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APPRAISAL
OF THE
TECHNO - ECONOMIC FEASIBILITY STUDY ON
FISH PROCESSING IN BARBADOS

US/BAR/85/152

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Terminal Report*

Prepared for the United Nations
Industrial Development Organization

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1. BACKGROUND

The Barbados Development Bank has requested the UNIDO to assist in the preparation of a study on the establishment of a seafood processing plant.

The UNIDO Computer Model for Feasibility Analysis and Reporting (COMFAR) was applied to appraise the financial and economic viability of the proposed plant.

2. THE PROJECT

The proposed seafood plant aims at processing at least 672mt/yr of fresh fish into frozen fillets and steaks, primarily for the domestic market. The products are planned to be sold mainly during the off-season (August-December), when fresh fish is not available in sufficient quantities.

The plant is designed in a flexible way, allowing one or two shift operation. Flying Fish is the target species, but also other species e.g. Dolphin and Swordfish may be processed.

Due to seasonal characteristics, the plant may operate for seven months per year only. Production at full capacity could be achieved one year after commencement of the construction works.

3. THE SCENARIOS

Depending on the availability of fresh fish supply, three basic scenarios are considered :

SCENARIO A : One shift operation. 672mt/yr of flying fish are processed into 224 tons of frozen fillets.

SCENARIO B : In addition to Scenario A 384mt/yr of other species are processed in a second shift.

SCENARIO C : 336mt/yr of flying fish and 672mt/yr of other fish are processed in two shifts.

4. FINANCIAL APPRAISAL

The financial appraisal is based on COMFAR computations. The Cash Flow Tables and the Net Income Statement of the COMFAR models are given in ANNEX 1 and 2 for Scenario A, in ANNEX 3 and 4 for Scenario B and in ANNEX 5 and 6 for Scenario C.

4.1 BASIC DATA

- (a) The initial investment requirements are BDS\$ 2,578,000 mainly for processing equipment and construction works.
- (b) Infrastructure and land is provided by the Government.
- (c) Requirements for working capital depend on the type of processed species and are estimated to be 50% of the annual quantities. The total requirements, including cash, is in 000 BDS\$:
 - Scenario A : 1,017
 - Scenario B : 3,144
 - Scenario C : 4,305
- (d) Material costs are \$1.40 for flying fish and \$6.90 for other species, with sales prices of \$14.50/kg and \$9.50.
- (e) The total investment is loan financed . The interest rate is 13%.

4.2 FINANCIAL ANALYSIS

The conservative assumptions of loan financing with comparatively high interest rates promise a high degree of validity of the interpretations.

As shown in ANNEX 1 and ANNEX 3 the Scenarios a and B have cash surpluses, sufficient to meet annual interest payments and the repayment of the principal. The cash surpluses are considerable, representing a high degree of liquidity security.

Scenario C (ANNEX 5) has cash deficits in each year. The Net Cash Flow is too small to cover financial obligations.

4.3 INVESTMENT PROFITABILITY

The return on the total investment (IRR) and the net present value (NPV) at 13% discounting rate are :

	IRR	NPV
-----	-----	-----
Scenario A :	29.6	3474
Scenario B :	22.9	2970
Scenario C :	8.1	-1750

The IRR and the NPV of Scenario A and B indicate a high profitability on the invested capital. These findings are in line with high annual net profits, as shown in ANNEX 2 and 4.

The IRR of Scenario C is with 8.1% lower than the assumed opportunity costs of capital (13%), thus causing a negative NPV and losses during the first 10 years of production(see ANNEX 6). Hence, Scenario C is under the given assumptions financially not feasible.

4.4 RISK ANALYSIS

(1) Break Even Analysis

In ANNEX 7 and 8 break even charts are shown for Scenario A without and with costs of finance. The corresponding charts for Scenario B are given in ANNEX 9 and 10.

The break even points are without costs of finance below 55%, which represents a high degree of security. If costs of finance are included, then sales equal total costs at 80% and 85% capacity utilization. These figures may be interpreted as acceptable, considering the conservative financing assumptions.

(2) Sensitivity Analysis

The results of the sensitivity analysis are shown in ANNEX 11 for Scenario A and in ANNEX 12 for Scenario B.

The charts show clearly, the variations of major parameters, e.g. sales prices and operational costs, do not question the financial profitability.

(3) Simulation of the product mix

Flying fish, the major product, has a considerably higher margin of selling price over material costs, than other species have (in 000 BDS\$) :

SPECIES	MATERIAL COSTS per mt/product	SALES PRICES per mt	MATERIAL COSTS as % of sales
FLYING F.:	4.2	14.514.5	29
OTHER F.:	6.9	99.0	77

Above figures explain why Scenario C is not attractive, as it assumes the processing of 672mt/yr of other species and only 336mt/yr of flying fish. In this connection two interesting questions arise :

Firstly, at which minimum level of processed flying fish in a one shift operation becomes the plant financially unattractive, and secondly, what quantities of which species determine the break even level in a two shift operation.

Simulations with COMFAR show that in a one shift operation the minimum quantity of processed flying fish may be as low as 200 mt/yr. Below this quantity the IRR would drop below 13%.

With respect to a two shift operation the minimum quantity of processed flying fish per year is about 600 tons, if 672mt of other species are processed.

4.5 ENTREPRENEUR'S PROFITABILITY

The basic Scenarios assume that the total investment is financed by loans. If an investor would finance parts of the investment with equity, then the return on the paid in equity would be extremely high.

If, for example, an investor provides BDS\$ 1.1mil, which is about 40% of the initial investment, then the return on the BDS\$ 1.1mil. would be 45% for Scenario A and 43% for Scenario B.

The return on equity would be accordingly higher with a decreasing proportion of equity financed investment and lower with an increasing proportion of equity financed investment.

4.6 LEASING THE PLANT FOR VEGETABLE PROCESSING

During the off-season the plant could be leased for four months for vegetable processing and freezing, thus possible increasing the overall profitability of the plant.

