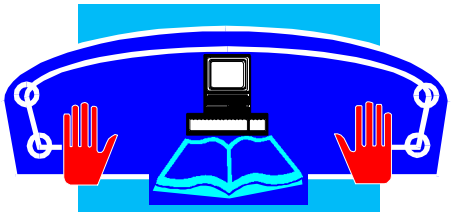

A Business Evaluation Of A Proposed Fish Processing Plant At Hay River, Nwt
Date of Report: 1971
Author: P S Ross & Partners
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P. S. ROSS & PARTNERS
MANAGEMENT CONSULTANTS 90 SPARKS STREET / OTTAWA 4/ CANADA/ 236-9662

December 31, 1971

Director
Indian-Eskimo Economic Development Branch
Dept. of Indian Affairs & Northern Development
Centennial Tower
400 Laurier Avenue West
Ottawa, Ontario

Attention: Mr. I. D. Cunningham
Business Services Section

Dear Sir:

We are pleased to submit our report entitled "A Business Evaluation of a Proposed Fish Processing Plant at Hay River, Northwest Territories". We trust that this report will fulfill your requirements and that it will assist the Department in reaching a decision concerning assistance for the proposed plant.

Every effort has been made to be as thorough as possible within the limitations of time and budget. As you are aware, the assignment proved to be more complex than was originally foreseen by either your Department or our firm. Nevertheless, we are confident that all the dimensions have been studied in sufficient depth to support strategic decision-making at this stage.

In preparing our final report, we have endeavored to consider the information and views of all interested Branches of your Department. This has been done by way of distribution of a draft copy of the report, its presentation at a Departmental meeting and detailed discussions with the Department's Project Officer. While this review procedure has been time consuming, we believe that it has been beneficial, particularly in view of the projects important ramifications for the Department.

We wish to acknow ledge the contributions of numerous offic ia is of your Department as w e ll as the Department of Environment, the Freshwater Fish Marketing Corporation and the Government of the Northwest Territories who provided valuable information and ideas.

If you have any questions concerning this report, w e are avai lable to discuss the subject with you at your convenience e.

Sincerely,

P.> ROSS & PARTNERS

B .'D. McDougal L
Partner

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INTRODUCTION

Since its inception nearly twenty-five years ago, the commercial fishery on Great Slave Lake has been an important source of income for Indian people. These Indian beneficiariess are a combination of local Treaty Indians resident in communities around the Lake and Indians from Manitoba and Saskatc hew-an wholive in the area on a permanent or s easona l basis for the purpose of working in the fishery.

The commercial fishery of Great S lave Lake and surrounding inland lakes has enjoyed most of the benefits and experienced many of the difficultiess of the Canadian freshwater fishery. While more remote from markets than many other major freshwater operations, the quality, quantity and reliability of the area 's w hitefis h and trout have enabled the Great Slave Lake fishery to remain viab le. The creation of the Freshwater Fish Marketing Corporation provided a new framework for the future development of the fishery. The Corporation operates as its own agent in the Northwest Territories and, in this ro le, it carries out buying, receiving, icing, freezing, freighting and other functions as well as the marketing of the end product. To upgrade the fishery, the Corporation has built a new packer vess e l and improved the re - c eiving stations and co mmuni cations facilities. As the next phase in this upgrading proc ess, a new proces sing plant has been proposed. The Corporation's reasons for building this plant are potential savings in supplies and freight; production of new products from species not now harve steal; and c ompliance wit h the production standards of the Fisheries S e r vi c e of the Federal Department of Environment.

How e v e r, the cost of the plant incr eased substantially between the pr e liminar y estimates and the costing based on the detailed plans and bids. The se cost increases have adversely affected the projected pay-back of the plant. As a re suit, the Corporation has requested a capital grant from the Department of Indian Affairs and Northern Deve lopm ent to r ernove from the lo c al fishermen the burden of r e covering t hes e extra capita l costs .

In support of its request, the Corporation submitted a report on the project t. the Department. Based on that information, the Department 's Northern Economic Development Branch carried out an economic appraisal of the project. To provide an additiona l perspective, P. S . R.oss & Partners was asked t. Uncle rtake an ass essment of t he propos e d p roj ect fr om a busi nes s manage me nt point of view. In doing so, w e drew extensively on the reports by the Corporation and the Department. The background materia l in these reports was of g r eat assistance in our analysis.

This report provides:

- background to the project and the grant request,
- an outline of the environment in which a Hay River fish processing plant must operate,
- financial projections for the plant,
- a business assessment of the proposed plant,
- an evaluation of the benefits to Indian people,
- an examination of alternative methods of providing financial assistance
- strategy recommendations to the Department.

Throughout the report, we have abbreviated references to the Freshwater Fish Marketing Corporation to 'FFMC' or 'the Corporation'. Similarly, the Department of Indian Affairs and Northern Development is referred to as 'the Department'; the Federal Department of Environment, Fisheries Service as 'Fisheries Service' and the Northwest Territorial Government as the 'NWTG'.

OBJECTIVE & SCOPE

The objective of the assignment was:

* To carry out a business assessment of the proposed fish processing plant at Hay River, N. W. T. and t. evaluate its potentia l benefit for the Indian pe ople.

In accordance with the terms of reference, we have carried out a business asses sment of the proposed plant with particular reference to its financial aspects. The plant's potential benefits to the Indian people in the Great Slave Lake and MacKenzie District through employment in the plant and fishing for s upply to the plant have been ass ess ed. After examining the available data, w e have formulated recommendations for action by the Department with respect to the establishment of a plant. Alternative courses of action have been outlined indicating the implications of each.

Excluded from our terms of reference were an examination of the design of the plant and its location; a verification of the capital costs for the plant and prior ass et acquisitions and expenditur es; a review of the marketing, pricing and inventory aspects of the FFMC; an ana lysis of the FFMC corporate costs and other charges ass ess ed against the fish from the NWT Agency. Also, we have not examined the corporate operation of the FFMC, although it should be recognized that the performance of the Corporation and its stance opposite the NWT agency are critical to the financia L success of the proposed plant.

The time and budget constraints of the assignment have not permitted a detailed analysis and confirmation of all facts from original sourc es. We have had to rely on information provided to us in good faith by the FFMC, NWTG , Fisheries Service and Department of ficials. Our analysis is therefore subject to any shortcomings attributable to inadequate opportunity for full investigation. A list of the officials from whom information was received is presented in Appendix A.

As a result of the foregoing limitations, we have had to make assumptions concerning certain critical factors. How ever , w e believe that our research has been adequate relative to the type of decision to be made and the uncertainties inherent in the project and the fishing industry. While deeper and more sophisticated analysis would be professionally desirable, w e believe that further r e search would confirm our findings and recommendations.

In taking a business management approach, we examined the project from the point of view of a prospective investor or lender. The normal management and financial yardsticks have been applied, a reasonable approach sine e the FFMC is by legislation and management philosophy a business operation primarily interested in the achievement of economic rather than social objectives.

BACKGROUND

In the FFMC report on the project, the circumstances leading to the proposal for a new fish processing plant at Hay River were outlined. The following are extracts from that report: (1)

> This fishery was viable and profitable to private dealers in the past because most Whitefish are high quality, light coloured and have a fat content suitable for the New York Smoking trade which was initially developed by utilizing Great Lake Whitefish. Great Lake Whitefish production was declining at about the period Great Slave Lake began producing. The only other quantity of White - fish in our area that is suitable for smoking comes from Playgreen Lake and Lake Winnipeg.
>
> This market for Smoker Whitefish yields a much higher market price than is the case for ordinary whitefish.
>
> Most trout from the great Slave Lake have a light coloured exterior, are firm fleshed and the meat is an attractive salmon red colour. This product is considered nearly equal in quality and texture to Great Lake Trout. The destruction of Great Lake Trout by the Lamprey was a major factor in strengthening the market to the advantage of Great Slave production and the dealers.
>
> Whitefish and Trout have constituted 90% of the total production of Great Slave. Other species have not been exploited by the private trade because of their reluctance to invest substantially in capital assets for processing and freezing facilities and require expensive product development and market research. The dealers seemed content to exploit the profitable species, Trout and Whitefish, and in many cases the fishermen were exploited all for quick profit. These practices were contrary to sound lake management and valuable fishing resources went unharvested; and planned development toward a well established and valuable source of resources revenue was delayed for many years.

(1) Page 2, Memorandum Report dated September 14, from D. F. Corney, President, Freshwater Fish Marketing Corporation to H. M. Budgell, Fishery Specialist, Development Services Division, Indian-Eskimo Economic Development Branch, Department of Indian Affairs & Northern Development.

When the Corporation began to market production from the Northwest Territories on May 1, 1969, it was confronted with the need to provide expensive facilities, develop new products and find new markets.

In order to meet the required plant standards and to provide a reasonable opportunity for diversification and development of the Northwest Territory Fishery, the Corporation has to date made capital expenditures of approximate ly $800, 000 to provide the lake stations, pick-up boat, ice making equipment, docks and radio communi - cations. To complete the program a plant for Hay River is designed, site located, purchased and prepared. The dirt and gravel fill is completed and piles have been driven in preparation for the main building.

The financial reasoning justifying the plant and other above mentioned expenditures was based on savings and transportation, handling, containers, improved quality, increased production and diver sification of species harvest.

The FFMC proc ceded with the preliminary design of a plant which was estimated to cost $800, 000. The economics were calculated accordingly and an increased return to the local fi she r men was indicated. The FFMC then completed engineering plans, purchased s low de livery equipment, acquired and prepared a site and carried out other arrangements for the plant. How ever, when the engine ering design was completed and building tenders submitted, the estimate d c o st of $800, 000 rose to $1, 500, 000 (detai ls are shown in Exhibit 1). The five year projections for the plant were revised and it was found that in the first fiscal year of operation the fishermen would experience a deer eas e in earnings of $123, 000 instead of an increase of $64, 000 as previously estimated.

The Corporation then re-examined the long term economics of the plant on the basis of the hig her cost. Forecasts were made of future prices and the effect of the projected r e venues and costs on fisher mens incomes. The cone lusions were negative and the FFMC Board r eque steal a capital grant of $1 million from the Department of Indian Affairs and Northern Development to improve the economic prospects for the plant. An important underlying factor was stated to be the principle that costs deriving from capital expendi - tur es in any particular area must be sustained by the fisher y in that area. In other words, one region should not sub sidize another.

