
**ECONOMIC SURVEY RESULTS
OF CRABBERS' EXPLOITATION
IN AREA 17
2000-2001**

QUEBEC REGION



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SUMMARY

The financial situation of the Area 17 crabbers' fleet was extremely good in 2000 and 2001. Despite a slump in the average landing price, the upward trend of the gross revenues in the fisheries in 2001 was attributed to the abundance of snow crab and the increase in the total allowable catch of each fisherman. The cash flow was established at \$279,507 in 2000 although it slightly dropped in 2001 to settle at \$266,911.

ACKNOWLEDGEMENTS

We would like to thank all the fishers who agreed to take part in this study. Without their co-operation, such a study would not have been possible. In addition, we would like to underscore that most fishers selected to be part of the sample voluntarily agreed to participate in the study. Moreover, we want to underscore the co-operation of Area 17 crabbers' associations and their Chairman who greatly facilitated our work.

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INTRODUCTION

The Policy and Economics Branch, Department of Fisheries and Oceans, Quebec Region, carried out this Costs and Revenues Study of Area 17 snow crab fishermen in the years 2000 and 2001. The average cash flow and revenues, the structures of landings and the main characteristics are described herein.

Such a study carries special significance inasmuch as it leads to better understanding of the high socio-economic stakes as well as the financial characteristics of snow crab fishing fleets.

1. Methodology

This study is the result of a survey carried out with Area 17 crabbers in 2001. This crabbers' fishing area is shown in Annex 1. The methodology used to carry out this study is described in the following section.

1.1 Data Collection

Area 17 has 22 crabbers from Quebec. For the purpose of this study, seven and eight fishers were respectively interviewed for the years 2000 and 2001. These interviews were carried out by a researcher in September and October of 2002. An explanatory letter was sent to randomly selected businesses in order to facilitate the work of the researcher in collecting data and generate a high response rate.

The survey was carried out using a questionnaire developed by the Department. This questionnaire contains all the information needed for the study. It is important to underscore that the nature of this information is confidential and that results discussed in the current report merely display averages. The main data collected with the help of this questionnaire are described in Annex 2.

1.2 Data Validation

Data validation was conducted through comparison of some variances with the fleet average, and by « cross-checking » with the researcher so as to detect inconsistencies which may have found their way in. Fishermen were also contacted to provide some specifics. Minor adjustments were also carried out.

2. Results and Analysis

2.1 Cash Flow

Table 1 shows the averages of gross revenues and the 2000 and 2001 operating costs for the overall sample. These data are used to calculate the average cash flow for each year. The cash flow is the result of a financial calculation which takes into account the revenues and outlays made during the year by the fishing business. It does not take into account the depreciation of assets (which is not an expenditure) but rather takes into account any loan repayment made during the year. Thus, it corresponds to the amount available for the proprietor as payment of his work and as profits for his business, after all expenses have been paid.

The cash flow may sometimes be overestimated. Indeed, some expenses, such as maintenance costs, may be financed through loans or funds from previous years, which does not generate any capital outflow from the current exercise. The calculation of the cash flow that follows takes into account the hypothesis which holds that all the owner's obligations must have been met during the year (with the exception of the financial charges for which actual payment are considered). The cash flow is therefore calculated as follows :

$$\begin{aligned} \text{OVERALL INCOME } \textit{minus} & - \text{Variable operating costs } (\textit{details in Annex 2}) \\ & - \text{Workforce expenses } (\textit{details in Annex 2}) \\ & - \text{Fixed operating costs } (\textit{details in Annex 2}) \end{aligned}$$

The **overall income** represents the sum total of incomes generated by fish sales and other revenues associated with the fishing business operations.

Variable operating costs represent expenses with direct links to fishing activities as well as variable costs related to the use of assets other than the vessel, such as vehicles, facilities and equipment.

Gear costs include the net acquisition of fishing gears (purchase minus sales) as well as maintenance costs and gear repairs.

Maintenance costs include all costs incurred to maintain business assets in fine working condition, which includes vehicles, facilities and equipment used on land. However, they do not include costs associated with the maintenance and repair of fishing gear.

