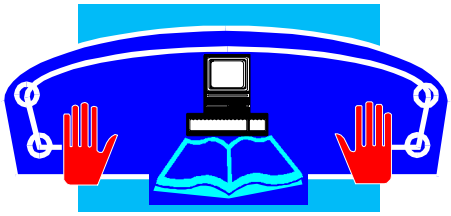

Keewatin Arctic Char Plants; An Investment Concept
Type of Study: Processing / Manufacturing
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FISHERIES

3-7-21

KEEWATIN ARCTIC CHAR PLANTS

AN INVESTMENT CONCEPT

Prepared by:

Natural Resources Section

Economic Development and Tourism

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INTRODUCTION

The Keewatin region is the second largest producer of export grade arctic char. The fishery has been hampered by lack of organization and deteriorating plant capacity. The risk associated with investment in renewable resource ventures, and the difficulty in accessing debt capital to finance such endeavors have deterred private investment in new capital in this fishery.

The Keewatin fishery presents an investment opportunity for the NWT Development Corporation which is consistent with the Corporation's mandate. Efficiently operated as a single enterprise, new fish plants in two Keewatin communities offer a positive return on investment for the Corporation and source of income' for Inuit in communities with few employment alternatives.

PROPOSAL SUMMARY

Approval in principle is sought for capital investment by the NWT Development Corporation in two fish plants in Whale Cove and Rankin Inlet in the Keewatin Region. The capital cost, exclusive of land, is $190,000 for each plant, a total investment of $380,000. These plants will replace existing facilities serving the arctic char fisheries in these communities; these facilities must now be replaced, but there is insufficient interest or capacity in the private business sector to invest in these opportunities.

The Development Corporation is also requested to assume control of the canned smoked arctic char project initiated by Economic Development and Tourism. To this end, a portion of the char production of the two Keewatin fish plants, 20,000 pounds, would be dedicated toward this product.

Upon approval in principle, the Development Corporation is requested to commit $25,000 toward the development of plant design specifications and drawings of sufficient detail to solicit bids for construction.

KEEWATIN CHAR PIANTS: INVESTMENT CONCEPT

Upon receipt of bids for construction a full business plan will be presented to the Development Corporation for final approval.

CORPORATE MANDATE

The proposed investment is consistent with Corporation's mandate as described in the Northwest Territories Development Corporation Act, Section 3(a) to:

(i)create employment and income for residents of the Territories, primarily in small communities

(ii)stimulate growth of businesses in the Territories, and

(iii)promote economic diversification and stability

BACKGROUND

Fishing has always played an important part in the economic welfare of Inuit in the Keewatin region. The arctic char fishery was a keystone in the foundation of the pre-contact round of economic activity, and this fishery is still an integral element of the modem subsistence economy.

Efforts at establishing a commercial fishery were made by agents of the federal government almost as soon as representatives of Canadian government were established along the Keewatin coast. These attempts were inspired by reasons very similar to principles compelling current efforts to establish northern fisheries: the provision of opportunities for employment, cash wages and utilization of local resources to replace costly imports. However, in the early 1960's a more urgent argument motivated the actions of early government employees: provision of food in newly established communities where access to resources was interrupted by the requirements of settlement

living, and the vagaries of resource migration which had precipitated the starvation experienced by inland Inuit in the late 1950's.

Early efforts in commercial fishing concentrated achieving a supply of resources for a cannery in Rankin Inlet to produce a volume of product sufficient to feed local Inuit populations along the Keewatin coast. The Rankin Inlet cannery was originally located north of Chesterfield Inlet in Daly Bay, but was moved when the area consistently failed to provide enough char for operations.

The cannery was fed with char caught in Rankin Inlet, whitefish and trout harvested from large inland lakes in winter, and whales caught out of Whale Cove and packed in freezer barges for transport to Rankin Inlet. When calculating financial statements for the cannery operations, the costs of these supply operations were ignored.

As long the primary purpose of the cannery was to provide a consistent supply of local food, the total cost of operations could be justified on a social accounting basis. However, in late 1960's and early '70's, the objectives of the program turned increasingly toward financial viability. Burdened by enormous utility costs and wide-ranging field operations required to maintain a resource supply necessary for near year-round operation of the cannery, the conclusion was inevitable: the cannery would never be financially self-sufficient, and therefore must be shut down.

In the mid 1970's, unable to find markets capable of supporting the high cost of operations, the cannery was shut down. However, the plant operated in a limited seasonal capacity to freeze char caught in Rankin Inlet for shipment to the Freshwater Fish Marketing Corporation in Winnipeg. Even this operation was not financially viable, since the fixed costs of operations were those of a cannery operation designed for a much higher volume of product than the freezing operation produced. And, in 1983, the limited viability of the freezing operation was further threatened with the collapse of the Diana River char stock upon which the plant relied.