HAY RIVER PLANT SUMMARIZED COST ESTIMATE

Land & Site Fill	$100,000	
Plant - building, electrical mechanical & refrigeration system	720, 000	
	$820,000	$ 820,000
Spiral Freezer	$165,000	
Receiving Room Equipment	34,600	
Grading & G lazing Equipment	25,900	
Cold Storage Equipment	16,000	
Deboning Equipment & installation	100, 000	
Miscellaneous Equipment	21,000	
	$362, 500	$ 362, 500
Installation & Miscellaneous Labour	$10,000	10, 000
Engineering Fees	$100,000	100, 000
PROJECTED TOTAL		$1,292, 500
CONTINGENCY		57, 500
BUDGET		$1, 350,000
INCREASE DUE TO DELAY IN CONSTRUCTION FROM 1971 to 1972 estimated at		150, 000
TOTAL ESTIMATED COST		$1, 500,000

Sour ce: FFMC September 14 Report

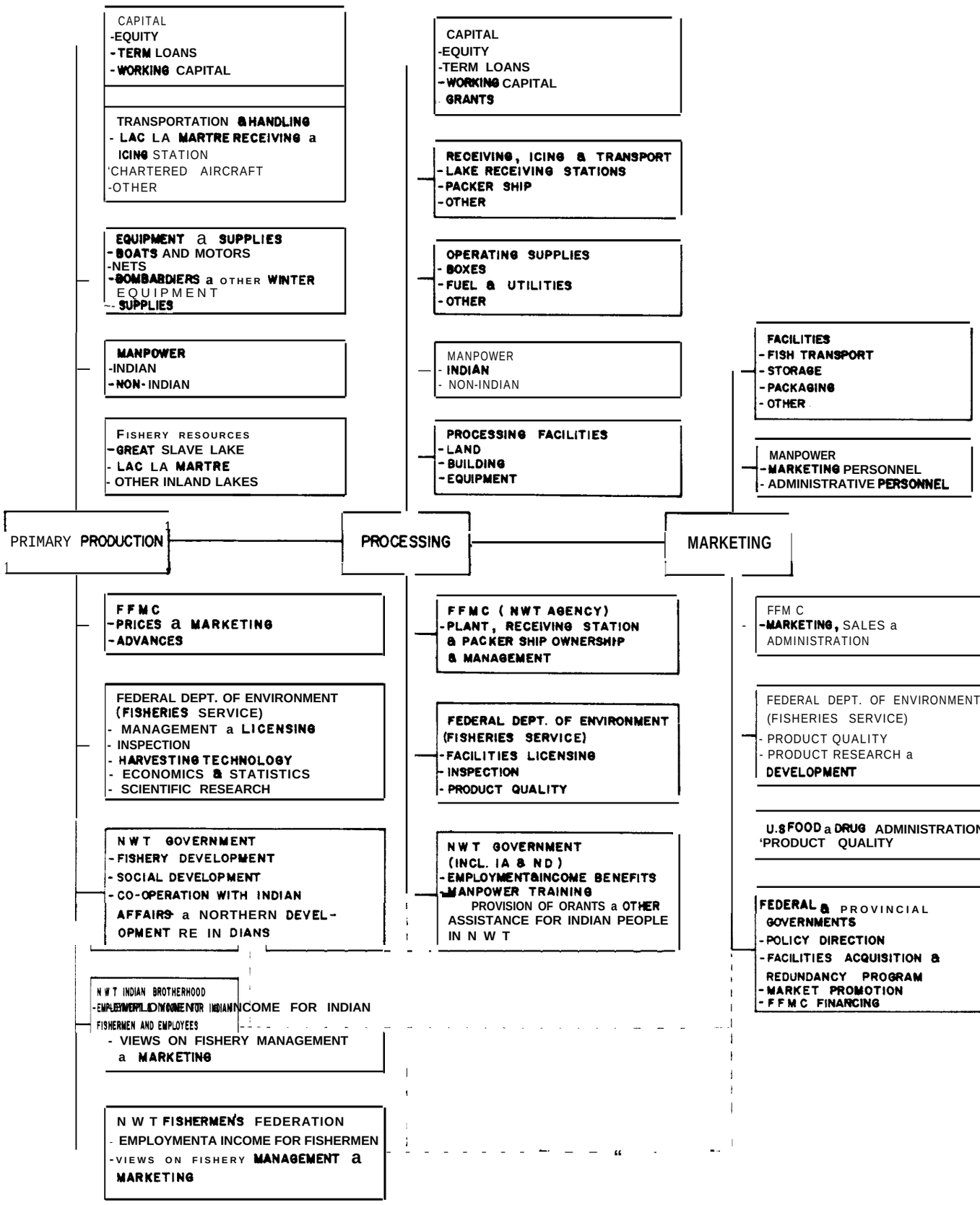
THE PROPOSED PLANT IN PERSPECTIVE

There are many factors that exert an influence on the present Hay River operations and that would exert similar influences on the new plant. An appreciation of the total environment in which the Hay River plant will operate is important for a balanced evaluation of the project and its benefits.

In an effort to portray the relationship of the Hay River processing and forwarding operations opposite the primary fishery on one hand and the FFMC marketing operations on the other hand and, at the same time, to reflect the major inputs in each sector and the various organizations that influence each sector of the commercial fishery in one way or the other, we have employed a systems diagram which is shown as Exhibit 2. This diagram shows the flow from the primary fishery through the processing and forwarding operations to the market. Above each of the three main phases are the major inputs and below are the principal operational, regulatory and other organizations. Appendix B presents a supporting description of the system and its major elements.

While the FFMC operates in the Northwest Territories as its own agent, it makes an effort to distinguish between its corporate functions and its agency operation. Exhibit 2 illustrates this relationship.

SYSTEMS DIAGRAM FOR PROPOSED FISH PROCESSING PLANT AT HAY RIVER, NWT



P. S. ROSS & PARTNERS

FINANCIAL PROJECTIONS FOR THE PROPOSED PLANT

Methodology & Assumptions

In carrying out an examination of the financial projections for the proposed plant, we used as a starting point the projections and other information from the September 14 FFMC report and the November 1971 report by the Northern Economic Development Branch of the Department of Indian Affairs and Northern Development. To this basic information we added the FFMC financial results for the Hay River Agency for the 1969/70 and 1970/71 fiscal years and the first six months of 1971/72.

As the next step, we determined the background to the financial statements and the projections through several lengthy discussions with FFMC officials in Winnipeg and Hay River. Using the information gathered in these discussions, we endeavored to refine the original projections which, according to FFMC management, were rough in nature. Using these revised figures as a base, we analyzed the financial prospects for the project and the financial management of the Agency.

Financial Projections

The revised financial projections and the results for the past $2\frac{1}{2}$ years are shown in Exhibit 3. Supporting the financial projections is a series of footnotes in Appendix C that provides background on the make-up of major items, underlying assumptions and information sources.

Supplementary to the main projections are a statement of revenue and expenditure for the packer vessel, shown in Exhibit 4, and a schedule of the difference in transportation costs for the movement of fish from Hay River to Winnipeg with and without the plant, shown in Exhibit 5.

Commentary

In many instances there is a thin line between the costs that have been attributed to the Hay River operations and to the corporate office. The company has, in the past, distributed certain costs related to Hay River to corporate costs. These costs include interest on working capital, manager salary, and other charges that would normally be borne by the Agency if it were an independent organization.

FFMC

TRANSPORTATION COSTS

HAY RIVER TO WINNIPEG

	1972-1973	1973-1974	1974-1975	1975-1976	1976-1977
Volume lbs.)					
Fresh	1,500,000	1,100,000	1,000,000	1,000,000	1,000,000
Frozen	3,130,000	4,100,000	4,500,000	5,000,000	5,000,000
Deboned	700,000	1,190,000	1,400,000	1,750,000	2,100,000
Transportation Costs					
Without Plant	$319,800	$383,400	$414,000	$465,000	$486,000
With Plant	204,900	224,700	237,000	262,500	273,000

Note: The above costs assume that the charge of $.06/pound for fresh fish remains constant for the projection period as does the $.03/pound for frozen fish.

It also assumes that with no new plant the freezing of fish will not be done at Hay River.

P. S. Ross & Partners

Exhibit 5
Page 13

No balance sheet i s prepared for the Hay River Agency although it is a distinct operation with accounts receivable, inventorieds, assets and liabilities. These assets and liabilities are included in the Corporation's ass ets and liabilities and not segregated for accounting purposes.

FFMC officials report that there are no annual operating budgets prepared for the Hay River operation (or for the FFMC Corporate operations). As a result, there is no yardstick against which to measure performance throughout the year. If the new plant were to go ahead, a management control system should be incorporated. Such a system would permit greater accountability and would ensure that the management per sonne l charged with the responsibility for various operations could monitor results. Also, the financial management would be more effective. Costing information has been developed largely from the FFMC's two years of operation and is too general to be of much value.

It is difficult to determine the working capital requirements for the Hay River plant operation without segregating some of the as set accounts. However, FFMC officials estimate the working capital in the vicinity of $250, 000. Any interest charges on this money would be inc luded in the corporate costs.

We were unable to locate any directly comparable financial ratios for fish processing or other comparable food plants against which the projections could be ass ess ed. How ever, in the absence of balance s he et info r mation, such an analysis would be of limited value.

BENEFITS OF PROPOSED PLANT FOR TREATY INDIANS

Methodology

At present, more than 300 people are involved to some degree in the Great Slave Lake and area commercial fishery. However, when a distinction is made between those actively involved and casual participants, the number is reduced below 300.

Consideration was given to four ethnic classifications: Treaty Indians from Bands domiciled in the Great Slave Lake area; Treaty Indians from other areas, principally Manitoba and Saskatchewan; Metis; and, Whites. While the commercial licensing system provides for a separate listing of licenses issued to Treaty Indians, it does not generate all the information that is required for a benefit analysis. Similarly, the FFMC fishermen's earnings data do not fully disclose employment of all Treaty Indians since many Indians are employees on the larger boats. The lack of integration of FFMC and Fisheries Service data is another deficiency at the present time.

In the FFMC operations, the classification of employees by ethnic background is dependent solely on management knowledge of the individuals involved. In view of the fact that fair employment legislation dictates a disregard for ethnic background, this is understandable.