Labour costs include salaries and social fringe benefits paid on behalf of crew members.

Fixed operating costs include annual fixed expenses associated with equipment and facilities such as finance charges, insurance and licences.

Results displayed on Table 1 indicate that the average cash flow amounted to \$279,507 in 2000 and \$266,911 in 2001. The average gross revenue for the sample under study reached \$448,784 en 2000 and, despite a slump in the snow crab average landing price, it soared up in 2001 reaching \$459,696. This increase may be attributed to an increase in the total allowable catches.

An examination of the structure of operating costs reveals that the highest costs are labour costs. These charges totalled \$58,923 en 2000 and \$62,382 en 2001. For the year 2000, this figure represented 35% of the overall operating costs while in 2001, they only represented 32%. It should also be noted that these charges increased by nearly 6% in value in 2001 compared with 2000. Such an increase may be partially attributed to an increase in the average crew size which went from 3.4 members in 2000 to 3.5 in 2001. The addition of a vessel in the 2001 sample may account for this slight variation in the number of crew members. Secondly, there were finance charges with 20% of the total charges in 2000 and 22% during the year 2001. Professional and legal fees were also substantially high with 7% of the total charges.

In 2000 and in 2001, vessel maintenance and repair costs represented respectively 6% and 5% of the overall total charges. Repairs, replacement and purchase of fishing gear had a respective share of 5% and 7% in 2000 and 2001. Due to important fishing gear acquisitions in 2001, these costs underwent a significant 57% increase.

Table 1
Cash Flow and Structure of Operating Costs
Area 17 Crabbers

	2000		2001		Variation
	(\$)	Part in %	(\$)	Part in %	2001/2000 %
REVENUES					
<i>Gross revenues</i>					
Gross revenues from fishing	448,784	-	459,696	-	2
Total revenues	448,784	-	459,696	-	2
OPERATING COSTS					
<i>Variable costs</i>					
Fuel, oil and grease	5,004	3	6,828	4	36
Fishing gear	8,564	5	13,412	7	57
Maintenance	10,881	6	9,806	5	-10
Others	20,897	13	21,903	11	5
Subtotal	45,346	27	51,949	27	15
<i>Labour costs</i>					
Labour	58,923	35	62,382	32	6
Subtotal	58,923	35	62,392	32	6
<i>Fixed costs</i>					
Finance charges	34,163	20	41,653	22	22
Insurance	3,280	2	3,494	2	7
Legal and management fees	11,818	7	13,871	7	17
Others (registration, licence, association, etc.)	15,747	9	19,436	10	23
Subtotal	65,008	38	78,454	41	21
Total operating costs	169,277	100	192,785	100	14
CASH FLOW	279,507		266,911		-5

Source : Survey of a fisher sample and DFO data (gross revenues from fishing)

Cash flow does not take into account other revenues such as employment insurance incomes. It is sometimes useful to display the average total revenue of the owners including the cash flow and employment insurance. On the other hand, for the two years under consideration in this document, none of the owners received any employment insurance benefits.

Table 2
Comparison of the Landings of the Sample Compared with the Population
Area 17 Crabbers

		2000	2001
Population	Number of businesses	22	
	Landings (\$)	449,674	462,078
Sample	Number of businesses	7	8
	Landings (\$)	448,784	459,696
Sample variance compared with the population *		-0.2%	-0.5%

* Represents the ratio of landings of the sample compared with the population

Table 2 compares landings in the sample under study set against the population. Thus, the average gross fishing revenues was \$448,784 in 2000 for the seven businesses sampled while it was \$449,674 for all the 22 Area 17 snow crab fishing businesses. The average gross revenue increased in 2001 to reach \$459,696 for the sample under study while for all the Area 17 businesses, it was at \$462,078. In the years 2000 and 2001, one noted a narrow variance in the sample gross revenue compared with the population, a feature which confirmed that the sample average gross revenue is truly representative of the average gross revenue of all Area 17 crabbers.