Through the rest of the decade, the Rankin plant operated with reduced resources, partially replacing the Diana River stock with sources close to Whale Cove, and further afield toward Arviat. The physical plant, a collection of rambling buildings pieced together from former plants in Daly Bay and in Whale Cove, received only the attention required to barely meet the standards of by the Department of Fisheries and Oceans

as a registered fish plant capable of producing a product capable of export beyond the NWT border.

As a result, at the end of the 1980's, the GNWT owns a plant in extremely poor condition composed of relics of the late 1960's.

Whale Cove recentered the fishery originally as a supplier of char to the Rankin Inlet plant after the collapse of the Diana River stock. The people of Whale Cove are enthusiastic fishermen, and kept the Rankin Inlet plant supplied with char during the mid 1980's. However, the community took the initiative to bypass the government plant in late 1980's and ship fresh char directly to Winnipeg to obtain a much better price than that offered by the Rankin plant. Arviat also pulled away from Rankin Inlet during this time.

Both Whale Cove and Arviat were shipping from facilities funded under the old Special ARDA program and designed as fresh fish receiving and packing stations. Technically, these facilities were not fish plants and did not have facilities to freeze fish under conditions which met with DFO standards. Because of weather and flight delays, fish often had to be frozen in the local community freezers and could not be shipped to Winnipeg, and the higher revenue which could be obtained as export quality fish was lost.

During this same period of time, the late 1980's, the GNWT was actively pursuing a privatization policy which directed government departments to turn over functions which were perceived as business opportunities over to the private sector. Among the opportunities identified was the Rankin Inlet fish plant, which had been operated under the GNWT "Enterprise" system. This same policy, as interpreted by Economic Development and Tourism, also assumed that sufficient private interest, skills and capital existed in the NWT to take advantage of business opportunities in the renewable resource and arts and crafts sectors.

However, this policy failed in the renewable resource field primarily because the high degree of risk encountered deterred most private entrepreneurs and reduced their ability to leverage debt capital. At the same time, the Keewatin fishery was experiencing difficulty in attracting suitable private interests in the Rankin Inlet and Whale Cove operations. In Arviat, a young local entrepreneur came forward, and with the support

of Economic Development and Tourism, established a fairly stable fishery over a four year period, culminating in a new federally certified freezing plant to replace the old packing station.

In hope of stream-lining and strengthening the Keewatin char fishing industry, Economic Development and Tourism prepared an action plan for development of the fishery. The action plan was based on a strategy developed on contract by consultants; several major recommendations were modified in developing the action plan. This plan called for the construction of three new plants in the Keewatin to replace the facilities in Rankin Inlet, Whale Cove and Arviat. A copy of the action plan is attached in the Appendix.

WHY THE DEVELOPMENT CORPORATION?

While the capital needs of the Keewatin fishery were relatively easy to identify, a mechanism to ensure stability in ownership and operation was not readily available until the creation of the NWT Development Corporation.

The opportunity presented in this proposal is suited to the Development Corporation's mandate to invest in potential growth areas which have been forestalled because of insufficient capacity in the private sector.

Despite several years of community development, suitable private sector interests have not been identified who have sufficient skills, commitment and stability to own and operate fish plants in either Rankin Inlet or Whale Cove. Without the involvement of the Development Corporation to invest in new plants, the export char fisheries in both communities will fold.

The following describes in broad strokes the existing development potential, and seeks approval in principle of the concept prior to preparation of a detailed business plan.

THE COMMUNITIES

Rankin Inlet

Rankin Inlet, capital of the Keewatin region, is located on the west coast of Hudson Bay at the head of Rankin Inlet. The community was established as a mining centre in 1955; the mine closed in 1962.

Demography

The current population is 1400,77% Inuit, 2% Dene/Metis, 21% Other. Children under 14 account for 3870 of the population; 60% of the population is between age of 15 and 64.

Economy

As regional administrative centre, Rankin Inlet has the most diverse business community and the best air connections in the region. Average household income is $37,858; this figure is skewed by the high incomes earned government employees, mostly non-Native. The average income for Inuit households in lower, around $26,000. The unemployment rate among Inuit in the community is estimated at 21%.

Infrastructure

A utilidor systems serves most of the community and the Hamlet provides trucked water service and sewage pump-out. Diesel generators provide 3,930 kw capacity electrical service.

The airstrip is currently being upgraded as part of the Northwarning System and can handle jet aircraft. Annual sealift from the Churchill railhead provides barge service 3 or 4 times during the open water season.

Housing

Housing availability is good in Rankin Inlet. Two apartment complexes exist, and the GNWT usually has vacancies among its government housing units.

Fish Resources

The community is distant from healthy char stocks; local stocks have been depleted and are closed to commercial fishing. In 1986 there were ten active commercial fishermen; the number of people participating in the subsistence fishery is much higher.

Whale Cove

Whale Cove is 80 air km south of Rankin Inlet, located on a peninsula at the head of Whale Cove on the west coast of Hudson Bay. The community was established in 1959 as a settlement for re-located inland Inuit who had survived the famines of 1957 and 1958.