In our analysis, we endeavoured to identify the economic benefits that Treaty Indians now derive from the Great Slave Lake and area commercial fishery and what effect the proposed plant would have on these benefits. While the fishery and the receving and processing operations are the main sources of economic benefits, a number of factors render it difficult to quantify these benefits readily and precisely. While an exhaustive analysis might result in more accurate information, it is questionable whether the effort would be justified by the cost and the Department immediate needs. However for long term planning, a more detailed study would generate some valuable planning information and guidelines.

Despite these difficulties, we have endeavoured to make a rough quantification of the benefits to the Treaty Indians and to add supplementary comments as to the broader economic and social implications. In addition, we have noted the impact of the plant on all fishermens income, the NWT Agency, local and territorial economies, the freshwater fishing industry and others.

Estimated Benefits

Exhibit 6 presents an estimate of the benefits of the Great S lave Lake and area commercial fishery to Treaty Indians. Footnotes to the table are found in Appendix D.

Total employment is now estimated at some 284 persons (seasonal and full time) ; Treaty Indians are indicated to hold about 158 of the jobs, slightly more than half. This share is fairly consistent in the primary and the receiving and proces sing sectors. With the new plant, and the expected expansion of the primary industry, total employment is forecast to increase by 71 jobs to a total of 355. The proportion of Indian employment is forecast by the FFMC to increase appreciably, largely through a greater s hare in the development of inland lakes and a greater share of the jobs in the plant.

The benefit estimates indicate the Treaty Indians share of the fishery income to approximate $275, 000 per year. It could increase by some $300,000 per year, more than 100%, to some $588, 900. It must be emphasized that these figures are crude estimates only.

The present and projected benefits from support services and supplies were examined and found to be minimal. There could be an expansion of employment in fisheries management and development areas if appropriate training programs were devised.

Apart from the dir ect and indirect economic benefits, there are important social considerations. The Hay River office of the NWT Department of Social Development reports that little welfare is paid to Indian men; most of the c lie nts are deserted wi v es. How ever, if there were a major downturn in the commercial fishery, this situation could alter radically. We were unable to secure Unemployment Insurance payment figures in the time available. However, the need for economic action to create a base for social growth among the Indians in the area is evident. Exhibit 7 shows the distribution of income levels in Hay River by ethnic group. Of the households surveyed, 45.3 had annual incomes of less than $2, 000; among the Treaty Indians surveyed, 87.4 per cent earned less than $2, 000. The uneven distribution of fishermens earnings and the large number of fishermen (one -third) earning less than $500 per year is s hewn in Exhibit 8.

Another significant indicator is the unemployment level. A 1967 Dominion Bureau of Statistics Manpower Test Survey in Hay River reported that Treaty Indians in Hay River had an unemployment level of 62. 3 per cent as opposed to a community average of 9.6 percent.

BENEFITS OF GREAT SLAVE LAKE & AREA COMMERCIAL FISHERY TO TREATY INDIANS

(approximations only) (1)

	Total Employment		Total Income		Indian Employ.		Indian Income	
	Pres.	Proj.	Present	Projected	Pres.	Potent.	Present	Potential
Primary Production								
Fishing (2&3) - GSL	170	185	$1,008,100	$1,117,400	90	110	$117.000	220.000
-LLM	20	20	118,600	120,800	20	20	30,000	30,000
- Other	10	35	59,100	211,400	10	35	15.000	52.500
Rece v:ng & =ing LLM)(4)	10	10	30,000	30,000	10	10	30,000	30,000
Fishery management, fishery development, transportation & other (5)	20	25	160,000	200,000	1	6	3,000	42,000
Sub-total	230	=75	$1,376,000	$1,679,600	131	181	$195,000	$374,500
Receiving & Processing (6)								
GSL receiving station and Hay River Plant (summer max)	44	69	$208.000	$355,600	24	47	$80,000	$214,400
FFMC - Hay River Office	4	5			1	3		
Packership	6	6			2	3		
Regulatory & Other (7) Sub-Total	54	80	$208,000	$355,600	27	53	$80,000	$ z .* 400
Marketing (8)								
Total (9	284	355	$1.584,000	$2,035,200	15a	234	$275.000	$588,900

INCOME LEVELS IN HAY RIVER BY ETHNIC GROUPS, 1967

	Annua Household ncomes ($										
	0-1999		2000-3999		4000-5999		6000-7999		8000 & Over		Total*
	No.	%	No.	%	No.	%	No.	%	No.	%	
Treaty Indian	97	87.4	11	9.9	2	.8	1	° 9	-	-	111
Non-treaty Indian	32	56.2	15	26.3	6	10.5	4	7.°	-	-	158
Metis	60	59.3	20	19.8	17	1ª 8	3	3.°	1	0.9	101
Eskimo	3	37.5	1	12.5	3	37: 5	-	-	1	12.5	8
Others	271	36.2	143	19.2	149	2°: °	112	15.1	69	9.2	744
Tota	463	45.ª	19°	18.6	177	17.3	12°	11.8	71	6.9	1°21

* Total of reported incomes

Source: Dominion Bureau of Statistics Manpower Test Survey, 1967

FISHERMEN 'S INCOME - GREAT SLAVE LAKE - 1970/71

Income Range($)	Number of Men
0- 500	67
500- 1000	21
1000- 1500	14
1500- 2000	12
2000- 2500	9
2500- 3000	6
3000- 3500	4
3500- 4000	3
4000- 4500	2
4500- 5000	3
5000- 5500	1
5500- 6000	1
6000- 6500	2
6500- 7000	1
7000- 7500	2
7500- 8000	0
8000- 8500	0
8500- 9000	1
9000- 9500	1
9500- 10000	1
10000 +	33
Total	184

Mean Income - $4901.39

SOURCE: Fisheries Service

The Hay River development plan forecasts a population increase from the 1969 level of 2, 270 to double or triple that number by 1989. By 1974, the permanent population has been projected to increase to between 2, 830 and 3, 720. Treaty Indians currently comprise approximately 10 per cent of the population and, if this proportion inc r eas es without a cone urr ent increase in economic participation, the situation could move from serious to critical.

For thes e broader social and economic r ea sons, expansion of the c ommer cial fishery is of considerable significance for the local Treaty Indians. However, the Indians should be assured that they are planning their future on a sound resource base, not a marginal industry.

Fisher men's Income

Reference has been made in the financial analysis to the positive effects that the plant could have on fishermen's income through the harvesting of new species and added income from culls and salvage operations. The benefits from the mullet and maria harvest have already been examined.

With respect to the culls, FFMC and NWT officials indicate three potential areas of extra income:

* The fisherman presently culls the fish on the lake and discards fish that he knows wou ld be r ejected at the receiving station. The extent of this culling is not known but one e stimate placed it as high as 5 per cent.

* Culls at the receiving station are presently dumped. Estimates of the extent of culling range from 6 per cent to 12 per cent. (1) Some 50 per cent of this cull m ate rial could be filleted and a return paid to the fishermen.

* The fish are now culled in Edmonton and Winnipeg prior to proces sing. The FFMC reports a consider - able deterioration from trans it; proces sing close to the lake could reduce or eliminate this Loss. Any r e cover y at this I eve l w ou ld flow to the fishermen.

The FFMC has forecast that higher initial prices could be paid as a result of the plant, which s hou ld act as a positive stimulus on the deve lopment of the fis her y.

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(1) FFMC and NWTG estimates based on Fisheries Service studies.

Hay River Agency

In its projections, the FFMC showed savings in supplies and freight costs that would result from a new plant. It reports that these savings ultimately flow to the fishermen by way of increased lake prices. The supply savings relate to the shipment of frozen rather than fresh fish. However, with the further processing of the fish, the type of packaging and other materials needed for the plant and the increased volume, the total cost would actually increase. The freight savings, shewn in Exhibit 4, also relate to the shipment of frozen rather than fresh fish. The supply factor was clearly identified in the operating costs of the plant whereas freight cost is a factor in the FFMC formula used to determine the lake price at Hay River.

Another feature of the proposed plant is that it could provide a base for the Agency to expand into other products such as smoked fish, canned products and pet food, if there were found to be viable.

Territorial and Local Economic Benefits

The Territorial and Hay River economies would benefit from the increased incomes through the multiplier effect of expenditures on supplies and services for the industry and on consumer goods. Taxation benefits would accrue principally through personal income taxes and the property taxes paid by the Corporation on its plant. Another benefit which is difficult to estimate is the reduction in welfare and unemployment benefits and the general social enhancement that a strengthened commercial fishing industry would yield.

National Benefits

There are a number of broad benefits that should be realized from the new plant and the resultant expansion of the commercial fishing industry (if FFMC forecasts materialize). Among them are:

* Increased dollar earnings for Canada from export sales;

* Improved fisheries management through the harvesting of rough fish and fuller utilization of other species;

* Environmental improvements to provide better control over cull and by-product disposal;

* Improved sanitation to ensure better product quality and better working conditions for employees; and,

* The generation of employment and other economic benefits in the NWT and elsewhere through the support services and supplies required for the fishery.

Uncertainties

It should be noted that these benefits are by no means certain. T heir realization is dependent on a number of factors, some of them extreme ly crucial. Among the most important are:

* The realization of the forecast whitefish, trout and rough fish production volumes and projected pric es;

* Positive response by fishermen to the low per pound prices for mullets and marias and/or technological developments that will permit economic harvesting of these species (although the latter may result in less employment);

* The achievement of an efficient proces sing operation, including the attainment of an acceptable overhead cost for depreciation and interest;

* No substantial increase in Hay River to market transportation costs that would render the commercial fishery uneconomic;

* The realization of adequate market prices for all products and as suranc e from the FFMC cone erning the marketability y of the outputs as one aspect of ensuring that Agency commission levels are adequate.

* The development of training programs for Treaty Indians to provide them with the necessary skills and work attitudes required to fully realize the employment opportunities in the primary fishery and processing operations.

BUSINESS EVALUATION

The proposed plant has been assessed on a business basis, assuming that the Hay River Agency were a local subsidiary company of a larger parent corporation. This business approach and the independent situation of the Hay River plant is consistent with FFMC policy as outlined by FFMC management. The normal management function headings have been employed in the evaluation.