2.2 Structure of the Landings

Table 3
Structure of the Average Landings
Area 17 Crabbers

	Average Landings		Average Landing Price (\$/kg)
	(\$)	(kg)	
2000			
Snow crab	432,562	86,328	5.01
Others	16,222	19,132	-
Total	448,784	105,460	-
2001			
Snow crab	452,193	102,242	4.42
Others	7,503	8,929	-
Total	459,696	111,171	-

Sources : Survey of a fisher sample and DFO data (gross revenues from fishing)

Total landings (including all specie) were estimated at \$448,784 in 2000 and at \$459,696 in 2001. Such landings represented an overall volume of over 105 tonnes in 2000 and a little over 111 tonnes in 2001 per fishing business. These figures represented roughly a 5% landed volume increase.

Average snow crab landings, which represented more than 96% of the total landings in 2000 were worth \$432,562. In 2001, 98% of the landings were snow crab landings for a total value amounting to \$452,193. The landed volume of snow crab increased by 15,914 kg in average in 2000 whereas the average landing price decreased by 12% to reach \$4.42/kg.

The landed value of secondary specie amounted to \$16,222 in 2000 and to \$7,503 in 2001. The revenue generated by these species therefore diminished by \$8,719 in 2001. Whelk was the main secondary species fished by the Area 17 snow crab fishing

businesses. In 2000 and 2001, this species represented respectively 4% and 2% of the total landings.

2.3 Technico-Economic Characteristics of Area 17 Crabbers

Table 4
Technico-Economic Characteristics of Area 17 Crabbers
(Average Values)

Description	2000	2001
Average age of the fleet	12	11
Vessel Average length of	43'3'	44'9'
Duration of the fishing season (weeks)	20	18
Crew size	3.4	3.5
Vessel initial purchase price	\$224,786	\$302,438
Land asset purchase price	\$52,871	\$58,013
Additions or major amendments	\$53,607	\$60,406
Amortization*	\$127,994	\$161,861
Value of amortized assets as of Dec. 31 st	\$203,270	\$258,996
Balance on loans	\$157,178	\$165,392
Debt/Asset ratio	0.77	0.64

Sources : Survey of a fisher sample.

* Annex 3

The fishing season for Area 17 crabbers lasted over a period of 20 weeks in 2000 whereas it was shortened in 2001 and lasted 18 weeks only. The average size of the fishing crew was 3.4 employees in 2000 and of 3.5 employees in 2001, excluding the captain-owner.

The age of the vessels included in this fleet was about 12 years in average in 2000 and 11 years in 2001. This represented approximately half of their useful life cycle. The purchase price of the vessel increased by 35% in 2001 when compared to 2000. This price was \$302,438 in 2001 whereas in 2000, it was \$224,786. The purchase of a new vessel accounts for such an increase. As for the purchase price of land assets, the amount totalled \$52,871 in 2000 and \$58,013 in 2001. One therefore notes a 10% increase. As for major additions or modifications, they were respectively \$53,607 in 2000 and \$60,406 in 2001. This represented an increase of 13% compared with 2000. The value of amortized assets increased by roughly 27% to reach an amount of \$258,996 in 2001. This increase was more important than the debt increase.

It is possible to determine the proportion of business debts against business assets by calculating the **debts/assets** ratio. The average ratio thus stood at around 0.77 in 2000 and 0.64 in 2001, which meant that the debts incurred represented about 77% of the value of the amortized business assets in 2000 and 64% in 2001.