As the fish processing does neither technically nor financially depend on the potential vegetable leasing, this aspect may be evaluated separately. There is no need to integrate the leasing component into one of the basic Scenarios. This would only complicate the evaluation.

A total additional investment of BDS\$ 682,000 would be required, with additional annual expenses of approximately BDS\$ 52,000. For the evaluation loan financing with 13% interest charges is assumed.

Calculations show, that annual leasing incomes of BDS\$ 272,000, 200,000 and 180,000 correspond with returns on the additional investment of 30%, 16% and 12%.

These results may be interpreted as follows : If the vegetable processing is regarded as an independent investment, then it may be regarded as attractive - comparing with 13% opportunity costs of capital - if annual leasing incomes would exceed BDS\$ 180,000. If, however, the vegetable processing would have to increase the overall profitability of the plant, then the annual leasing incomes would have to exceed BDS\$ 272,000 for Scenario A and BDS\$ 240,000 for Scenario B.

5. ECONOMIC ASPECTS

5.1 IMPACTS ON THE SUPPLY

The demand for fresh fish is according to the study fairly inelastic. The proposed plant would require a minimum of 672 mt/yr of fresh fish. Although it is not clear to which extent day-boats could increase their fishing capacity, it is likely that the additional demand would cause an increase of fresh fish prices.

The price increase would - at least in the short term - lead to an increased utilization of fishing capacities. The major beneficiaries would be the ice boat fishing sector, which has idle capacities.

5.2 IMPACTS ON THE FOREIGN EXCHANGE BALANCE

The data provided by the report is not sufficient to quantify the impact of the proposed plant on the foreign exchange balance. It is not clear whether the foreign components of the investment will be outweighed by import substitutions and potential exports.

However, it is likely, that the plant would be rather a net producer than a net consumer of foreign exchange. Much depends on future activities.

6. SUMMARY AND CONCLUSIONS

The proposed fish processing plant is financially highly attractive for the processing of flying fish or the processing of flying fish and other species in a two shift operation. Even under conservative financial assumptions the plant would generate sufficient surplus to meet its obligations with a return on the total invested capital of around 30%. In addition, the plant would be rather insensitive towards increased investment costs, higher material costs or lower revenues.

Due to differences with respect to material costs and sales prices the processing of flying fish is more profitable, than the processing of other species. If only flying fish is processed, then as little as 200 tons per year of processed flying fish would lead to acceptable results. In a two shift operation at least 600 mt/yr of flying fish would have to be processed to make the plant financially feasible.

The plant is an attractive investment opportunity. The rate of return on the paid in equity would exceed 40%, if BDS\$ 1.1mil. of equity are provided.

Besides other positive impacts on the economy, e.g. job creation and an increase of the income level, the plant is likely to induce a substantial improvement of the economic situation of the ice boat fishing sector.

The proposed plant has a potential of approximately BDS\$ 4.6 mil. per year in foreign exchange earnings and savings. Whether this potential would be realized would first of all depend on future marketing activities.

Considering the financial and economic findings, two crucial conditions are likely to determine the proposed plant's future feasibility :

- (1) A sufficient marine resource of flying fish.
- (2) A successful marketing of the new products.

No reliable data is available to assess the first condition. However, the relatively low break even quantity of 200 tons of flying fish per year indicates a small risk. In addition, a marine resource study, as suggested in the study, could be essential for for the future economic utilization.

Concerning the marketing of the products a more detailed study for both, the domestic and the export market is required. It should include a strategy on how to overcome consumer resistance towards frozen products and development strategies of export markets.

All suggested activities could be initiated simultaneously with the plant's construction.



COMFAR 2.0 - UNIDO IO/FEAS, Vienna

Cashflow tables, production in 000 BDS\$

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Total cash inflow	1970.54	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10
Financial resources	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sales, net of tax	1270.54	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10
Total cash outflow	1957.00	3132.29	2022.64	2022.64	2070.64	2022.64	2022.64	2022.64	2022.64	3954.64	2022.64	2105.00	2105.00	2105.00	2105.00
Total assets	674.17	309.65	0.00	0.00	48.00	0.00	0.00	0.00	0.00	1132.00	0.00	0.00	0.00	0.00	0.00
Operating costs	874.66	2105.00	2105.00	2105.00	2105.00	2105.00	2105.00	2105.00	2105.00	2105.00	2105.00	2105.00	2105.00	2105.00	2105.00
Cost of finance	404.30	449.00	425.38	397.79	366.61	331.37	291.56	246.56	195.72	138.27	73.36	0.00	0.00	0.00	0.00
Depreciation	0.00	107.84	212.76	239.86	271.04	306.27	346.09	391.08	441.92	499.37	564.29	0.00	0.00	0.00	0.00
Corporate tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dividends paid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surplus (deficit)	13.44	259.81	565.46	565.46	517.46	565.46	565.46	565.46	565.46	-366.54	565.46	1203.10	1203.10	1203.10	1203.10
Accumulated cash balance	16.06	271.87	817.33	1402.79	1920.25	2485.71	3051.16	3616.62	4182.08	3615.54	4181.00	5304.10	6507.20	7790.30	8993.40
Cashflow, local	1270.54	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10	3300.10
Cashflow, foreign	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surplus (deficit)	-207.24	893.45	1203.10	1203.10	1203.10	1203.10	1203.10	1203.10	1203.10	1203.10	1203.10	1203.10	1203.10	1203.10	1203.10
Net cashflow	-207.24	893.45	1203.10	1203.10	1155.10	1203.10	1203.10	1203.10	1203.10	71.10	1203.10	1203.10	1203.10	1203.10	1203.10
Accumulated net cashflow	-206.24	-196.79	-743.69	439.41	1594.51	2797.61	4000.71	5203.81	6406.92	6478.02	7681.12	8884.21	10087.31	11290.41	12493.51