Corporate Objectives & Plans

The broad objectives of the FFMC are defined by the Act, but the specific strategic corporate plans do not appear to be well documented. At least, they were not forthcoming in our discussions with FFMC officials.

A similar situation prevails with respect to plans for the Hay River based Great Slave Lake and area operation. In this connection the following facts should be noted.

* NWTG officials advised that there is no economic development plan for the NWT. As a result, the proposed plant must be designed without any know - ledge as to future plans for the extension of roads o r other t ran sportation facilities. While the NWT experienced a considerable expansion in its infra-structure in the past few years, further facilities are anticipated and, ideally, this should be done wit hin the context of a comprehensive p lan. Since the fishery operation is largely an exercise in logistics or total distribution systems, knowledge of infrastructure e plans is an important factor.

* A development plan for the NWT fishery is currently being prepared by a joint NWTG/Fisheries Service Task Force. The plan is scheduled for completion by March 1972. This plan should set important guidelines for the primary fishery and for the establishment of new facilities for the industry. The funds to be expended for the proposed plant could be more effectively utilized with greater benefits to the fishery if this plan were available.

Good business practice would dictate that recognition be made of a fishery development plan or, alternatively, that appropriate assumptions be c learly defined in its absence.

* There is no evidence of a written strategy plan for facilities expansion and improvement for the Hay River Agency. The FFMC reports that some $800, 000 has already been spent on the new packer vess e l, ice making equipment and improvements to the receiving stations and the communications s yst em.

Fisheries Service officials indicate that inspection standards may require further expenditures to upgrade receiving stations. From a business planning point of view, it is important to know what other capital expenditures may be needed in the coming five years to assess the impact of added depreciation and interest charges on the financial results.

* There appears to have been limited consultation during the planning of the plant with local manage - ment, NWTG Fisheries Development officials, the Fisheries Federation and the Indian Brotherhood.

Genera l Management (Short T e rm Planning & Control)

Within the context of a comprehensive corporate strategy plan, it is normal for manage ment to carry out a planning and control function for annual operations. Our liaison with the FFMC corporate officials did not permit an assess ment of this function at the corporate level.

Our general impression of the Hay River operation was favorable insofar as short term planning and control and problem solving is cone erned. How eve r, this observation is based on a brief visit only and did not entail a full assess - ment of local operations and management. The proposed plant would present som ew hat greater planning and control problems and local management would have to be given the necessary time and assistance to meet this challenge.

It would appear that the lack of long range plans for the NWT Fishery and for the Hay River Agency creates some operating problems for the Agency. In view of the magnitude of the new plant and its importance to the success of the NWT fishery, action should be taken to alleviate these shortcomings.

The lack of an annual budget is one indication of the present deficiencies. The introduction of a budgeting and reporting system is a minimal planning and contro l element in connection with the new plant.

Marketing

The Hay River operation has none of the usual marketing problems since it has only one customer for its service: the FFMC. However, taking the Hay River agency as a profit centre, it does have an incentive to "market" its service to the fishermen, encouraging them to increase production which will in turn increase the plant 's revenue (agency commis sions) and its profit - ability and ultimate ly its benefit to the fishermen.

While w e did not have an opportunity to meet officials of the NWT Fisher - men 's Federation, we received indirect reports of dis satisfaction on the part of this " customer". One of the claims that the Federation is reported t o have made is that the spr cads between lake prices and market prices are increasing, not dec reasing, as a result of the FFMC operations. However, we did not investigate the validity of this or any similar concerns as they are beyond the s cope of this study. Since, ac cording to FFMC officials, these fishermen *are* ultimate ly paying for the plant, a business approach to the operation would indicate a need for improved marketing and public relations. //

Pricing policy, normally an element of a business marketing strategy, is not a factor where the Hay River plant is cone erned sine e it must accept the agency commis sion rates set by the FFMC. The FFMC reports that the rates paid are standard for all plants regardless of location or capital cost. As the FFMC acts as its own agent in the NWT, it in effect sets its own rates without the benefit of a buyer /s e ller negotiation. Also, since the rates are Standard, there should be an incentive to strive for minimum capital and operating costs. However, the agency rate limitation has the effect of renderin, the plant uneconomic at full cost, thereby necessitating a capital grant. The FFMC is apparent ly rigid in its application of the agency rate s chedule and if an agency cannot operate economically under the schedule, then it must go out of business. Just what has happened in such circumstance s elsewhere was not revealed by the FFMC officials.

Since the FFMC operation is styled largely after the Western Canada Board Grain system, it should be noted that the grain industry provisions for independent regulation of tariffs do not exist. Similarly, there is no provision for independent arbitration in the event of a dispute. Unlike his farmer counter - part, who can receive an independent grade adjudication from the Canadian Grain Commission, a fisherman must accept the FFMC grade.

Taking the Hay River plant as a profit c entre, an important under - lying assumption is that the FFMC will be able to market all production passing through the plant. This means that there will be no market obstacle to the attainment of the forecast volumes. The FFMC officials are optimistic about the market prospects for fish from the Great Slave Lake area; both the traditional products and the new mullet and maria prod ucts. However, the officials indicate that there is no market research documentation that we could use for these assumptions. Industry officials are generally confident that maria can meet the quality standard to compete with saltwater fish in the remanufacturing market, but they suggest that price competition may be another matter.

While, for the purpose of this study, assumptions concerning market assurance must be made, it should be noted that there is some concern in the industry regarding the market for freshwater fish. Price competitiveness is a long term problem while mercury pollution is foreseen to be surmountable in the short term. Understandably, the FFMC inventory position is not publicized but there are unconfirmed reports of steadily rising inventories which could indicate a difficult market situation. Since the Department has acc ess to FFMC inventory and marketing information, it would be prudent from a business point of view to assure that the marketing assumptions made in connection with the plant are valid.

Production & Technology

The design and capital cost of the proposed plant were fixed insofar as the terms of reference for the study w e re cone erned. We did confirm with the FFMC the basis for the cost estimates shown in Exhibit 1. The land, fill and piling costs *are* based on actual expenditures to date. The building costs are based on competitive tenders. Equipment prices are based on supplier catalogues and prices paid for similar equipment installed e lsewhe re. The FFMC reports that $368, 424 has been spent to date on the new plant.

The plant is located in the new Hay River town site in an area designated as an industrial park. The site is located some distance from the Lake which is contrary to nor ma l FFMC plant lo cation criteria. How ever, one waterfront site was exc luded because of soil contamination, inadequate channel depth and lack of sewer and water facilities. Another site was considered impractical because of the lack of municipal sewer and water service, possible downstream pollution problems and difficulty in securing land. The problems in securin, a suitable site appear to be substantial but the obstacles do not appear to be clearly understood in the area because of inadequate communication of information.

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It is estimated by FFMC officials that the present plant location will add another 1/4 cent per pound for handling and transport; the FFMC reports that the projections provide for this added cost. Another disadvantage is the inconvenience to winter fishermen who must haul their catch greater distance by Bombardiers.

Whether or not a grant for a new sewer and water system for the plant on the waterfront would assist in the establishment of a water oriented industrial park as proposed in the Town's development plan and would influence the locational decision cannot be ascertained. However, this approach, using the Department of Regional Economic Expansion infrastructure grant arrangement might warrant consideration and the Department may wish to evaluate it for future situations.

While there is a need for improved receiving and freezing facilities to meet Fisheries inspection standards and FFMC calculations indicate a significant saving in transportation and supplies, the desirability of immediate expansion into mullet and maria processing is less evident. In this connection, the following comments are made from a business point of view:

* There is no evidence of a systematic analysis of alternative types of facilities and their evaluation in terms of relative costs and benefits.

* The FFMC projections do not provide for a cost breakdown to show the profitability of each product line or process function. A plant investment analysis involving such distinct product groups and particularly the introduction of radically new items should normally reflect the cost of each segment to justify its associated capital cost. It would appear reasonably easy for the FFMC to calculate the incremental cost of adding the mullet and maria processing capacity.

* The timing of the plant, or at least the mullet and maria processing elements, should be more carefully analyzed. The new products and processes being introduced in the plant are reported to be comparable to the new Winnipeg plant. It would be preferable to defer the Hay River plans until the Winnipeg plant is operational, the process problems resolved and market

acceptance of the new products determined through actual sales. The Hay River plant could then be designed with the benefit of this ...: experience, resulting in saving for the local fishermen.

* With respect to the development and exploitation of new products and processes, the usual sequence is:

1. Preliminary process development and market research
2. Laboratory process stage
3. Pilot plant stage
4. Full scale plant operation
5. Product and process refinement and market testing
6. Added production capability at original location or branch plant in line with previous findings.

It appears that the FFMC is proceeding from Step 2 to Step 6 insofar as the Hay River plant is concerned.

* The considerable length of time required to develop and gain significant market acceptance and penetration for a new processed food product may not be fully appreciated.

With respect to the production management staff and methods, the proposed plant would be so radically different from the present facilities that it is impossible to anticipate how quickly present management and supervisory staff could adjust to the larger scale and more sophisticated operations. However, it is reasonable to assume that with the assistance of FFMC head office production staff the plant can be made to operate efficiently.

Financial Management

At Hay River, only limited bookkeeping functions are now carried out. All financial management and major accounting is performed by the FFMC head office. Presumably, the new plant would operate in the same manner.

We did not make a specific analysis of the FFMC financial management but, in securing information on the Hay River plant, it was necessary to explore the relevant financial methods and systems. A financial institution considering a $1 million loan application from a corporation with sales of $14 million per year would expect a more penetrating pre-investment analysis. The overrun in project costs would also be of concern.

The FFMC does not prepare an annual budget for the Hay River Agency and, as a r esult, there is no effective means for controlling operations against plan. Also, the cost system is limited relative to the usual emphasis on costing in the food industry, particularly for a firm of this size.

We understand that a senior financial officer has recently been added to the FFMC staff and that he will have responsibility for overcoming many of the financial deficiencies referred to above. The introduction of budgeting and improved financial planning and management should be of as sistanc e to the Hay River operation.

ALTERNATIVE FINANCING METHODS

Initially, the Department indicated two possibilities for providing financial assistance to the plant: a $1 million grant under the Northern Program or a grant under the Indian Economic Development Fund. The Department officials subsequently advised that the project may not be eligible for assistance under the Development Fund.