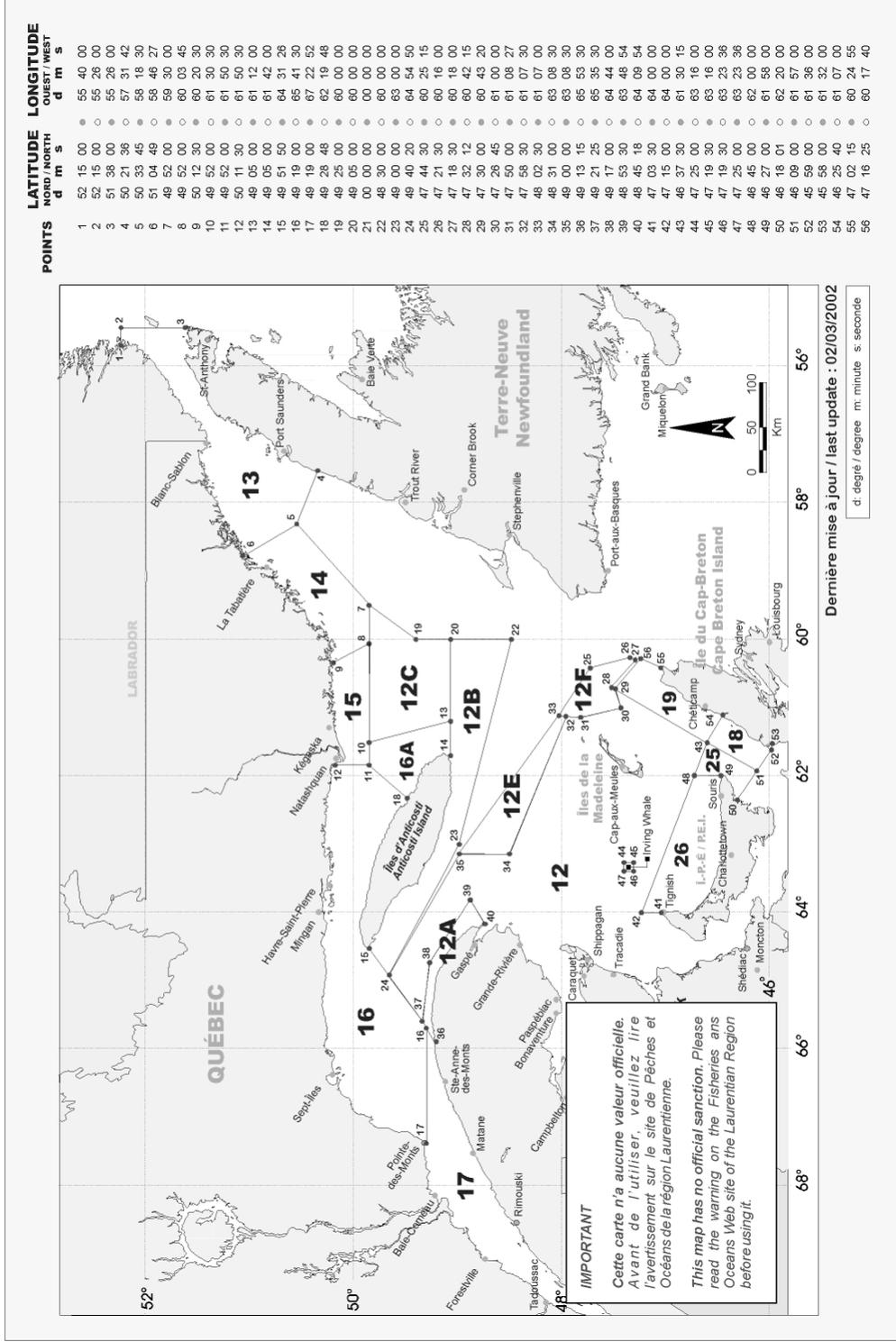
CONCLUSION

The results of the operations carried out by the Area 17 snow crab fishing businesses allowed the fleet to get high cash flow returns in the years 2000 and 2001. Apparently, the availability of the resource, the increase in the total allowable catch and market conditions contributed to the good financial health of this fishing fleet.