FISH PROCESSING BARBADOS - CENARIO A --- 22 SEPTEMBER 1986

COMFAR 2.0 - UNIDO IO/FEAS, Vienna

Cashflow Discounting:

a) Equity paid versus Net income flow:		
Net present value	3899.66	at 13.00 %
Internal Rate of Return (IRR1)	.. not found	
b) Net Worth versus Net cash return:		
Net present value	3252.17	at 13.00 %
Internal Rate of Return (IRR2)	.. not found	
c) Internal Rate of Return on total investment:		
Net present value	3474.43	at 13.00 %
Internal Rate of Return (IRR)	.. 29.57 %	
Net Worth = Equity paid plus reserves		

FISH PROCESSING BARBADOS - CENARIO A --- 22 SEPTEMBER 1986



COMFAR
2.0
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COMFAR 2.0 - UN100 10/FEAS, Vienna

Net Income Statement in 000 0951

Year	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Total sales, incl. sales tax	1270.54	3388.10	3388.10	3388.10	3388.10	3398.10	3388.10	3388.10	3388.10	3388.10	3386.10	3388.10	3388.10	3388.10
Less: variable costs, incl. sales tax	785.01	2093.35	2093.35	2093.35	2093.35	2093.35	2093.35	2093.35	2093.35	2093.35	2093.35	2093.35	2093.35	2093.35
Variable margin As % of total sales	485.53 38.21	1294.75 38.21	1294.75 38.21	1294.75 38.21	1294.75 38.21	1294.75 38.21	1294.75 38.21	1294.75 38.21	1294.75 38.21	1294.75 38.21	1294.75 38.21	1294.75 38.21	1294.75 38.21	1294.75 38.21
Non-variable costs, incl. depreciation	780.33	780.33	780.33	780.33	780.33	780.33	780.33	780.33	780.33	780.33	780.33	780.33	780.33	780.33
Operational margin As % of total sales	205.18 16.15	1014.40 29.94	1014.40 29.94	1014.40 29.94	1014.40 29.94	1014.40 29.94	1014.40 29.94	1014.40 29.94	1014.40 29.94	1014.40 29.94	1014.40 29.94	1014.40 29.94	1014.40 29.94	1014.40 29.94
Cost of finance	404.30	449.80	425.38	397.79	366.61	331.37	291.56	246.56	195.72	138.27	75.36	0.00	0.00	0.00
Gross profit	-199.12	564.60	589.02	616.61	647.79	683.03	722.84	767.84	818.68	876.13	941.04	1014.40	1014.40	1014.40
Allowances	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Taxable profit	-199.12	564.60	589.02	616.61	647.79	683.03	722.84	767.84	818.68	876.13	941.04	1014.40	1014.40	1014.40
Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net profit	-199.12	564.60	589.02	616.61	647.79	683.03	722.84	767.84	818.68	876.13	941.04	1014.40	1014.40	1014.40
Dividends paid	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Undistributed profit	199.12	564.60	589.02	616.61	647.79	683.03	722.84	767.84	818.68	876.13	941.04	1014.40	1014.40	1014.40
Accumulated undistributed profit	-199.12	365.48	954.50	1571.12	2218.91	2901.94	3624.79	4392.62	5211.30	6087.42	7028.47	8042.87	9057.27	10071.67
Gross profit, % of total sales	-15.67	16.66	17.38	18.20	19.12	20.16	21.33	22.66	24.16	25.86	27.77	29.94	29.94	29.94
Net profit, % of total sales	-15.67	16.66	17.38	18.20	19.12	20.16	21.33	22.66	24.16	25.86	27.77	29.94	29.94	29.94
ROI, Net profit, % of equity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.00	0.00
ROI, Net profit-interest, % of invest.	6.31	29.46	28.44	28.44	28.09	28.09	28.09	28.09	28.09	21.38	21.38	21.38	21.38	21.38

FISH PROCESSING BARBADOS - CENARIO A --- 22 SEPTEMBER 1986



COMFAR 2.0 - UNIDAD INDIENAS, VIENNA

Cash flow tables, production in 000 PES

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cash inflow	5000.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00
Special resources	2487.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net of tax	2550.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00
Cash outflow	4042.74	4042.74	4042.74	4042.74	4042.74	4042.74	4042.74	4042.74	4042.74	4042.74	4042.74	4042.74	4042.74	4042.74	4042.74
Assets	2347.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Operating costs	5197.50	5196.50	5196.50	5196.50	5196.50	5196.50	5196.50	5196.50	5196.50	5196.50	5196.50	5196.50	5196.50	5196.50	5196.50
Depreciation	2097.97	672.76	598.98	525.02	458.97	371.27	294.77	208.21	110.44	0.00	0.00	0.00	0.00	0.00	0.00
Financial	518.04	282.85	319.62	361.17	408.12	441.18	471.13	521.13	588.08	645.43	731.94	809.64	879.00	949.00	1000.00
Interest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dividend	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dividend tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dividend paid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net cash balance	57.26	-48.00	443.25	395.25	443.25	443.25	443.25	443.25	443.25	-480.65	-142.65	443.25	1403.50	1403.50	1403.50
Initial cash balance	60.74	16.27	455.82	1298.37	1741.68	2185.02	2628.38	3071.73	3515.08	3958.43	4401.78	4845.13	5288.48	5731.83	6175.18
Net cash balance	60.74	16.27	455.82	1298.37	1741.68	2185.02	2628.38	3071.73	3515.08	3958.43	4401.78	4845.13	5288.48	5731.83	6175.18
Net cash balance	60.74	16.27	455.82	1298.37	1741.68	2185.02	2628.38	3071.73	3515.08	3958.43	4401.78	4845.13	5288.48	5731.83	6175.18