Demography

With a population of 225, 94'% Inuit, Whale Cove is smallest community in the Keewatin. Forty per cent of the population are under 14 years old; 58% are between 14 and 64.

Economy

Renewable resources provide the major economic resource of the community. Average annual household income is about $24,000. The unemployment rate is about 35%. Construction provides limited cash income in summer, although most construction crews are imported into the community.

Infrastructure

A gravel airstrip is located 20 km from town; the strip is insufficient for jets or propeller plans larger than a DC-3 or equivalent. Trucked water and sewage pump-out are provided for the entire community by the hamlet. A 620 kw diesel generator provided electrical power.

Annual sealift from the Churchill railhead provides barge service once during the open water season.

Housing

Housing is in short supply. If a manager from outside the community is hired, consideration should be given to constructing a small residence unit along side the plant. Otherwise, the manager may have to stay at the local hotel, if it is open, or arrange to rent a room from a teacher or other GNWT employee who are often over accommodated.

Fish Resources

The community is close to abundant renewable resources, including char stocks and annual beluga whale migrations. Since wage employment opportunities are very few, this community relies heavily on animal and fish resources for subsistence. About 22 people solds fish to the local plant in the summer of 1989.

RESOURCE POTENTIAL

Historic harvests of arctic char landed in both communities are given in Table 1. Maximum potential landings for Rankin Inlet are limited to the quotas available from Corbett Inlet and Baker Foreland, a combined potential of 17,454 pounds (dressed weight). With sufficient motivation of the fishermen, both quotas have been fully harvested in the past. Motivation is not necessarily financial; organization and encouragement are major determining factors.

Whale Cove has historically captured most of the quotas within reach by motor-powered canoe. The harvest level vanes with access to the Ferguson River quota, the largest single char quota in the Keewatin region. Two factors affect the ability of Whale Cove fishermen to harvest the Ferguson quota: availability of a freighting system, and harvest by Arviat fishermen.

Since the majority of Whale Cove fishermen fish from 22-foot freighter canoes, their ability to fish the Ferguson quota is limited by freighting arrangements they can make with fishermen with larger boats. Quota available to Whale Cove fishermen on the Ferguson is limited by competition from Arviat fishermen. In 1990, most of the quota was taken by" a fisherman who sold his catch to the Arviat plant by virtue of a chartered float plane.

In terms of resource potential, two options have been used to estimate the harvest by Whale Cover fishermen:

1) historical catch plus half the Ferguson River quota, for a total harvest of 31,372 pounds

2) complete harvest of all quotas which Whale Cove fishermen have fished plus half the Ferguson River quota, for a total harvest of 54,000 pounds.

MARKETS

The market for whole char is facing competition from aquiculture product from southern Canada. However, the southern market remains stable; the Freshwater Fish Marketing Corporation (FFMC), a crown corporation, has legislated monopoly purchasing rights on all char exported beyond the NWT border. The majority of the commercial catch exported from the Keewatin is in the 4-7 pound category; it is uneconomical to grow cultured char to this size, and the therefore the market for wild char in this size should remain secure.

The FFMC offers a better price for char than can be obtained in NWT markets, and will purchase the entire production as it is produced. The NWT market generally requires deliveries staggered over the year, requiring the plant to store the product frozen and incur very high utility costs.

The FFMC offers a premium price for char delivered unfrozen, $4.25/lb; frozen product brings a lower price at $3.25/lb.

The FFMC is not interested in marketing char in value-added form. Over the last year, the GNWT has been test marketing smoked tamed arctic char to determine if sufficient markets exist to support establishment of a northern cannery.

The test market has demonstrated a limited market among tourists visiting northern Canada, and as a gift item. While these markets cannot support the establishment of a northern operation, a northern char plant could profitably contract smoking and canning to a southern custom canner. The most significant impediment is the fact that the char must be purchased, processed and boxed in a very short period, and sold over the rest of the year. Most northern char plants do not have sufficient working capital to cover these expenses incurred in such a short period.

However, the custom canning operation is an ideal opportunity for the Development Corporation. With the sunk costs of product and package development already absorbed by the GNWT, the project is ready for transfer into a private sector operation.

Test market efforts indicate a potential for 30,000 cans annually in the northern tourist and gift markets. The cost of custom canning, including purchase of char from the FFMC, box and label manufacture, is about $5.00/can; the cans are sold at a wholesale price of $5.80 per unit. If the Development Corporation uses char from its own plant operations, the cost of fish, a major cost in the GNWT's custom canning project, will be considerably reduced and profit margins further increased.

Economic Development and Tourism will continue to pursue research into other product forms with the ultimate aim of identifying financially viable opportunities for private sector investment.