Capital Grant or Alternatives

The FFMC has proposed a capital grant of $1 million against a total capital cost of $1. 5 million. There appears to be no underlyin, formula for this grant except that the FFMC believes it is adequate to put the plant on a viable basis. It should be noted that a grant of $1 million would reduce the net cost of the plant to $500, 000. The reason for seeking a reduction in the plant cost below the Corporationfs original estimate of $800, 000 (on which its feasibility projections were made), was not determined.

In deve loping a grant formula, two approaches might be considered: economic need of the plant; or, equity with competitive plants in other areas. Within each of these approaches, an infrastructure grant or operating grant or subsidy might be considered as alternatives to a capital grant. Some observations on these alternatives are set forth below.

Need Versus Equity

If need is used as the basis for a grant, the financial prospects for the plant require more careful analysis to determine the amount of the subsidy and, in the case of an operating grant, its duration. The available financial projections provide a clue as to the magnitude of the need but much more exhaustive analysis is needed to make a reasonably precise determination of need over the life of the project or even for the first five years. To assess more accurate ly the size of the subsidy based on need, an intensive analysis would be needed of the production/price situation, market prospects, transportation, plant operating costs and other factors.

If an improvement in fis hermen's income were set as one assumption and static or declining prices for fresh fish were another, then a grant based on need would be long term continuing program or a major lump sum grant. If such a grant were entertained, it would raise the basic question about the long term economic viability of the whole NWT fishery and the need for strategic development plans to provide assurance of an adequat e and stable income for the fishermen.

On the other hand, if equity with comparable food producing (particularly fish processing areas) were the basis, then the effect of a grant based on the Federal Department of Regional Economic Expansion (DREE) formula and other incentive plans should be considered. The maximum DREE grants in the Atlantic Region are:

Expansion/ Modernization	Up to 30% of capital cost
New Plants or New Product Expansion	Up to 35Y0 of capital cost plus up to $7, 000 per job created

A crude calculation of the application of the DREE new plant or new product expansion formula, assuming a maximum grant on the $1.4 million for buildings, equipment and other "DREE eligible ass ets and new e mp loyment of 26 per sons, indicates the project might qualify for a grant of $672, 000. Such a grant would put the new plant cost in the vicinity of the original FFMC estimates of $800, 000.

As for assistance by provincial governments in the Atlantic region, we did not investigate the various programs in detail. In general, such assistance takes the form of loans and guarantees, but some capital grants may also be available. However, the adverse experience of the Atlantic Region with such major fish processing projects as Acadia Fisheries of Nova Scotia and Gulf Garden Foods of Prince Edward Island would suggest that the Atlantic experience be used with caution.

Infrastructure Grants

Another approach to capital grants on an equity basis is the infrastructure program by DREE which provides for g rants and loans for sewer, water and other facilities to make the community more attractive for industrial develop- m ent.

It was suggested in the Hay River development plan that a water oriented" industrial park be created. An infrastructure grant might lead to its early realization. Such an industrial. park, with access to wate r, boat, rail and air transport, could be an important asset to Hay River and could create an ideal location for a fish proces sing plant. Once supplied, such an infrastructure program could yield benefits not only for a fish processin plant but also for other industries which could benefit local Indians. How ever, it appears that the plant location decision is irrevocable and, if so, this infrastructure e approach does not warrant further investigation.

Operating Grants

An equity approach might consider as well the effect of a grant using the principles of the various product development, productivity and trade development grants available from the Federal and provincial governments. For example, the Federal Department of Industry, Trade & Commerce (IT&C) programs generally provide 50 per cent of the costs incurred. A major portion of the operating costs, plant over head and manage ment pr ob le ms in the early years of the Hay River plant will derive Largely from the new product aspects (from production through processing to marketing). Thus, a major portion of the plant operating costs might be considered by the Department as " eligible" for a grant based on the principles of the IT&C programs. If, for example half of the operating costs in the first years were attributable to the mullet and maria program and other new products for Hay River and half of that amount were rebated as a product development or similar grant, the loss position of the plant would be reduced somewhat but not e liminated.

Operating Subsidies

As another approach, an operating subsidy for a specified period of years, might be considered. The major argument against such a scheme is that once a precedent is s et, it might be difficult to terminate the subsidies. Also, if such a plan were to be entertained, the Department should probably consider assuming part owner ship in the NWT agency, either directly or through the NWTG or local Indian group. In this way, the Department would have some control over the Hay River operation, the agency commission and other arrangements between the FFMC head office and the NWT Agency.

Impact of Alternative Grant Schemes

The effect on the projected financial results from the grant of $1 million, a DREE type of grant and no grant is s hewn in Exhibit 9. Without taking into consideration the savings that can be achieved on the transportation of fish from Hay River to Winnipeg, the projections for the Hay River plant indicate that, with a grant, a profit would be realized in the fourth year. Without a g rant, a profit would be realized in the fifth year.

In the case of the $1 million grant and the DREE formula grant, the turnaround occurs in the same year. How ever, the accumulated Loss is greater in the case of the latter approach.

The IT& C type of formula would not fully cover the plant's projected 10S ses. The effect of infrastructure grants could not be calculated but, in view of the

magnitude of the operating losses, it is unlikely that such a grant could have significant favorable results. Such a grant could be of greater benefit to a different type of plant such as a less costly receiving and freezing facility.

CONCLUSIONS & RECOMMENDATIONS

Conclusions

From our analysis of the available information and limited supplementary research and, taking a business point of view, we believe that more detailed planning is required for the proposed plant if grant monies are to be spent most effectively by the Department for the greatest long term benefit to the Indian people. The plant must operate in a complex production, marketing, regulatory and social environment. Its planning should be carried out and its feasibility assessed with considerably more information than presently exists.

Among the specific points which the Department should note are the following:

* The plant will play a key role in the future development of the NWT fishery and therefore its planning and design should be carried out within the context of the NWT fishery development plan now underway. This plan should in turn be based on or make assumptions concerning overall economic development strategy for the NWT.

* A five-year strategy plan for the Hay River agency, setting forth objectives, major activities and capital expenditures should be available to assess the impact of other expenditures on the profitability of the plant and the viability of the Agency.

* There appears to have been limited consultation with the NWT Fishermen's Federation and other local parties concerning the planning for the plant. More consultation should take place concerning the long range strategy for the Agency and the plant since it is the fishermen who ultimately will pay for the plant.

* There is too little known about the methods required for the economic harvesting of mullets and marias. An experimental program should be carried out with local fishermen to develop more information about this vital factor. The Fisheries Service harvesting and research program for Great Slave Lake during the summer of 1972 should make an important contribution in this regard.

* The market for the mullet and maria products is as yet undetermined and the market experience gained from the new Winnipeg plant should provide useful guidance for the planning and operation of the Hay River plant.

* The feasibility of the proposed plant needs more detailed analysis to meet generally accepted standards for an expenditure of the magnitude proposed.

* The success of the Hay River operation is solely dependent on the succ ess of the FFMC in offering attractive prices to the fishermen and in assuring a market for all production. It is also dependent on the agency rates paid by the FFMC. The Department should seek ass uranc es from the FFMC concerning its r e sponsibilities and intentions in these m atters.

* The fishery now provides Treaty Indians with significant financial benefits which could be increased by the new plant under the right conditions. One of the key elements that will be required is leaders hip and training and the N WTG s hou ld take action in this regard with Department assistance as appropriate.

* The sub stantial increase in capital costs between the original estimates and the late st estimates and the importance of depreciation charges indicate the need for tight control over construction costs. Consideration should be given to a fixed price or turn-key contract for the whole project to guard against major over runs. The experience of fish processin plants in the Atlantic provinces provides good examples of construction cost problems.

* Several approaches might be taken to determinin the size and type of grant to assist in the establishment of the plant. Unless the plant location decision can be reopened, infrastructure grants do not warrant c on side ration. If the matter were reconsidered, the reduced costs of handling and the quality benefits would have to be ass ess ed against infrastructure costs .

A grant based on the DREE incentive formula has considerable merit since it provides the Department with a precedent and would follow the readily defensible principle of equity with other areas. In the example used, the amount of the grant would reduce the plant cost to about the original FFMC estimate of $800, 000; another favorable feature.

An operating grant based on the Industry, Trade & Commerce product development and similar programs might be analyzed to help meet the cash flow needs of the new plant in the early years of operation. Unlike a capital grant, an operating grant would not distort the "balance sheet' for the Hay River operation, an important consideration in measuring the success of the Agency in future years. However, a cursory examination indicates that the IT&C formula would not yield sufficient funds to meet the early deficits.

An operating subsidy could become permanent and leads to the notion of participation in owner - ship of the Agency.

Until policy decision criteria are more clearly defined by the Department, the relative merits of the various approaches cannot be fully assessed.

* There could be considerable merit to deferring construction of the project until a more detailed analysis can be made. In view of the importance of this decision, the timing of the project has been examined and our conclusions respecting this major decision are outlined below.

Tit-ring of the Project

In light of the foregoing observations, the long term nature of the commitment and the substantial benefits and (possible liabilities) that could accrue to the Indian people in the Great Slave Lake and area commercial fishery, the timing of the project should be assessed carefully. There appear to be three possibilities.

1. Proceed immediately;

2. Carry out further planning with a view to proceeding during the summer or fall of 1972; *or*

3. Defer plans to 1973 or later.

Setting aside the third possibility for the time being, the advantages and disadvantages of the other two alternatives are:

Proceed Immediately - Advantages

* Benefits from the plant will be achieved sooner;

* Problems of fishery inspection compliance and possible refusal to license would be avoided;

* Construction employment during the winter of 1971/72;

* Possible escalation of capital cost avoided.

Proceed Immediately - Disadvantages

* NWT fishery development plan not available;

* Market acceptance of mullet and maria products from the Winnipeg plant not known;

* Process results from deboning in Winnipeg plant not known;

* No research into harvesting methods and cost for mullets and maria;

* Acceptability of proposed mullet and maria prices to fishermen not known;

* Added cost of winter construction;

* No opportunity for consultation with Fishermen's Federation and others concerning plans for the plant.