FISH PROCESSING BARBADOS - GENARIC F - 27 SEPTEMBER 1984

COMFAR 2.0 - UNIDAD INDIENAS, VIENNA

Cashflow Discounting:

a) Net cash flow	12.00
Net present value	3840.35 at 12.00%
Internal Rate of Return (IRR)	not found
b) Net Worth	13.00
Net present value	7687.94 at 13.00%
Internal Rate of Return (IRR)	not found
c) Internal Rate of Return on total investment:	
Net present value	2976.86 at 13.00%
Internal Rate of Return (IRR)	not found
Net Worth x Equity paid plus reserves	72.97

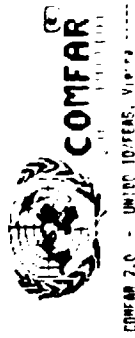
FISH PROCESSING BARBADOS - GENARIC F - 22 SEPTEMBER 1984



COMFAR 2.0 - UNITED IOT/FEAS, Vienna

Year	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Net Income Statement in 000 BDT															
Total sales, incl. sales tax	2350.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00	4800.00
Less: variable costs, incl. sales tax	1989.32	5304.85	5304.85	5304.85	5304.85	5304.85	5304.85	5304.85	5304.85	5304.85	5304.85	5304.85	5304.85	5304.85	5304.85
Variable margin	360.68	1495.15	1495.15	1495.15	1495.15	1495.15	1495.15	1495.15	1495.15	1495.15	1495.15	1495.15	1495.15	1495.15	1495.15
As % of total sales	21.99	21.99	21.99	21.99	21.99	21.99	21.99	21.99	21.99	21.99	21.99	21.99	21.99	21.99	21.99
Non-variable costs, incl. depreciation	280.35	280.35	280.35	280.35	280.35	280.35	280.35	280.35	280.35	280.35	280.35	280.35	280.35	280.35	280.35
Operational margin	780.33	1214.80	1214.80	1214.80	1214.80	1214.80	1214.80	1214.80	1214.80	1214.80	1214.80	1214.80	1214.80	1214.80	1214.80
As % of total sales	10.99	17.86	17.86	17.86	17.86	17.86	17.86	17.86	17.86	17.86	17.86	17.86	17.86	17.86	17.86
Cost of finance	518.09	677.50	677.50	640.53	598.98	557.03	498.97	439.02	371.27	294.72	208.21	118.46	0.00	0.00	0.00
Gross profit	-237.72	537.50	537.50	574.27	615.82	662.77	715.83	775.78	843.53	928.08	1006.59	1085.74	1156.20	1156.20	1156.20
As % of total sales	0.00	11.18	11.18	11.96	12.83	13.81	14.91	16.02	17.36	19.13	20.97	22.42	23.88	23.88	23.88
Allocations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Available profit	-237.72	537.50	537.50	574.27	615.82	662.77	715.83	775.78	843.53	928.08	1006.59	1085.74	1156.20	1156.20	1156.20
Tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net profit	-237.72	537.50	537.50	574.27	615.82	662.77	715.83	775.78	843.53	928.08	1006.59	1085.74	1156.20	1156.20	1156.20
Dividends paid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Undistributed profit	-237.72	537.50	537.50	574.27	615.82	662.77	715.83	775.78	843.53	928.08	1006.59	1085.74	1156.20	1156.20	1156.20
Accumulated undistributed profit	-237.72	299.78	837.28	1411.55	2027.37	2690.14	3405.97	4181.75	5025.28	5945.36	6951.45	7997.69	9153.89	10310.09	11566.29
Gross profit, % of total sales	-9.32	11.18	11.18	11.96	12.83	13.81	14.91	16.02	17.36	19.13	20.97	22.42	23.88	23.88	23.88
Net profit, % of total sales	-9.32	11.18	11.18	11.96	12.83	13.81	14.91	16.02	17.36	19.13	20.97	22.42	23.88	23.88	23.88
ROI, Net profit, % of equity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ROI, Net profit-interest, % of invest.	5.70	21.34	21.34	21.34	21.17	21.17	21.17	21.17	21.17	17.68	16.29	15.50	15.50	15.50	15.50

FISH PROCESSING BARBADOS - CEMARIO B - 27 SEPTEMBER 1986



COMFAR 2.0 - UNITED ID/FEERS, Vienna

Cash flow tables, production in 000 RBFS

Year	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Total cash inflow	6407.76	8027.53	8027.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53
Financial resources	3500.00	1100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sales, net of tax	2907.76	7227.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53
Total cash outflow	6407.00	8018.61	7993.64	8133.34	8181.34	8133.34	8133.34	8133.34	8133.34	8133.34	8133.34	8133.34	8133.34	8133.34	8133.34
Total assets	1351.27	1015.97	0.00	0.00	480.00	0.00	0.00	0.00	0.00	1132.00	0.00	0.00	0.00	0.00	0.00
Operating costs	2684.98	7006.94	7006.94	7006.94	7006.94	7006.94	7006.94	7006.94	7006.94	7006.94	7006.94	7006.94	7006.94	7006.94	7006.94
Cost of finance	590.81	984.70	1804.20	1804.20	951.57	889.85	830.00	741.27	652.21	551.54	437.83	309.32	164.10	0.00	0.00
Reserve	0.00	0.00	0.00	0.00	474.83	534.57	606.31	685.13	774.19	874.84	988.57	1117.00	1262.50	0.00	0.00
Corporate tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dividends paid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surplus / deficit	-44.24	-91.08	32.89	-705.81	-753.81	-705.81	-705.81	-705.81	-705.81	-1837.81	-705.81	-705.81	-705.81	-705.81	-705.81
Computed cash balance	-11.96	-181.07	-100.18	-814.99	-1568.80	-2274.61	-2980.42	-3486.24	-4292.05	-6279.86	-6935.67	-7641.48	-8347.29	-9153.10	-9958.91
Inflow, local	2887.26	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53	7727.53
Outflow, local	5422.15	8027.53	7993.64	8133.34	8181.34	8133.34	8133.34	8133.34	8133.34	8133.34	8133.34	8133.34	8133.34	8133.34	8133.34
Surplus / deficit	-2534.89	-2534.89	-2534.89	-2534.89	-2534.89	-2534.89	-2534.89	-2534.89	-2534.89	-2534.89	-2534.89	-2534.89	-2534.89	-2534.89	-2534.89
Inflow, foreign	3500.00	1100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Outflow, foreign	590.81	984.70	1804.20	1804.20	951.57	889.85	830.00	741.27	652.21	551.54	437.83	309.32	164.10	0.00	0.00
Surplus / deficit	2909.19	1105.30	-1804.20	-1804.20	-951.57	-889.85	-830.00	-741.27	-652.21	-551.54	-437.83	-309.32	-164.10	0.00	0.00
Net cashflow	-3044.39	-720.59	-720.59	-720.59	-720.59	-720.59	-720.59	-720.59	-720.59	-720.59	-720.59	-720.59	-720.59	-720.59	-720.59
Cumulated net cashflow	-5622.94	-6343.53	-7064.12	-7784.71	-8505.30	-9225.89	-9946.48	-10667.07	-11387.66	-12108.25	-12828.84	-13549.43	-14270.02	-14990.61	-15711.20