CAPITAL PLAN

The capital plan consists of the construction of two new fish plants with capability to export both fresh and frozen arctic char. A modular design similar to the new fish plant in Arviat is proposed. The modular design allows for future expansion to accommodate development of value-added products. The plants will be designed to accommodate maximum daily deliveries of arctic char and the capacity to freeze this product.

The size and design of both plants will be identical, approximately 14 feet wide by 55 feet long. Based on the landed cost of the Arviat plant, the capital cost of each plant is estimated at $190,000.

A critical path for capital planning and construction is presented later.

OPERATIONAL PLAN

The operational plan is intended to realize three primary objectives:

1. reduce costs of operations;

2. vary the product mix in order to realize maximum returns for least cost;

3. provide a fair return to fishermen.

Product Mix

The product mix is driven by the need to reduce overhead costs by moving product out of the freezers as soon as possible, and concentrate on producing the most profitable products in marketable quantities. To this end, the following product mix is optimal:

1. maximize export of fresh unfrozen char to the FFMC;

2. freeze product sufficient to provide the market requirements for custom smoked and canned arctic char (30,000 cans in the first year);

3. sell the remainder of catch frozen to the FFMC.

Value added products should not be pursued until financial and operational stability of the proposed plants are assured. The product mix proposed above is the simplest acheivable option. Value added processing should be considered for the Rankin Inlet operation once the fisheries are producing consistently and efficiently.

"Operations

Operating Season

An annual operating season of eight weeks is anticipated. While char can be harvested in early July, depending on ice out, the 'plant openings and closings should coincide with beginning and end of the peak char runs, usually a four week period in early August to early September. Volumes outside of this period are too low to cover plant operational expenses. Two weeks on either side of this season allow for plant start-up and shut-down.

Operation of these plants in winter till incur significant costs. The winter fishery is low volume; char which is harvested in winter can be frozen on the lakes and can exported without going through the plants. This option has been pursued by the communities of Igloolik and Repulse Bay resulting in winter fisheries with very low operational costs; this strategy should be considered for Whale Cove and Rankin Inlet.

Fishing Operations

Char fishing in the Keewatin is essentially a subsistence activity where the commercial catch provides the cash requirements. Consistent with most small scale fisheries, the bulk of the catch is harvested by relatively few fishermen with larger outfits and more equipment. In Whale Cove, most of the adult community participates to a limited degree by fishing quotas very close to the community, delivering fish daily to the plant.

In Rankin Inlet, the nearest commercial char quotas are too distant to make commer- ' cial fishing effort worthwhile for most of the community. Commercial harvest is generally limited to relatively few fishermen with vessels large enough to handle rough weather over a long distance.

Commercial char harvests in both communities require pre-season organization to realize maximum potential. In particular, a regular freighting system must be established to maximize the time fishermen fish at outlying char quotas. Without organization, too much time is spent by individual outfits traveling back and forth with partial loads.

Plant Operations

Fresh char delivered to the plant is either frozen or shipped fresh to Winnipeg, if air connections can be made which will ensure that the fish will not spoil en route.

Both plants will be capable of freezing maximum anticipated daily deliveries. To reduce operating expenses, the plants will be designed with limited frozen storage space, requiring constant flow through of product during the operating season.

Utility costs, the costs of operating freezers and the ice machines, are the most significant costs of operations. To avoid duplication of effort, the Whale Cove plant will ship as much fresh fish as possible to Rankin Inlet, and only freeze fish in emergencies to avoid spoilage.

Plant Management

In a fishery with such a short season, competent management is critical. Management mistakes often cannot be detected until after the season closes, at which time it is too late to implement rememdial measures. Lack of consistent, good management has been a major stumbling block in the development of the Keewatin fishery.

An attractive salary is proposed for the management positions in both plants. For both positions, ten thousand dollars for two months is considered a minimum level required to squire good management. A high monthly salary is necessary because the plants can

offer only seasonal employment. Lack of income security must be compensated with a monthly salary larger than normally offered for a full time position.

Custom Canning

Custom canning entails three basic operations:

1) delivery, smoking and canning the fish,

2) box and label printing and assembly, and

3) storage and distribution of the final product.

The process takes six weeks from time of delivery of the fish to the tamer. Included in this period is time for Fisheries and Oceans inspections after canning, and again after labelling.

Annual Income Statements

Preliminary projected annual income statements have been constructed for the plant operations (Table 2). These statements are based on research conducted by Goldenberg and Associates for the development of business plans for several Keewatin fishing operations. Recommendations from this report have been modified in several areas; the most important departures from the consultant's recommendations are minimizing the freezing operations at Whale Cove, and reserving a portion of the catch for custom canning. The consultant's report is available from Economic Development and Tourism upon request.