Defer to Summer or Fall of 1972 - Advantages

* NWT fishery development plan available and proposed plant can be assessed within that context;

* Opportunity to ass ess impact of NWT development plans for roads and other infrastructure investments and other programs on fishery development;

* Opportunity to benefit from new Winnipeg plant experience in terms of market acceptance of new products, process technology, and operating experience;

* Possibility of deferment of some construction to winter of 1972 / 73 when need is greatest. Assuming that this winter 's Work Arctic Project proceeds, the plant construction would be a logical fo now -up for next winter;

* Opportunity to carry out mullet and maria fishing experi - ments in the spring of 1972 using commercial fis her men (fish could be shipped to Winnipeg on a subsidized r e search deve lopment basis o r returned to the Lake);

* Opportunity to benefit from Fisheries Service rough fish harvesting res ear ch study proposed for this summ er;

* Opportunity to carry out more detailed feasibility studies for the plant;

* Opportunity to initiate a training program for lo cal Indian people to facilitate their participation in the income and employment benefits from the new p lant and the expanded commercial fishery. The maximum pos sible lead time fo r a t raining program for the local Indian people is de sir - able;

* More comprehensive and more intensive planning should provide a better assurance of long term success for the Great Slave Lake and area commercial fishery;

* An analysis of other plant locations could be made in the light of the possibility of sewer and water and other infrastructure programs. The Hay River development plan calls for the extension of sewer and water to the Island area in future and a grant might be provided to accelerate this program. more thorough plant location study that considered the effect of an infrastructure grant, the extra costs of handling and transport, and a total distribution cost analysis of the Great Slave Lake fishery opposite the market could lead to important conclusions respecting added benefits for the area fishermen.

* More opportunity for fishermen, the NWT Government and others to participate in the planning process to secure their support for the projected development.

Defer to Summer or Fall of 1972 - Disadvantages

* Possibility of Fisheries Service refusal to license present plants even with modifications and improvements;

* Deferral of potential benefits;

* Deferral of construction employment (important if the Hay River labour pool project for this winter is not approved);

* Possible escalation of capital costs as a result of increases in labour and material prices;

* Expenditure of $10-20, 000 in short term improvements on existing plants.

On the basis of the information available, there appears to be cons ider ab le merit in deferring construction unti l further investigations have been conducted. However, there may be social and other reasons for proceeding imm ediately. One key factor is the licensing of the facilities by the Fisheries Service.

If licensing were to be refused, the costs of temporary or alternative facilities would have to be assessed against the benefits of deferral. We learned directly that the FFMC has considered a new receivin, plant at Hay River which would have a cost in the order of $80-85, 000. In view of the size of the grant r eque steal and the many other factors indicated in this ana lysis, a thorough study of all the alternatives would be desirable, evaluating the proposed plant against other approac hes.

In our study, w e do not see any evidence that a comprehensive analysis has been made of the problem of delivering fish from Great Slave Lake to market using total distribution cost techniques. This approach should also be taken into account in a more detailed study.

Recommendations

Our recommendations with respect to the proposed project are as fo Hews:

* The Department should ask the FFMC to defer plant construction for the reasons outlined above.

* If deferral takes place, action should b e taken as indicated in the Advantages of Deferral section above.

* If plant construction is not deferred, then the Depart ment should develop a set of decision rules for a grant and examine the alternative approaches against these criteria.

* Any grants should have conditions attached coverin, the FFMC responsibilities and arrangements relative to the Hay River operation, control over construction costs , an in-plant training program for Indian employ - ees and equal opportunist y for T r eaty Indians.

* **Before approving a grant, the Department** should **stud y the r ea sons underlying the failures of Acadia Fisheries and** Gulf **Garden Foods to determine possible pitfalls to be avoided and appropriate conditions to be attached to a grant.**

* **The Department** should **work with the NWTG to ens ure that Indian** people **resident i n communities around Great** Slave **Lake are given the necessary enc our ag ement, leadership and training to** enable **them to participate more** fully **in** all **phases of the fishery.**

APPENDIX A

LIST OF OFFICIALS CONTACTED

Freshwater Fish Marketing Corporation - Winnipeg

D. F. Corney - President and General Manager
N. M. Knight - Controller
F, A. McFadden - Financial Manager

Freshwater Fish Marketing Corporation - Hay River

George Helmer - Zone Manager, NWT Zone

Northwest Territories Government

R. "Shorty" Tinling - Fisheries Development Officer, Yellowknife
Mr. Busby - Supervisor, Social Development, Hay River
G. A. "Casey" Jones - Area Industrial Development Officer, Hay River
A. Ballantine - Director, Industrial Development Branch, Yellowknife

Department of Environment - Hay River

Morris Howe - Chief, Inspection Services
Arthur Lancey - Chief, Fishery Management

Department of Environment - Winnipeg

W. Beggs - Inspection Service
D. Hagborg - Chief, Economics Branch

Department of Environment - Ottawa

J. Mullaly - Executive Assistant to the Minister
G. L. Grant - Chairman, Fisheries Prices Support Board

Department of Indian Affairs & Northern Development

H. M. Budgell - Fishing Specialist, Development Services Branch
I. D. Cunningham - Senior Auditor, Analysis and Evaluation

APPENDIX B

NOTES TO SYSTEMS DIAGRAM FOR PROPOSED FISH PROCESSING PLANT AT HAY RIVER. NWT

PRIMARY PRODUCTION

The proposed plant is geared to serve the commercial fishery tributary to Hay River, an area extending some 200 miles from Hay River. Great Slave Lake and Lac la Martre are foreseen by the FFMC to continue as the major production lakes with other inland lakes being harve steal from time to time.

The FFMC foresees the new plant increasing primary production in two ways: 1) the opening of several new lakes and, 2) the harvestin, of new species (primarily mullet and maria).

A review of the Gr eat Slave Lake commercial fishery and its importance is found in a 1967 report by the Department of Indian Affairs & Northern Development (1). Pages 93 to 97 of that report provide useful background for the purposes of this study.

Great Slave Lake is the major producing lake. Results in weight and lake value for the past ten years for Great Slave Lake are found in Exhibit 10. Average prices per pound have been calculated for Whitefish, Trout and Coney, fro m these data and they are shown in Exhibit 11. For the 1971 /72 summer fishery, the catch is reported to be below the previous season. This is attributed by local officia ls to forest fire fighting w hic h drew manpower from the fishery. The prices paid by the FFMC in the 1971 /72 summer season as compared with the preceding year were ess entially unchanged for whitefish and w er e increased in some cases and reduced in others for trout.

The FFMC production and value projections for the first five years of the project are shown in Exhibit 12. The price assumptions made concurrent w ith the forecasts are shown in Exhibit 13.

The financial success of the proposed project is contingent on an adequate flow of fish through the plant. Therefore, the FFMC's ability to stimulate and sustain production is of c riti cal importance. The outlook for future production is difficult to predict since it invo lves consideration of a variety of social and economic factors. The NWT Fishery Development Task

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(1) Great Slave Lake - South Shore: An Area Economic Survey; D. Radojicic, Industrial Division, Department of Indian Affairs & Northern Deve lopment, 1967

COMMERCIAL FISHERY RESULTS - GREAT SLAVE LAKE
1961-70

	WHITEFISH		LAKE TROUT		NORTHERN PIKE		PICKEREL		CONEY		OTHER	
	Weight (lbs)	Value ($)	Weight (lbs)	Value ($)	Weight (lbs)	Value ($)	Weight (lbs)	Value ($)	Weight (lbs)	Value ($)	Weight (lbs)	Value ($)
1961	4070267	510353	1309608	140071	229915	11573	19305	1789	213728	10074	11808	58
1962	4474872	603372	1156122	171878	312387	14446	11229	1250	286983	21346		
1963	4281360	559491	683280	102736	255581	10416	13853	1070	321692	19174		
1964	4125161	650175	679833	105154	197685	8673	23140	1267	299256	22248	11094	560
1965	3641774	732585	808549	147547	255214	10890	30766	4966	304612	28457		
1966	2488903	518993	563855	115297	429788	30498	30631	6696	209162	23779	60901	2288
1967	2281073	499314	658497	143327	412276	32894	35067	5825	234439	27780	38424	1431
1968	3137871	677562	263543	54211	290416	15010	24470	3775	180312	13291		
1969	3173114	804984	301759	73240	334302	16331	15917	4136	177240	11581	1147	48
1970	3182042	911230	488648	129369	274964	15372	18536	6421	137651	10208		
Totals	34856437	8145289	6643694	1182830	2992528	166103	2=2914	37195	2365075	187938	123374	4385

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AVERAGE PRICE PER POUND (cents) - GREAT SLAVE LAKE

Year	Whitefish	Lake Trout	Coney
1961	12.5	13.5	4.8
1962	13.5	14.9	7.4
1963	13.3	15.0	5.9
1964	15.8	15.5	7.4
1965	20.1	18.2	9.3
1966	20.9	20.4	11.4
1967	21.9	21.8	11.8
1968	21.6	20.6	7.3
1969	25.4	24.3	6.5
1970	28.6	26.5	7.4

SOURCE : Fisheries Service data - Department of Environment

FIVE YEAR PROJECTED PRODUCTION THROUGH PROPOSED PLANT AT HAY RIVER

PRODUCTION (000's lbs.) & DOLLAR VALUE ($000's)

TO FISHERMEN

	Actual 69/70		Projected 72/73		Projected 73/74		Projected 74/75		Projected 75/76		Projected 76/77	
	lbs.	$	lbs.	$	lbs.	$	lbs.	$	lbs.	$	lbs.	$
whitefish	3,300	977	3,600	1,080	3,900	1,100	4,000	1,120	4,300	1,140	4,300	1,140
Pickerel	81	26	100	35	200	80	250	100	300	120	300	120
Trout	467	160	400	120	400	120	400	140	500	175	500	175
Northern Pike	177	14	400	48	600	90	750	112	800	120	800	120
Inconnu	90	9	100	10	100	10	100	10	100	10	100	10
Mullet (H&D)	--	--	500	30	900	54	1,000	60	1,250	75	1,500	90
Maria (H&D)	--	--	200	12	300	18	400	24	500	30	600	36
TOTAL	4,115	1,186	5,300	1,335	6,400	1,472	6,900	1,566	7,750	1,670	8,100	1,691

Source: FFMC September 14, report

P. S. ROSS & PARTNERS

AVERAGE PRICES - HAY RIVER AGENCY

	Year	Price	Year	Price
Whitefish	1969/70	$. 296/lb.	1976 /77	$. 265/ lb.
Pickerel	"	. 321 /lb.	"	. 400/ lb.
Trout	"	. 342/ lb.	"	. 350 / lb.
Northern Pike	"	. 079 /lb.	"	. 150 / lb.
Inconnu	"	. 100/lb.	"	. 100 /lb .
Mullet	"	. .	"	. 060 / lb.
Maria	"	--	"	. 060 / lb.