FISH PROCESSING BARBADOS - SCENARIO C --- 22 SEPTEMBER 1986

COMFAR 2.0 - UNITED ID/FEERS, Vienna

Cash flow Discounting:

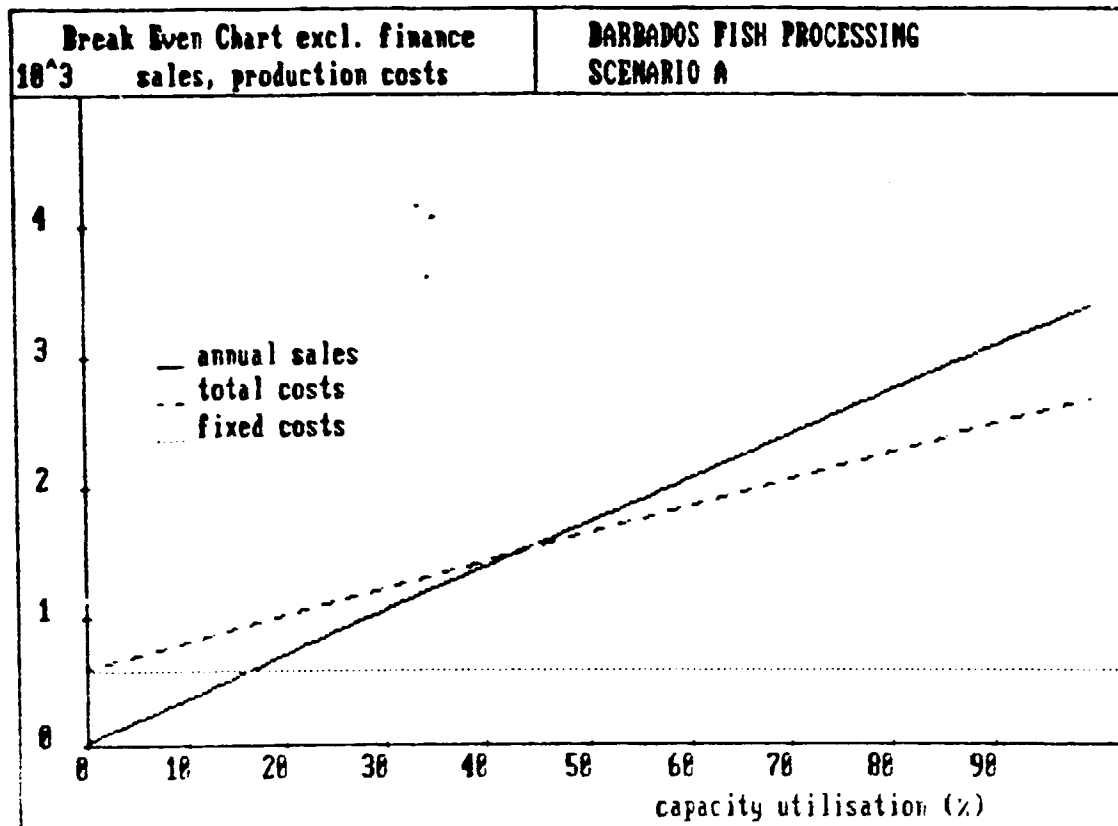
a) Equity paid versus Net income flow:	
Net present value	13.00 I
Internal Rate of Return (IRR)	not found
b) Net Worth versus Net cash return:	
Net present value	13.00 I
Internal Rate of Return (IRR)	not found
c) Internal Rate of Return on total investment:	
Net present value	13.00 I
Internal Rate of Return (IRR)	8.07 I
Net Worth = Equity paid plus reserves	



COMFAR S.A. - UNIDAD TOPEAS, VIENNA

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Net Income Statement in MC Bty																
total sales, incl. sales tax	3807.74	3807.51	3807.51	3807.51	3807.51	3807.51	3807.51	3807.51	3807.51	3807.51	3807.51	3807.51	3807.51	3807.51	3807.51	3807.51
less: variable costs, incl. sales tax	2987.21	2987.21	2987.21	2987.21	2987.21	2987.21	2987.21	2987.21	2987.21	2987.21	2987.21	2987.21	2987.21	2987.21	2987.21	2987.21
variable margin	304.57	304.57	304.57	304.57	304.57	304.57	304.57	304.57	304.57	304.57	304.57	304.57	304.57	304.57	304.57	304.57
% of total sales	10.51	10.51	10.51	10.51	10.51	10.51	10.51	10.51	10.51	10.51	10.51	10.51	10.51	10.51	10.51	10.51
less: variable costs, incl. depreciation	281.85	281.85	281.85	281.85	281.85	281.85	281.85	281.85	281.85	281.85	281.85	281.85	281.85	281.85	281.85	281.85
operational margin	72.69	72.69	72.69	72.69	72.69	72.69	72.69	72.69	72.69	72.69	72.69	72.69	72.69	72.69	72.69	72.69
% of total sales	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
total of finance	590.85	590.85	590.85	590.85	590.85	590.85	590.85	590.85	590.85	590.85	590.85	590.85	590.85	590.85	590.85	590.85
gross profit	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17
expenses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
taxable profit	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17
tax	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
net profit	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17
dividends paid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
distributed profit	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17	-568.17
accumulated undistributed profit	-568.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
gross profit, % of total sales	-19.81	-19.81	-19.81	-19.81	-19.81	-19.81	-19.81	-19.81	-19.81	-19.81	-19.81	-19.81	-19.81	-19.81	-19.81	-19.81
operational profit, % of total sales	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
net profit, % of total sales	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
net profit, % of invest.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