These statements are projected using two productions levels:

A: assumes that Whale Cove will harvest at historical levels plus capture half the Ferguson River quota, for a total hamestof31,372 pounds, and Rankin Inlet fishermen will capture the full quotas available, 17,454 pounds

B: assumes complete harvest of all quotas which Whale Cove fishermen have historically fished plus half the Ferguson River quota, for a total harvest of 54,000 pounds, and Rankin Inlet fishermen will capture the full quotas available, 17,454 pounds

Scenario B assumes organizational effort applied by the plant manager will result in . maximum catch volumes (limited by quota). Scenario A assumes that no organizational effort is made.

At both harvest levels, a positive return on investment is generated, 5 % and 8% for production scenarios A and B respectively.

Price to fishermen in both communities is $1.75/pound; this price is considered a fair return on effort and should motivate production at projected levels.

BENEFITS OF INVESTMENT

Direct wages and salaries into the communities are projected between $96,000 and $142,000 for a four week operating season. This cash income will be spread among approximately 22 fishermen in Whale Cove and 8 fishermen in Rankin Inlet, and 8 plant workers in both communities.

The investment will ensure that Inuit fishermen will continue to enjoy the opportunity to receive cash returns on skills which they currently possess in an economy where opportunities are very limited for cash returns on traditional skills.

The prospects for business success are excellent given good management and plant capacity appropriate for the volume of catch delivered. A positive return on investment is projected from the first year of operation. No operational subsidies are projected.

Investment will allow the Corporation access to fish stocks for the development of value added products. The benefits of value added processing can be immediately enjoyed as increased revenues through pursuit of contract custom canning and smoking. Plant capacity can be expanded in the future to accommodate value added processing in the NWT if justified by market conditions.

CRITICAL PATH

	1991/92			
	Spring	Summer	Fall	Winter
1. Approval in Principle:	*			
2. Development of Plant Specifications	**			
3. Plant Design and Working Drawings	***			
4. Site Identification	****			
- Municipal and Community Affairs				
- Public Works				
- NCPC				
- Hamlet of Whale Cove				
- Whale Cove Hunters and Trappers Association				
- Hamlet of Rankin Inlet				
- Rankin Inlet Hunters and Trappers Association				
5. Tender Construction		***		
6. Submission of Full Business Plan to Development Corporation			*	
7. Construction				******
8. Transport	Spring 1992			
9. Installation, Hook-up	Summer 1992			

APPENDIX

- Table 1 Historical Production
- Map of Major Char Systems Near Whale Cove and Rankin Inlet
- Table 2 Projected Annual Income Statements
- Notes to Income Statements
- Plant Floor Plans

Table 1

HISTORICAL PRODUCTION

Whale Cove Fishery

System	Quota (lbs)	Production Top Year
Copperneedle River	8633	3779
Ferguson River	26085	21888
Mistake Bay	4411	761
Pistol Bay	4411	871
Wallace River	4.411	807
Wilson Bay	19180	14266
Total	67131	42372