ANNEXES

Annex 1 Chart of Snow Crab Fishing Areas

 Pêches et Océans Canada Conservation et Protection Gestion des pêches Région Laurentienne	Fisheries and Oceans Canada Conservation and Protection Fisheries Management Laurentian Region	Régions Laurentienne et du Golfe	Laurentian and Gulf Regions	CARTE DES ZONES DE PÊCHE POUR / FISHING AREAS FOR : CRABE DES NEIGES / SNOWCRAB
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POINTS	LATITUDE		LONGITUDE	
	NORD / NORTH	d m s	OUEST / WEST	d m s
1	52 15 00	00	55 40 00	00
2	52 15 00	00	55 26 00	00
3	51 38 00	00	55 20 00	00
4	50 21 36	00	57 31 42	00
5	50 33 45	00	58 18 30	00
6	51 04 49	00	58 46 37	00
7	49 52 00	00	59 30 00	00
8	49 52 00	00	60 03 45	00
9	50 12 30	00	60 20 30	00
10	49 52 00	00	61 30 30	00
11	49 52 00	00	61 50 30	00
12	50 11 30	00	61 50 30	00
13	49 05 00	00	61 12 00	00
14	49 05 00	00	61 42 00	00
15	49 51 50	00	64 31 26	00
16	49 19 00	00	65 41 30	00
17	49 19 00	00	67 22 52	00
18	49 28 48	00	62 19 48	00
19	49 25 00	00	60 00 00	00
20	49 05 00	00	60 00 00	00
21	00 00 00	00	60 00 00	00
22	48 30 00	00	63 00 00	00
23	48 00 00	00	63 00 00	00
24	48 40 20	00	64 54 50	00
25	47 44 30	00	60 25 15	00
26	47 21 30	00	60 16 00	00
27	47 18 30	00	60 16 00	00
28	47 32 12	00	60 42 15	00
29	47 30 00	00	60 43 20	00
30	47 26 45	00	61 00 00	00
31	47 50 00	00	61 07 30	00
32	47 58 30	00	61 07 30	00
33	48 02 30	00	63 08 30	00
34	48 31 00	00	63 08 30	00
35	49 00 00	00	65 53 30	00
36	49 13 15	00	65 35 30	00
37	49 17 25	00	64 44 00	00
38	49 17 00	00	64 44 00	00
39	48 53 30	00	63 48 54	00
40	48 45 18	00	64 09 54	00
41	47 03 30	00	64 00 00	00
42	47 15 00	00	64 00 00	00
43	46 37 30	00	61 30 15	00
44	47 25 00	00	63 16 00	00
45	47 19 30	00	63 16 00	00
46	47 19 30	00	63 23 36	00
47	47 25 00	00	63 23 36	00
48	46 45 00	00	62 00 00	00
49	46 27 00	00	61 58 00	00
50	46 18 01	00	62 20 00	00
51	46 09 00	00	61 57 00	00
52	45 59 00	00	61 36 00	00
53	45 58 00	00	61 32 00	00
54	46 25 40	00	61 07 00	00
55	47 02 15	00	60 24 55	00
56	47 16 25	00	60 17 40	00

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Annex 2

Key Information Gathered During the Survey

- Business general characteristics (main and secondary vessels)
 - NBPC
 - Length
 - Type of hull
 - Gross tonnage
 - Braking power
 - Year of end of construction
 - Year of purchase
- Capital
 - Breakdown of initial purchase price according to vessel components
 - Major additions or modifications made after purchase
- Fishing effort
 - Number of sea-days and number of weeks per species
 - Number of trips
 - Crew size per species
- Variable costs
 - Salaries and social charges
 - Fuel, oil and grease
 - Food
 - Bait service, ice and salt
 - Vessel maintenance and repairs
 - Repairs, replacement and acquisition of fishing gear
 - Dockside monitoring
 - At-sea Observers
 - Vehicle expenses
 - Joint planning
 - Co-management
- Fixed costs
 - Registration, licence and plate number fees
 - Wharf charges
 - Vessel storage
 - Association
 - Insurance
 - Management and legal and fees
 - Leasing of quotas
 - Vessel leasing
 - Interest charges
 - Loan repayment
- Loans
 - Balance
- Various types of revenues
 - Gross fishing revenues
 - Quota rental revenues
 - Others

Annex 3

Period of Amortization Used For Each Vessel Components

Description	Number of Years
Hull	Fiberglass or wood covered with fiberglass
	<i>Less than 35 feet</i> 15 <i>35 feet and over</i> 25
Engine	Diesel 15
Deck equipment	Deck equipment 15
Electronic equipment	Electronic equipment 5
Land Assets	Vehicles 7
	Others 15

The period of amortization used for the hulls of vessels measuring 35 feet and over was increased from 20 to 25 years for a better reflection of the reality respecting the useful life cycle of the hull. The same applies to vehicles: their period of amortization went up from 5 to 7 years.