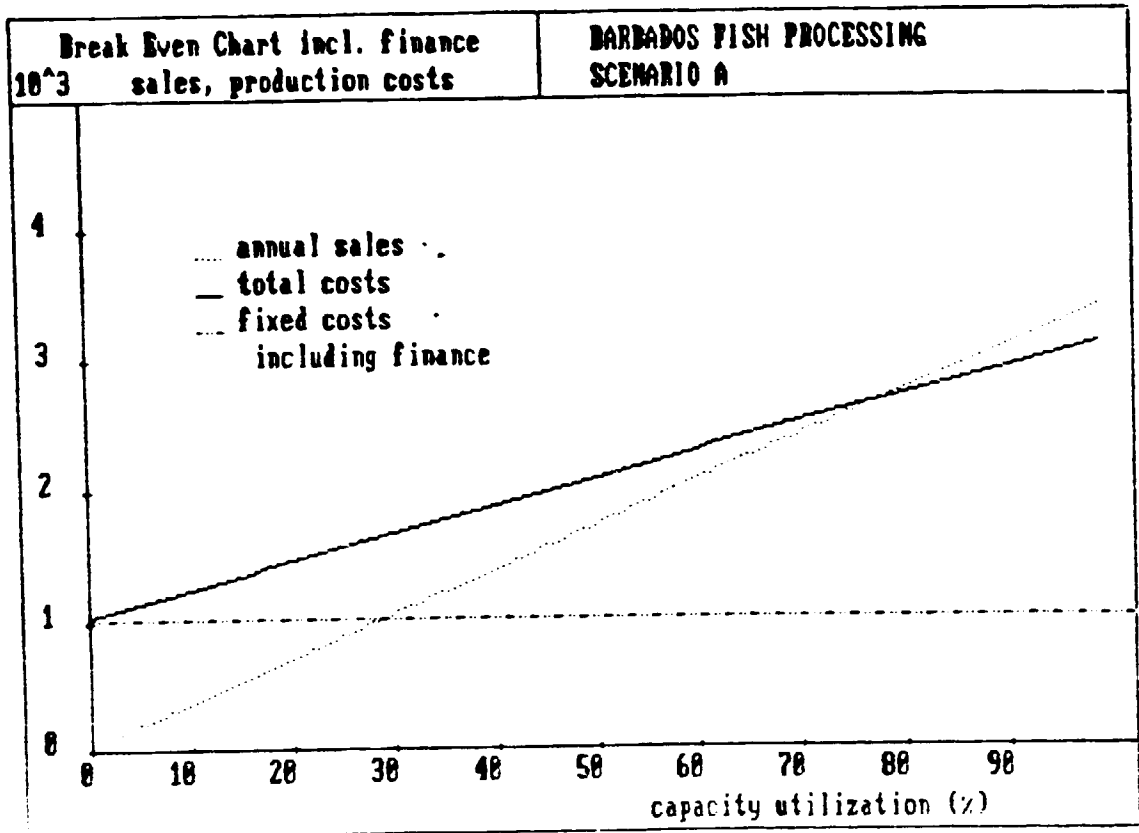
FISH PROCESSING BARBADOS - SCENARIO C - 22 SEPTEMBER 1984



Financial costs, payment of interest and the repayment of the principal, are not included.

Fixed costs are covered by sales at a capacity utilization of less than 20%.

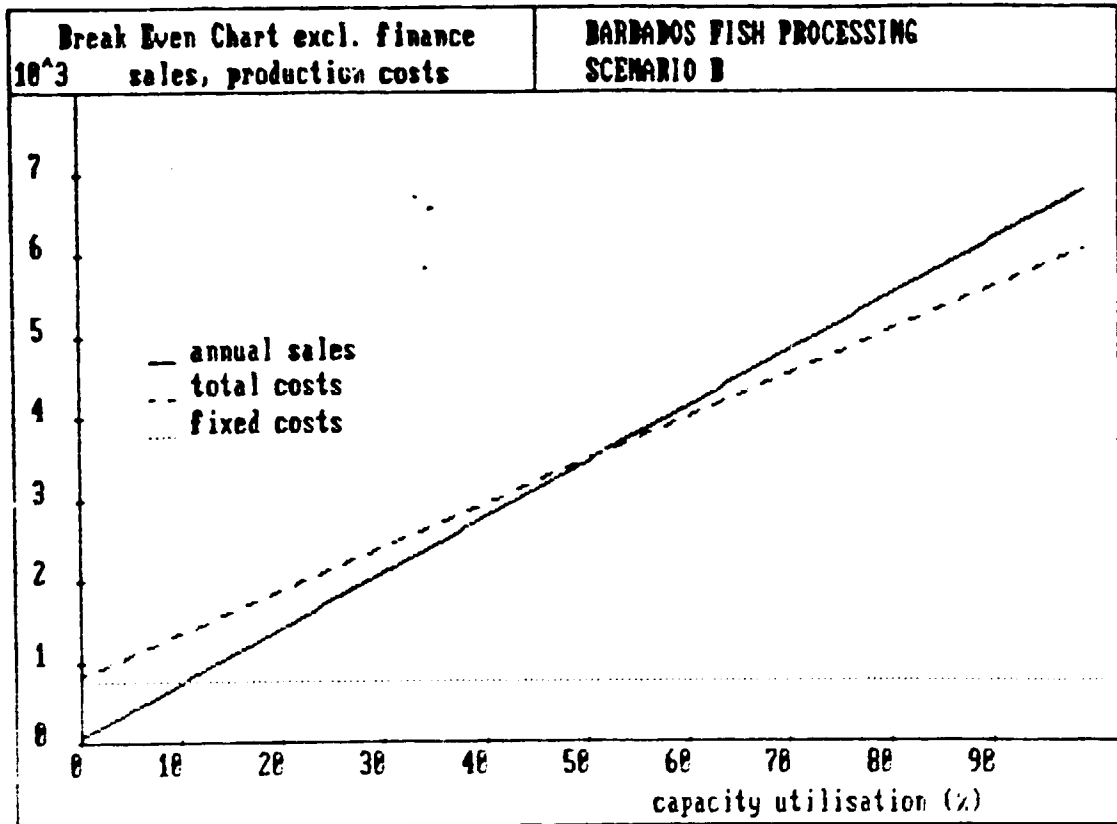
Sales equal total costs at approximately 48% capacity utilization.