Average Annual Product ion 1980-1989: 20792

Top Annual Production 1980-1989: 41344

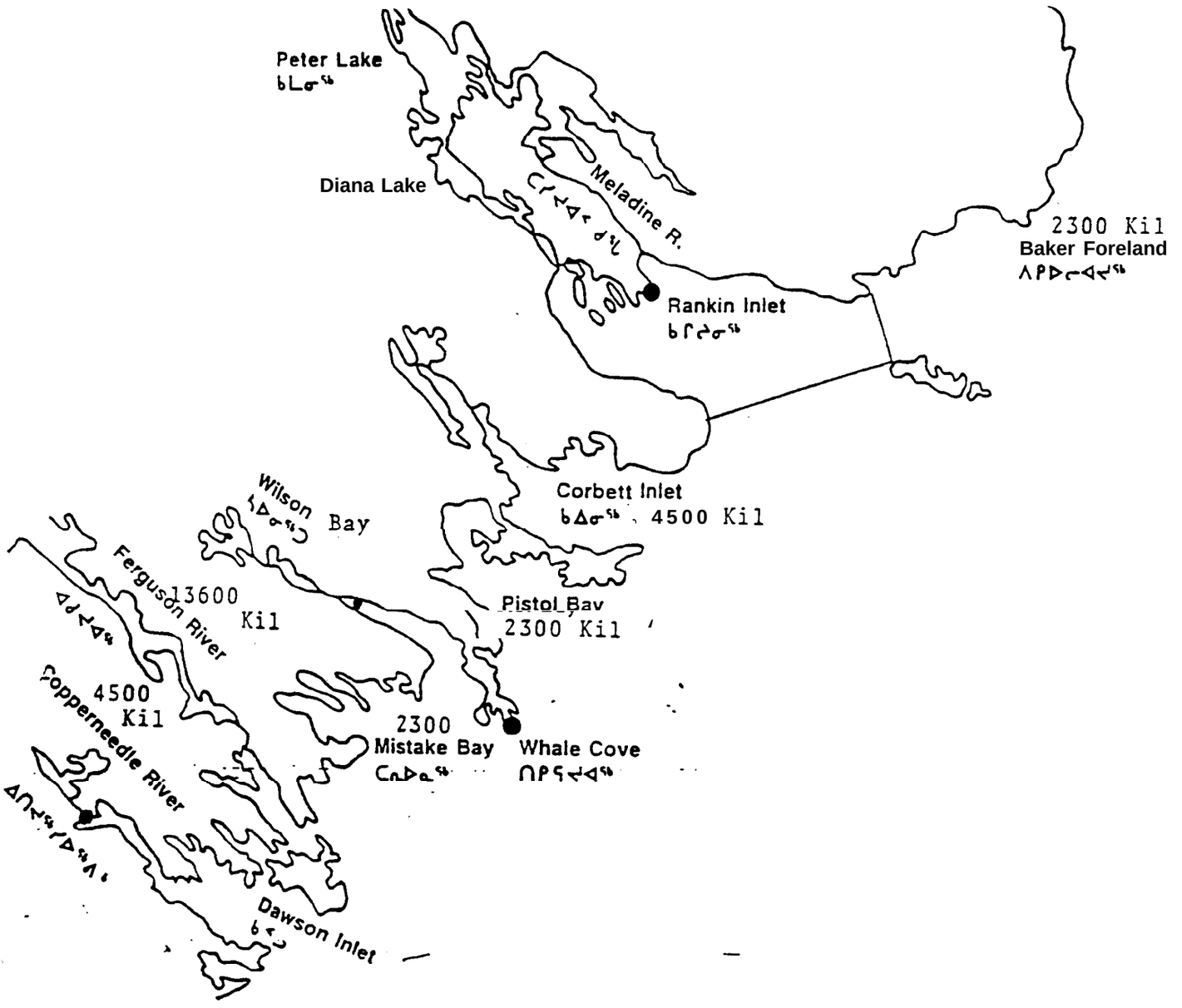
Rankin Inlet Fishery

System	Quota (lbs)	Production Top Year
Baker Foreland	8823	9057
Corbett Inlet	8631	10434
Total	17454	19491

● Average Annual Production 1985-1989: 10883

Top Annual Production 1985-1989: 19491

● Production averaged over years after closure of Diana River char stock to commercial fishing



, Keewatin Major River Systems

Rankin Inlet/Whale Cove Areas

Table 2

NUT DEVELOPMENT CORPORAT ION: KEEWAT 1 N FISHING OPERATIONS
Projected Annua l Income Statements at Two Production Levels

Char Production (lbs)	A		B	
Rankin In let	17454		17454	
Whale Cove	31372		54000	
Total	48826		71454	
Fish Sales:	$	.BS	$	LBS
Fresh	$122,511	?8826	$127,500	30000
Frozen	so	0	$69,726	21454
Canned	$174,000	?0000	$174,000	20000
Total	S296,511		S371 ,226	
Variable Costs				
Fish Purchases	$85,446		$125,045	
Shipping Costs:				
Fresh	$30,240		$30,240	
Frozen	$0		$20,160	
Canned	$14,700		$14,700	
Labour				
Fresh	$4,500		$4,500	
Frozen	$0		$6,436	
Canned	$6,000		$6,000	
Custom Canning				
Smoking/ Canning	$45,000		$45,000	
Packaging	S25 ,500		$25,500	
Labelling	S6,000		$6,000	
Total Variable costs:	$217,386		S283,581	
Fixed Costs:				
Heat/Power				
Rankin Inlet	$4,500		$6,000	
Whale Cove	$(4,000		$6,000	
Repairs and Maintenance				
Rankin Inlet	$3,500		$3,500	
Whale Cove	$3,500		$3,500	
Salary, Manager				
Rankin Inlet	$10,000		$10,000	
Whale Cove	$10,000		$10,000	
Start-up, Close-down				
Rankin Inlet	$1,000		$1,000	
Whale Cove	$1,000		$1,000	
Truck (Whale Cove)	$2,000		$2,000	
Insurance				
Rankin In Let	$2,500		$2,500	
Whale Cove	S2,500		$2,500	
Office/Telephone				
Rankin Inlet	$2,000		$2,000	
Whale Cove	$2,000		$2,000	
Depreciation				
Rankin Inlet	$11,000		$11,000	
Whale Cove	$11,000		$11,000	
Total Fixed Costs:	$70,500		$72,000	
Total Costs:	$287,886		$355,581	
Net Revenue:	$8,625		$15,645	
Internal Rate of Return:	0.05		0.08	

NOTES TO INCOME STATEMENTS

1. Two production levels are used:

A- assumes quotas accessible to Rankin Inlet fishermen are fully captured, and quotas accessible to Whale Cove are harvested at historical average levels, plus half the Ferguson River quota

B - assumes quotas accessible to Rankin Inlet fishermen are fully captured, and quotas accessible to Whale Cove are fully harvested, plus half the Ferguson River quota

2. Fish Sales:

Fresh - sold to the Freshwater Fish Marketing Corporation for $4.25/lb

Frozen - sold to the Freshwater Fish Marketing Corporation for $3.25/lb

Canned - sold for a unit price of $5.80/can, with 20,000 pounds producing 30,000200 gram cans

3. Fish Purchases: $1.75 paid out to all fishermen

4. Shipping Costs: based on shipment of fresh fish from Whale Cove to Rankin Inlet via Calm Air, fresh and frozen deliveries to Winnipeg via NWT Air, and delivery by truck of frozen fish to canner in B.C.

