
	Total wild caught	9,234	135	—
AQUACULTURE				
1	Prawns	3,921	75	19.05
2	Barramundi	3,061	27	8.77
3	Confidential Sectors ^B	176	2	13.08
4	Other Freshwater Fish ^C	137	2	13.23
5	Hatchery	n.a.	2	n.a.
	Other sectors	144	4	28.48
	Total production	7,439	111	—

A Coral Seas GVP and catch are confidential but have been estimated to the accuracy required for the purpose of this study. This estimate should not be used for any other purpose so has been marked not published (n.p.)

B Confidential sectors include marine fish, worms, sea cucumbers, algae and ulva, crustaceans and other bivalves.

C Other freshwater fish include, jade perch, Murray cod and eel-tailed catfish.

n.a. not available

Source: QDAF, ABARES and BDO EconSearch analysis.

TABLE 3: QLD 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	Shrimp & prawns	2,638	28	51.8	30	19.6
2	Rock lobster	390	4	29.5	17	75.6
3	Trout	329	4	13.1	7	39.6
4	Other live fish	269	3	11.8	7	44.1
5	Fish livers, roes & milt	286	3	9.7	6	34.0
6	Sea cucumbers	128	1	9.4	5	73.5
7	Other frozen fish	2,345	25	7.3	4	3.1
8	Yellowfin tuna	454	5	6.9	4	15.2
9	Swordfish	430	5	5.9	3	13.6
10	Abalone	76	1	4.5	3	59.2
	Other ^C	1,956	21	24.3	14	—
	Total^{CD}	9,301	100	174.0	100	18.5

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).

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: QLD FISHERIES AND AQUACULTURE SUB-SECTORS EXCLUDED FROM THE ANALYSIS

FISHERY	REASON FOR EXCLUSION
QLD Coral, QLD Marine Aquarium, QLD Sea Cucumber, QLD East Coast Pearl	No GVP data published or means to estimate it
QLD Trochus, QLD Eel Juvenile	No catch
AQUACULTURE SUB-SECTOR	REASON FOR EXCLUSION
Nil	

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

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The background of the page is a solid dark blue. In the lower half, there are several overlapping, wavy, organic shapes in lighter shades of blue and cyan, creating a layered, wave-like effect. The text is positioned in the upper left quadrant, rendered in a clean, sans-serif font.