The above chart includes financial costs, which are based on the assumption that the total investment is loan financed. The interest rate is 13% and the loan is amortized within 10 years.

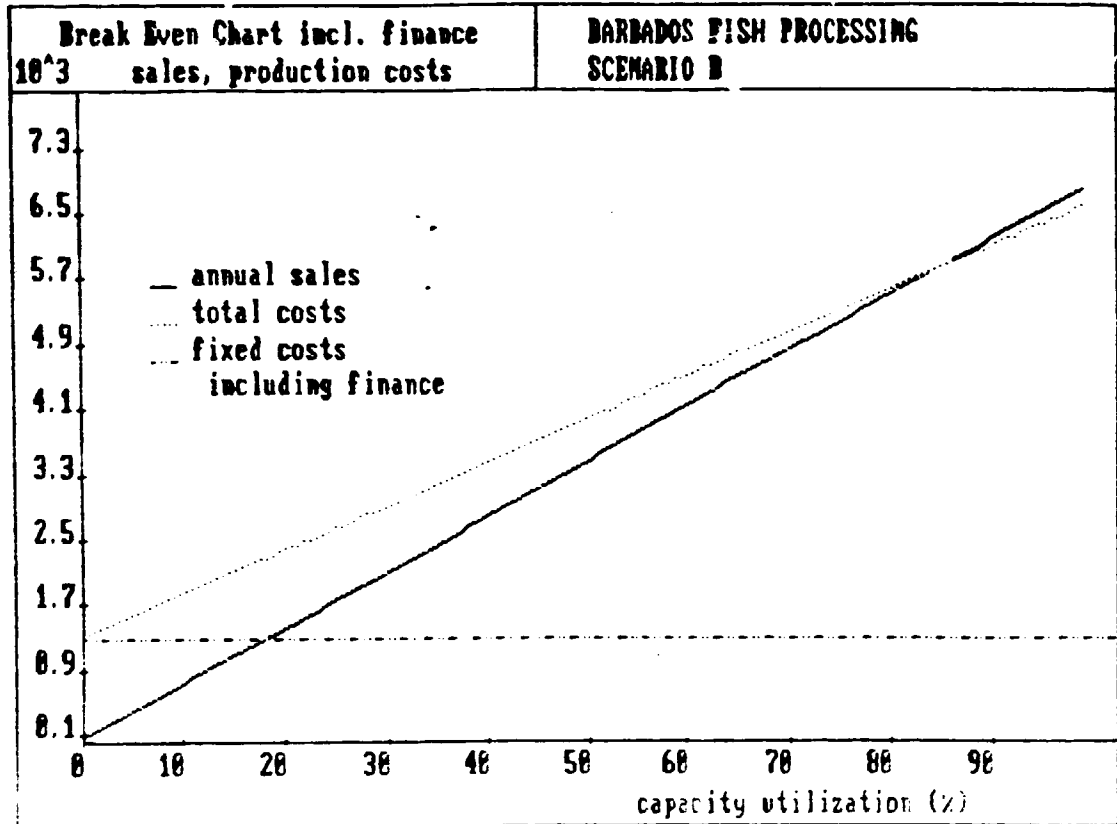
Fixed costs are covered by sales at less than 30% capacity utilization.

Total costs equal sales at 78% capacity utilization.



Financial costs are not included.