5. Labour Costs: $0.15/pound for fresh fish, $0.30 for processing frozen fish

6. Custom Canning: canning and smoking operations contracted out to a custom canner in British Columbia; box and label manufacture and application contracted outside of the NWT.

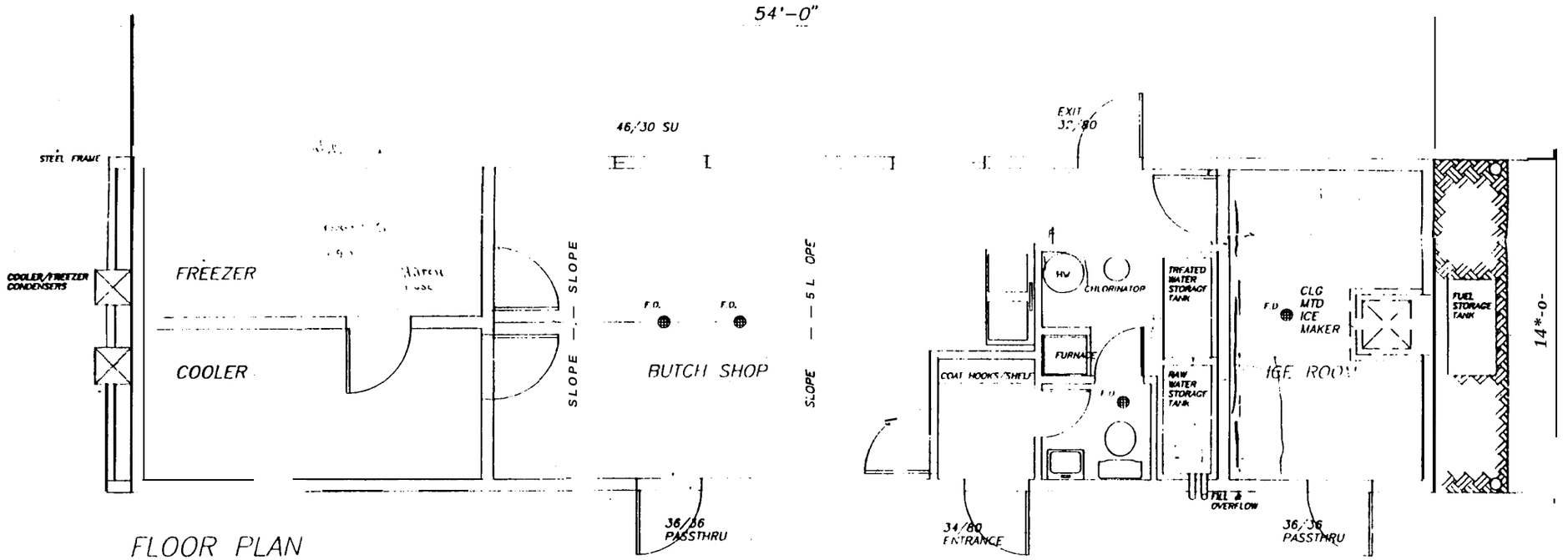
7. Heat and Power: costs are higher in Rankin Inlet because of longer storage periods and processing of frozen fish resulting in greater use of freezers

8. Repairs and Maintenance: estimated at rate of $350/day for ten days at each plant

9. Start-up, Close-down: estimated cost of servicing refrigeration equipment at beginning and end of season

10. Manager's Salary: Salary for two months for managers at both plants

11. Truck: Whale Cove: cost of truck operation, Whale Cove; truck used to transport fish 12 miles to the airport



FLOOR PLAN

CEILING HEIGHT 9'-0 1/4"

Revision	By	Approved		Approved by Engineer	Title
			Confidential Permission required to reproduce		14' 54' FISH PLANT

KEEWATIN FISHERIES STRATEGY
ACTION PLAN

CAPITAL **PROGRAM**

Action:

Build a portable fish/meat plant for Arviat

Time-frame: **Spring/summer** 1990

Critical Path: **1. Construction** in May 1990
2. Delivery **to** Churchill **in** June
3. Delivery **to Arviat in late** July by barge
4. Oversee installation, start-up

Action:

Build a portable fish/meat plant for Whale Cove

Time-frame: **Fall/Spring/Winter 1990/91**

Critical Path: **1. Proposal complete in Fall 1990**
2. Construction in Winter 1990
3. Delivery to Churchill in July
4. Delivery to Whale Cove in July 1991 by barge
5. Oversee installation, start-up