Source: FFMC September 14, Report

Fore e should come up with significant cone lusions and recommendations in this regard.

Based on the readily available information, several key points should be noted in connection with the primary fishery:

1. P reduction of the major species has declined significantly between the early 1960s and the latter part of the decade. There is no industry c onc ens us as to the reasons for the dec line.

2. A major incr ease in whitefish production is fore seen by the FFMC despite the historical pattern of dec lining or static production.

3. Whitefish and trout prices rose sub stantially during the 196 O's but have [evened off over the past year and are fores een by the FFMC to decline for whitefish and to increase slightly for trout.

4. Given the past production patterns and the forecast pric es, fishing is likely to become increasingly [ess attractive r e lative to other forms of emp lo yment. Unless new technology provides for high income pot ential, it may become pro r es sively poorer particular ly to those better skilled and more ener - getic members of the labour force.

5. The production of coney has shown a wide fluctuation in production roughly parallel to the price offe red. Sine e the projected mullet and maria prices are relative lylow, it may be difficult to generate inter e st in their production.

All of the foregoing factors contribute to the considerable uncertainty uncle r lying the r ealization of the production fore casts.

Production Inputs

A brief review of the inputs into the primary production phase and the implication for the T r eaty Indians is as follows:

1. Fishery Resources - The Fisheries Service manages the resource on a quota basis. Annual quotas are set for Great Slave Lake and two year harvestings out of six year cycles for the inland lakes. The Great Slave Lake quota for "comme rcial species" , whitefish and trout, is 4.8 million pounds. This level might be increased to 5.3 million pounds w hen more experience is gained in the management of the lake. There are no established quotas for other species. The quotas for the inland lakes in the area would approximate 10 per cent of the Great Slave Lake quota. Apart from the commercial fishery quotas, there are provisions for " domestic" harvesting. Also, provision is made for unrestricted harvesting within designated areas by Indian residents of communitiess around the lake.

2. Manpower - Apart from the co-operative at Lacla Martre, the commercial fishery in the Great S lave Lake area consists principally of independent opera - tors. While there have been proposals for other co-operatives, none of them has mate ria li zed.

   On Great Slave Lake, the larger boats normally require a captain and a c r ew of two to three w hi l e the s mane r boats are operated by two men. According to the FFMC report, 200 men are currently engaged in the primary fishery. Of this total, 170 a r e found on G r eat S lave Lake, 20 on Lacla Ma rt r e and 10 on other inland lakes. The FFMC forecasts the total to increase to 280 by 1976/77. Half of this increase is fore seen to take place on Great Slave Lake with the other half on the inland lakes. The FFMC projections are qualified, indicating that c hang e in fishing technology cou ldalter the estimates considerably. A study of fishing methods on Great

Slave Lake is to be made by the Fisheries Service during the summer of 1972.

Indian people work in the fishery both as self-employed fishermen and as crew on the larger boats. A Fisheries Service list of commercial licenses for Great Slave Lake, Lacla Martre and other inland lakes indicates that Treaty Indians make up some 20 per cent of the total. The details are as follows:

Resident Commercial	155
Non-Resident Commercial	55
Indian Commercial	63
Total	273

While no detailed information could be found concerning the role of Indian people in the fishery, one source noted that the majority of non-Indian fishermen are forty years of age or older whereas the Indian fishermen tend to be younger. The effect of attrition could provide the Indian people with an opportunist y to play an increasingly important role in the fishery.

3. Equipment - The major equipment and supply inputs are boats, motors, fishing gear, fuel and repair and maintenance expenditures. On Great Slave Lake, the size of the lake requires larger boats for off-shore operations, normally fishing craft in the order of 40 to 45 feet in length, steel or wood hulls, with diesel engines. The cost for such equipment is in the order of $6-7,000 for a good used vessel. There are some 35 craft of this type on the lake, all of which are actively engaged in fishing at the present time.

For the in-shore fishery on Great Slave Lake and for the harvesting operations on Lacla Martre and the other lakes, skiffs or yaw-ls, some 18 feet in length and powered by outboard motors in the order of 18-35 h. p., are used. The cost for a boat and motor of this type is about $ 3,000 for new and $1,000 for used equipment.

The fishing gear used is $5\frac{1}{2}$" net. For the mullet and maria fishery proposed for the new plant, new equipment may be needed.

Fuel and other supplies are purchased at the beginning of and throughout the operating season as required. Repair and maintenance work is generally done by the fishermen themselves with specialized work on engines and radio gear being done by local tradesmen. Supplies are purchased primarily from the FFMC at Hay River and, in the case of Lacla Martre, the supplies aspect provides little or no employment for the Indian people.

Indian fishermen do not operate large boats or Bombardiers at present. They operate from small boats, snow mobiles and dog teams.

4. Transportation & Handling - It is the responsibility of the fishermen to deliver fish to the FFMC plant at Hay River or to one of the three FFMC receiving stations. These stations operate as an extension of the Hay River plant and are therefore considered part of the receiving and processing rather than the primary production phase.

Fisher men operating the inland lakes must make arrangements for charter aircraft or other means to move the product to the receiving station. For convenience in the winter, the FFMC arranges for trucks to be available at Yellowknife to move fish to the Hay River receiving plant. The fishermen are assessed for the cost of the trucking.

The fishermen's co-op at Lacla Martre operates a receiving and icing station and fish are flown from this station to the FFMC receiving station at Wool Bay. This plant is reported to employ about ten people during the summer operating season.

Apart from the Lac la Martre station, which is operated exclusively by Indians, there is little or no Indian employment in the other aspects of the transportation and handling phase.

5. Capital - The organizations and individuals engaged in the primary fishery are generally under capitalized. Furthermore, their specialized operations and limited security present difficulties in obtaining working capital loans from chartered banks, credit unions and other normal lending agencies. As a result, it has been a practice in the industry for the fish processing and marketing companies to provide advances. Under the FFMC structure, the Corporation is responsible for the provision of these advances. However, the amount of the advance is deducted from the initial payments made by the FFMC or its agent.

With respect to long term capital for boats and other equipment, the Lac la Martre Co-op leases all its facilities from the NWTG. Fishermen on Great Slave Lake have available the NWTG Fishermen Loan Fund. However, most of the loans out standing are for the purchase of large fishing boats. Since Indian fishermen do not own any of these craft, they have made limited use of the fund.

Organizations Involved

There are a number of operating, regulatory and support organizations involved in the primary fishery in the Northwest Territories. The principal organizations and their functions are set forth in the systems diagram.

With the exception of the NWT Indian Brotherhood, the organizations involved make little special provision for Indian people, since their terms of reference are geared to area source management or economic purposes rather than social objectives.

PROCESSING OPERATIONS

In the systems diagram, the principal production inputs and the major organizations involved are shewn. Since this phase is examined in detail elsewhere in the report, a review is unnecessary in this section.

MARKETING

The systems diagram indicates the two main input elements for the marketing phase to be : 1) manpower for marketing and administrative functions and 2) facilities and equipment for the movement and handling of the product from Hay River to the marketplace e. With respect to organizations, the FFMC has full responsibility for marketing. The other agencies involved are concerned with regulator y functions, the ownership and direction of the FFMC and broader policy is sues.

While this phase has important significance for the ultimate success of the fishery and hence the Indian people pre sent ly o r potentially involved, there are no specific implications for this proposed project that warrant examination at this time.

APPENDIX C

NOTES TO STATEMENT OF REVENUE & EXPENDITURE (1)

1. All dollar figures in 1971 dollars.

2. The volumes for the years 1969 /70 and 1970 /7 1 are the actual volumes handled by the Hay River Agency during these years. For the six months ended October 31, 1972, the breakdown was not available. The projections for fresh, frozen and deboned products for the five years ending in 1976 /77 were extracted from the FFMC report.

3. Agency commissions for the first two and a half years are actual; the projections for the five years ending in 1976 /77 were taken from the FFMC report. The FFMC projections were arrived at by using the rates that are in force now together with nominal increases each year based on the $9\frac{1}{2}$ cent figure which was used for 1972/73 for fresh fish processing, broken down as follows: $2\frac{1}{2}$ cents for containers, 2 cents for administration and 5 cents for packing, including ice. The $6\frac{1}{2}$ cent agency commission for frozen fish for the year 1972/ 73 is made up of $1\frac{1}{2}$ cents for containers, 1 cent for administration and 4 cents for packing. These figures indicate a 3 cent/pound saving in the processing of frozen fish as opposed to fresh fish.

4. Freighting income represents the gross income received from the packer vessel for the years included in the projection. The freighting income for the years 1969170 and 1970/7 1 represent 2 cents per pound charge for freighting the fish to the processing plant. Details on the packer vessel operations are shewn in Exhibit 4.

5. Store sales represent the product margin (that is gross sales less cost of product) on sales of such items as clothing, fishing gear, nets , parts for snow mobiles, and other items which are sold to residents in the Hay River area through the Corporation stores . The mark -up is generally 10 per cent.

6. Purchase discounts are the estimated amounts to be received from discounts from suppliers on supplies purchased during the year.

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(1) Source : Freshwater Fish Marketing Corporation

7. Salaries and wages for the first 2½ years are actual and for the five years in the projection have been calculated on the basis of 5 cents per pound process ed with this figure declining during the latter years. The Corporation maintains that it will be difficult to maintain labour costs at much less than this 5 cent a pound figure. These forecasts represent a reduction by the FFMC from the original forecast for the latter years.

As one means of examining these figures, the supplementary staff and their estimated wages as projected by FFMC management in Hay River were added to the present wages and salaries. The total on this basis is s lig ht ly less than the FFMC report forecasts but the cliff e renc e is not so great as to materially affect the aggregate results.

8. Employee benefits have been based on the projected salary and wages figure and based on the benefit cost that has been experienced over the last two years. The benefits have been found to approximate 5 per cent of salaries and wag es.