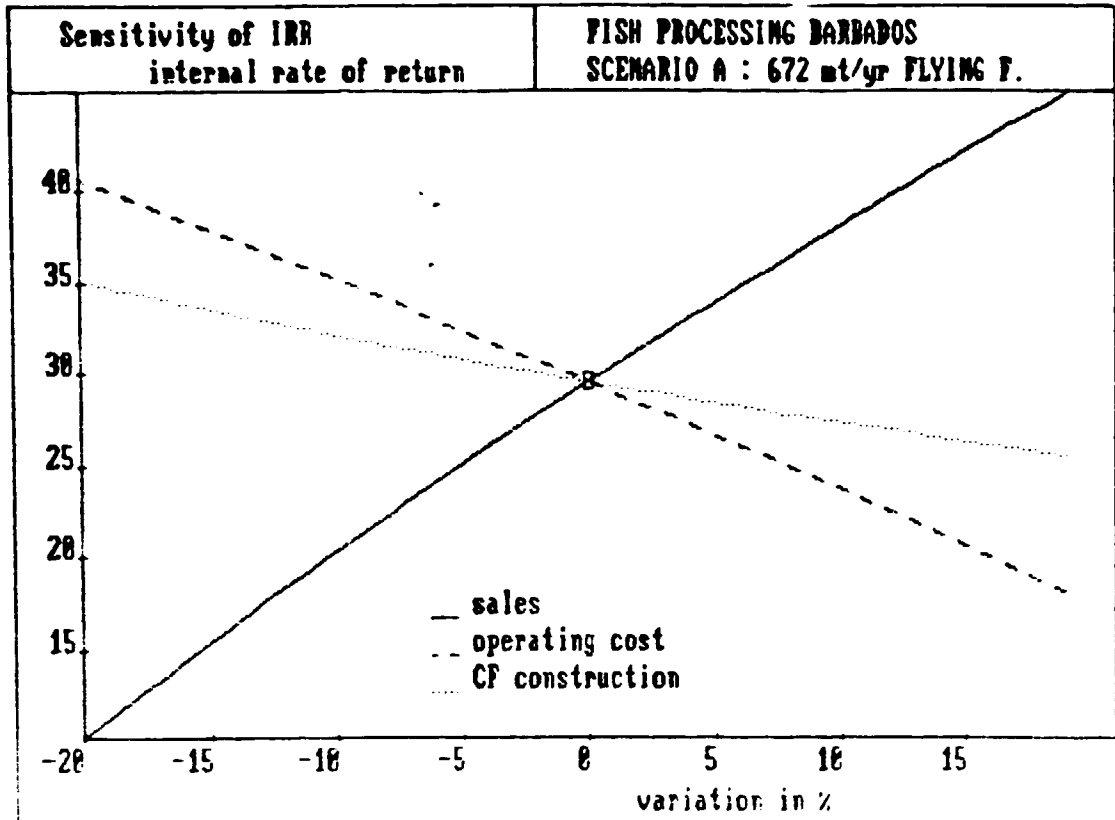
The break even points for fixed and total production costs are at 10% and 50% capacity utilization.



Financial costs, according to Scenario A, are considered.

Fixed costs are covered by sales at a capacity utilization of less than 20%.

Sales equal the total production costs at about 85% capacity utilization.



The internal rate of return (IRR) at the given assumptions of Scenario A is about 30%.

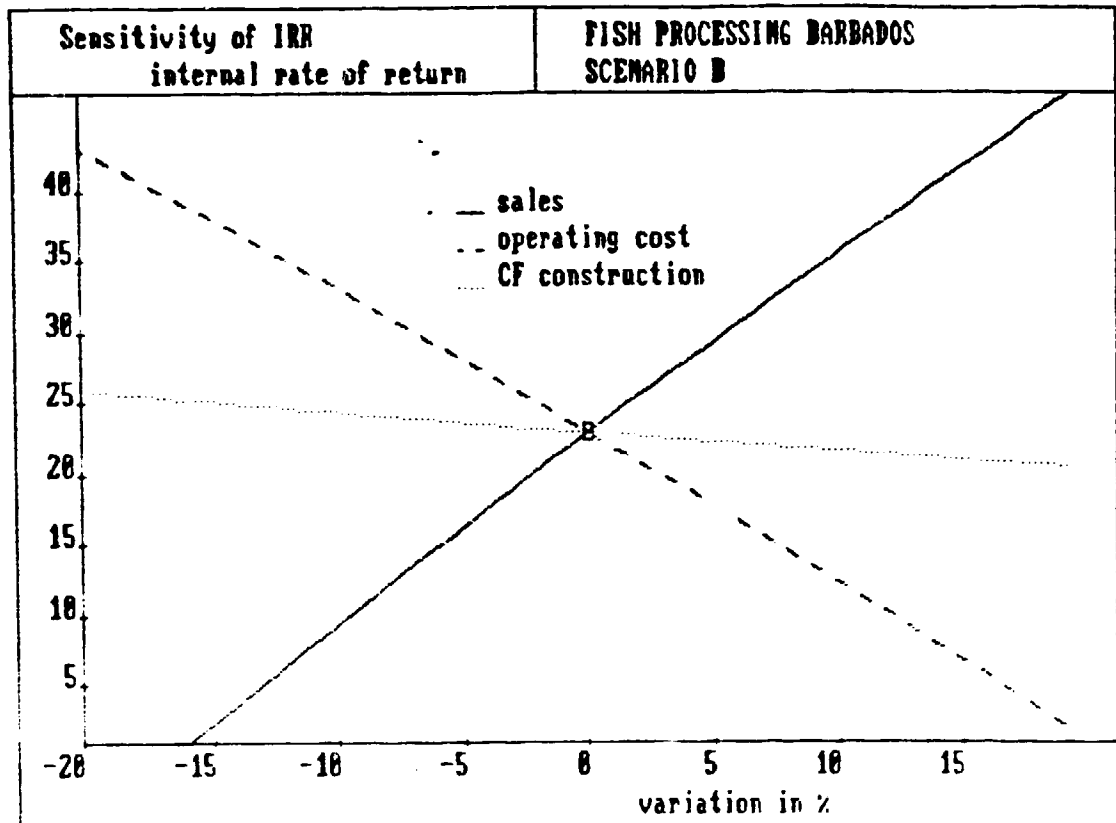
The IRR is relatively sensitive towards changes of sales prices. However, due to the high initial level, a decline of sales prices of up to 15% would still lead to an acceptable IRR of over 15%.

The IRR is less sensitive towards variations of the operating costs. A 20% increase of operating costs corresponds with an IRR of over 25%.

Due to the low initial investment costs - in comparison to the annual net cash flows - changes of the investment costs have a neglectable impact on the profitability.



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The internal rate of return of Scenario B is about 23%.

Like in Scenario A, the IRR is sensitive towards sales prices. The comparatively higher sensitivity towards operating costs is a result of higher material costs.

A 10% reduction of sales prices or an increase of operating costs by 13% correspond with an IRR of 10%.

Hence, the margin of security is lower than in Scenario A, however, under the given conservative assumptions, it may still be regarded as acceptable.