Action:

Build a portable fish/meat plant for Rankin Inlet

Time-frame: **Winter 1990/91**

Critical Path: **1. Proposal complete in September 1990**
2. Construction complete by March 31 1990
3. Delivery by barge to Rankin Inlet in July 1991
4. Oversee installation, start-up

Action:

Construct ice houses at Ferguson River, Corbett Inlet, Stoney Point

Time- frame: Early Fall, 1990 (Ferguson River)
1991 (Corbett Inlet)
1991 (Stoney Point)

Critical Path: 1. Contribution requests from region for local HTA's
2. Tents and framing ordered
3. Tents delivered, constructed on site

Action:

Introduction of 13 yawls into the fishery

Time-frame: On going, 1990/91 - 92/93

Critical Path: 1. Identify fishermen with good production and required equity
2. Prepare business plan, funding proposals

Action:

Introduction of insulated fish tubs into the fishery, 20 each year for three years; tubs will be distributed as required to fishermen

Time-frame: 1990/91, 1991/92, 1992/93

Critical Path: 1. Order through Government Services

SPECIAL PROJECTS AND OPERATIONS

Action:

Encourage deployment of Tony Eecherk's weir on the Copperneedle River to harvest a greater proportion of the quota (65% of the quota was not harvested last year)

Time-frame: June, July, August 1990

Critical Path:
1. Hire weir technician project officer (see Human Resources)
2. Pick up weir at the Ferguson River (early - mid July)
3. Transport to Copperneedle River
4. Install
5. Harvest operations

RESEARCH ACTIVITIES

Action:

Pre-feasibility analysis of export whitefish production in the Keewatin.

Time-frame: complete by September 28, 1990

Critical Path:
1. Market research
2. Analysis of logistics
3. Break-even analysis

Action:

Winter char fishery, site identification

Time-frame: summer 1990: site identification, operational plan
fall, winter 1990: funding, implement fishery

Critical Path:
1. Community consultation to identify potential locations
2. Develop operational plan and funding proposal
3. Carry out fishery

Action:

The Barbour Bay area has 17,000 kg of quota which has never been fished commercially because of its distant location from the plant in Chesterfield Inlet. Pre-feasibility analysis of an aircraft supported fishery in this area is required.

Time-frame: July, August 1990

Action:

Turbot fishery pre-feasibility program, Coral Harbour

Time-frame: **winter 1990/91**

Critical Path:
1. Identify proponent
2. Contribution request, funding proposal drafted
3. Project approval
4. Equipment purchase
5. Carry out project

Action:

Inshore marine exploratory fishing

Time-frame: **summer** 1991, 1992, 1993

Critical Path:
1. Draft summer research program (winter 1990/91)
2. Identify gear required (e.g. crab and shrimp pots, trawls, dragging gear)
3. Identify existing vessel in the region which can be outfitted with required gear, or identify vessel outside region
4. Draft funding proposal
5. Equipment purchase, installation
6. Contract project officer
7. Carry out research program

Action:

Char stock assessment and harvesting plan

Time-f rame: **summer, fall, winter 1990**

Critical Path:
1. **Identify rivers with potential stocks not currently accessed**
2. **Identify rivers currently under-utilized**
3. **Establish a pulse-fishing schedule for isolated river systems**
4. **Draft a five-year harvesting plan in consultation with the producer's corporation**

Action:

Feasibility analysis, deploy weir at Stoney Point

Time-frame: **summer 1990**

Action:

Test fisheries for char at several locations on Southampton Island .

Time-frame: **winter 1990/91, 1991/92, 1992/93**

EDUCATION

Action:

Develop a training plan for the industry

Time-frame: **fall/winter 1990**

Critical Path:
1. **Define critical training** needs **in** all aspects of the industry
2. **Work with Arctic** College and **Education** to develop **training** programs and workshops **which will** address the **identified** needs
3. Identify funding to implement the training programs

HUMAN RESOURCES

Action:

Hire a fisheries project officer to coordinate field activities

Time-frame: Immediately

Critical Path:
1. Contract engagement for summer 1990
2. Term position identified in 1990/91 Opplan
3. Term hire for 1991/92

Action:

Contract a weir manager to coordinate installation of two aluminum conduit weirs in the Copperneedle River, and another location

Time-frame: Immediately

Critical Path:
1. Terms of reference drafted in region
2. Contract engagement for summer 1990

Action:

Work with Chesterfield Inlet Fishermen's Association board of directors to devise a viable operational plan; monitor the operation throughout the summer

Time-frame: Spring/Summer 1990

Action:

Work with Repulse Bay ETA to expand the winter char fishery

Time-frame: Winter, 1990

Action:

Work with the owner\ operator of the aluminum freezer/packer vessel to ascertain the extent to refrigeration problems and rectify.

Time-frame: Spring, 1990