9. Travel costs have been conservatively estimated for the projection based on the Corporations experience over the past two years.

10. Communications include the costs of Telex, telephone, telegraph, and the FFMC radio system connecting the Hay River office, packer vessel and the receiving stations.

11. Supp Lies include packing materials, cartons, etc. , that are used in the proces sing operation and this figure in the projections includes packaging mate rials, the majority of which will be purchased from out side of the Hay River area. Although it is anticipated that at some future date some of these materials may be acquired locally, initially FFMC anticipates that 95 per cent of the supplies will be acquired from Winnipeg or Eastern Can ada. The Corporation indicates that the production of more frozen and proc ess ed items will necessitate a g r eater number of supplies than at present. The supply requirements are based on the FFMC's rough estimates. How ever, these forecasts approximate the per pound supplies cost used for the Agency c ommis sion calculations s hewn in item 3 above.

12. Accommodation includes the cost of renting space and facilities. The FFMC has e lim inated this cost for the purpose of the projections sine e the present Hay River plant would no longer be required.

13. An estimate by the FFMC.

14&l 5. Insurance and utilities have been projected by the FFMC on the basis of its own estimates; no quotations have been secured.

16. Maintenance costs have been proje cted by the FFMC on the basis of its p lans for the new plant.

17. An estimate by the FFMC based on past experience together with the need for trucking the fish from the dock to the plant.

18. Cookhouse expense represents the net cost of the FFMC operating this facility for its employees in Hay River. T his includes the total cost less the amount recovered from the employees for services rendered.

19. Even with the ice -making capacity of the new plant, it is anticipated that additional ice will be required. The cost of ice is estimated by the FFMC to start at approximately $7, 000 per year, increasin, to $10,000.

20. Some bad debts are incurred on store sales and the FFMC has made provision for anticipated future lo sses in projections.

21. The bank inter e st charges r elate to the FF MC bank account in Hay River. In future, these costs are to be absorbed as corpor ate costs.

22. The depreciation figures include the receiving stations, the packer vess el, the new plant and miscellaneous assets. The details are as fo [lows:

	1972 /73	1973 /74	1974/7 5	197 5/76	1976 / 77
Plant	$106,400	$90,720	$79,820	$70,200	$59,960
Packer Vessel	29, 400	25, 000	21, 250	17, 100	15, 350
Other	24,000	19, 000	13, 000	10, 000	8, 000
Total	159, 000	134, 720	114, 070	97, 300	83, 310

23. The packer ves sel costs have been projected using the 1971 expenses as a basis. Details are s hewn in Exhibit 4.

APPENDIX D

NOTES TO STATEMENT OF BENEFITS OF GREAT SLAVE LAKE AND AREA COMMERCIAL FISHERY TO TREATY INDIANS

1. All figures are broad estimates only since there are many seasonal workers in the industry. Also, as for potential employment and income, there is considerable latitude in what might be realized. Alternative employment opportunitiess, seniority of present employees, etc. will all have a bearing on what benefits the Treaty Indians from the area might realize from the fishery. Moreover, there is considerable uncertainty as to the future conditions that will prevail in the whole fishery and its processing elements in the light of market factors, acceptance of new products, the fishermen response to offered prices and other factors. In view of the fact that the figures are approximate they have been rounded in many cases.

   The potential figures are based on the period of 1976/77, the last year of the FFMC projection, with an attempt to balance the theoretical potential against the realities of the present social and economic situation of the local Indian people and the general industry uncertainties.

2. While nearly 300 commercial fishing Licenses are issued, only some 200 licensees harvest a sufficient quantity of fish to be considered by the FFMC as being seriously engaged in the fishery. We have used the FFMC figures for present employment but adjusted the employment forecasts lightly, taking only one-half of the forecast increase. On the basis of our research in the NWT and Winnipeg, we believe that this more conservative approach is desirable. Technological developments in harvesting and the economics of the primary fisheries may well dictate a decline in employment rather than an increase. Fisheries Service officials expect that new technology will be needed for the economical harvesting of mullets and marias and that even the harvesting of the present commercial species may require new, more capital intensive methods to remain economic. A footnote to the FFMC income forecasts indicates the Corporation awareness of the possible changes in technology and their influences on employment and income.

   Specifically, the FFMC employment figure of 170 for Great Slave Lake was examined and the number of Indians was estimated at 90, taking 63 Treaty Indians holding commercial Licenses and an average of one Indian employee for nearly all of the large vessels in the fishing fleet. This is a crude estimate but a more detailed analysis could not be made in the time available. The FFMC forecast of 30 more jobs in the Great Slave

Lake fishery was reduced by one -half, for the reasons indicated above. Again, a crude assumption was made that betw een this increase and a greater share of the present number of jobs, the Indian peoplewould increase employment by 20, from 90 to 110.

The FFMC figures for Lac la Martre were used directly. These indicate a static 20 job situation, all of the employed being Indians. For the other lakes, the FFMC forecast an increase of 50 jobs from 10 to 60. On the basis of interviews with various officials, we fee l that this forecast may be optimistic and an increase of one- half of this amount was used. However, it was assumed that all of the added employment would be secured by Indians.

3. In the FFMC report, the annua L earnings per man engaged in fishing, assuming no capital grant, w e re calculated at $5, 930 at present and $6,040 in 1976/77. In Exhibit 8, the Fisheries Service data indicates the mean income for the Great S lave Lake fishermen at $4, 901.39 for 1970/7 1. This Table s hews as well the great disparity between the income received by the larg e vessel operators and the fishermen in s mailer craft.

Data in the Department November report on the project indicate average revenue for Indian fishermen at $550 for the summer season and $500 for the winter season. By comparison, the report shows the average income for non -Indian fishermen at $6, 500 and $4, 700 for the summer and winter seas ons respective ly.

In attempting to forecast the income derived from the fishery by Indians, the for egoing information was considered and it was cone luded that the diffe rent income situation for Indian fishermen should be reflected in the benefit estimates. It was felt that an effort to s how this distinction s hou ld be made even though the figures might not be pr e cis e.

Ac cording ly, it was decided to use $1, 000 as a rough figure for annual Indian income from the fishery and $2, 000 for wag es for employees on the boats. For the future projections, annua l income for Indian fishermen was optimistically forecast to increase to $2, 000. Under lying this f. re - cast increase was the as sumption that a significant effort would be made to better equip, train and encourage Indian fishermen.

The FFMC report indicates the total income for the Great Slave Lake fishery at $1, 008, 100 at present whereas the Fisheries Service data indicate it to be $901, 857 for 1970/71. For the purposes of the benefit calculations, we have used the FFMC total income e stimates for both the pre sent and projected figur es. In this way, a rough indication can be made as to the share of the economic benefits that are being derived by Indian people.

Data prepared by the NWTG report Lac la Martre fis her mens income at $30, 000 and this figure has been used. For the other lakes, the Lac la Martr e income figure of $1, 500 per fisherman has been applied as well.

4. It has been assumed that the Lac la Martre receiving and icing station operation w ould remain static. The information on payments to receiving station employees was provided by the NWTG.

5. The employment figures for this aspect are crude only. They are based on approximately 15 federal fisheries employees w ho are responsible for inspection and fisher y management functions, the NWTG fisheries develop - ment personnel and an allowance for transportation and handling, part-time government and other employees. The projected figures are a broad estimate of the possible manpower needed over the next five years in response to the growth of the fishery, increased attention to its deve lopment and management and additional inspection services in connection wit h the new plant and expanded fishery. Conservative per job income figures have been used: $8, 000 per year for total employment; $3,000 for temporary employment at present; and, $7, 000 for projected Indian employees, as suming that they wou ld occupy more junior positions.

6. The present employment and income data for the FFMC Great Slave Lake operation were provided by the FFMC as were the data cone erning Indian employment at the present time. With the present facilities, the total number of employees is 54 (including the Zone Manager) durin, the four months of summer operation and about 23 during the winter operations. Of the 54 summer employees, 27 are Indians from all locations and of that number about two are local Treaty Indians. T his indicates employment of some 25 Treaty Indians from Manitoba and Saskatchewan or elsewhere who live in Hay River year ' round or season-ally. The gross payroll for a typical summer month, excluding the Zone Manager and a number of key personnel that could not be replaced by local Treaty Indians, is 11.

The projected employment figures are based on the estimate of the Zone Manager. He foresees another 25 plant employees for the new facility. Of this total, 8 might be women. Except for two of the head filleters, local Indian labourcould provide the manpower required. The anticipated wages are $300/month for women and $550/ month for men. With the stockpiling of raw product, these jobs are foreseen to be essentially year round and our estimates have been calculated accordingly. We have allowed for an additional office employee at $550/month to handle accounting, payroll and other duties.

Time did not permit a detailed manpower and payroll analysis to determine the share of the total payroll that might be secured by Treaty Indians, local and other. A brief examination of the available data indicated the present share to be in the order of $75-$100, 000. We have used a figure of $80, 000 which is probably on the conservative side. All of the added income, except that attributable to low production jobs, has been s hewn as being received by Indian people.

7. Any added employment and income has been included in the fisheries manage ment and other aspects uncle r primary production for convenience e (see note 5).

8. While we might have taken the total of employment and income for the direct FFMC corporate operations and allocated some back to the NWT fishery, we did not feel that this would be particularly useful. Similar [y, although there might be some indirect employment and income generated in the transportation and other supply and s ervic e aspects r e lating to the marketing function, w e did not believe that this would be sufficiently important to warrant inc lus ion.

9. While in terms of skills, Treaty Indians might well be able to carry out many of the jobs now held by Metis and Whites, the seniority of the incumbents, their accumulated job experience and the reliability problem are all practical obstac les in the short term. Therefore, no major increase in Indian employment through the replac e ment pro c ess has been provided for. In the longer term, another 20 t. 30 jobs or more might be as sumed by Indian people, but the realization of these extra jobs is difficult to foresee if the FFMC is to operate on an economic basis. The same principle applies in the case of the primary fisher y. In this case as well, another 20 or 30 jobs or more might w ell be realized.

No distinction has been made in this analysis between Indians who are members of Bands working and living in Hay River and Treaty Indians from Bands elsewhere in Western Canada. While, over time, it is desirable that local Indians participate more actively in the benefits deriving from the fishery operation, our terms of reference did not provide for this distinction to be made.