23. FINANCIAL ANALYSIS OF FISHERIES PROJECT ANALYSIS - A CASE STUDY

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In the paper, author analyzes the need for a better understanding of financial aspects of project by undergoing a case study in processing plant in Kerala; discuss the various tools used for quantifying the project based on costs and benefits and its key role in estimating actual benefits. This includes Discounted cash flow methods such as Discounted Payback Period, Discounted Benefit cost ratio, Net Present value (NPV), Internal Rate of returns, etc. It highlights the importance of time value of money, a major factor that must be given adequate attention while analyzing the projects. Since investment decisions are irreversible, poor project analysis will lead to considerable wastage of money, time, and energy. Thus one must invest in any Fisheries project only after thorough and careful analysis using these financial tools, considering the unique characteristics of Fisheries sector.

Introduction

An investment is done for either returns in the form of profit or public welfare. When a project is formulated, its viability for technical, commercial managerial, financial and economic aspects using various tests of consistency should carried out in order to justify the worthiness for selection and ranking with other competing projects. Financial analysis of the project analysis deals with the extent to which a particular project is able to return the investment in the form of profit with in the stipulated time (Price Gittinger, J., 1982). In this paper, the author tries to analyze the worthiness of establishing a processing plant in Kerala state using available financial tool of project analysis.

Methodology :

The proposed plant is located at Aroor in Alappuzha district in Kerala. The plant is proposed for a total annual capacity of 2500 tonnes (t), with tunnel freezing (2t), plate freezing (5t) and IQF freezing (2t) facilities and possesses a flake ice maker (5t) and shrimp grading unit. They possess two cold storages of 300 to total capacity and 3 refrigerated trucks.

Different financial tools used:

Discounted pay back period

It is a simple method which estimates the length of the time required for an investment to pay itself out; that is the number of years required for a firm to cover its original investment from the net cash inflows.

Net present value (NPV)

It is a discounted cash flow technique (DCF) .It is the present value discounted at firm's required rate of return on the stream of net cash flows from the project minus the project's net investment. This method uses the discounting formula of a non-uniform or uniform series of payments to value the projected cash flow for each investment alternative at one point in time.

$$NPV = -INV + \frac{P_1}{(1+i)^1} + \frac{P_2}{(1+i)^2} + \frac{P_3}{(1+i)^3} + \ldots + \frac{P_n}{(1+i)^n}$$

Where, $P_1 \ldots \ldots P_n$ are net cash flows.

i = the interest rate or marginal cost of capital .

n = the project expected life.

INV = the initial investment.

Benefit cost ratio (BCR)

It is also called as Profitability Index (PI). It is the ratio of present value of future net cash flows over the life of the project to the net-investment.

$$PI = \frac{\sum_{t=1}^{n} \frac{P_t}{(1+i)^t}}{INV} \quad \text{or} \quad PI = \frac{\sum_{t=1}^{n} \frac{B_t}{(1+t)^t}}{\sum_{t=1}^{n} \frac{C_t}{(1+i)^t}}$$

Internal Rate of Return (IRR)

It is the interest rate that will equate the sum of net cash flows to the initial investment. The interest rate that satisfies this equation is called internal Rate of Return (IRR).

There is no way of finding the IRR. One is forced to use a systematic procedure of trial and error to find out the discount rate that will equate the net cash flows to the initial investment.

When the NPV =0, then

$$\sum_{t=1}^{n} \frac{P_t}{(1+i)^t} = INV \quad or \quad \sum_{t=1}^{n} \frac{Bt - Ct = 0 \ \ (in \ case \ of \ series \ of \ cash \ flows)}{(1+i)^t}$$

i = Internal Rate of Return (IRR)

Results:

The economic viability of the working capital is as given below:

WORKING CAPITAL

Cost of inventory for 25 days inclusive of raw material and processed product = Rs. 484 lakhs.

	Quantity	Unit cost (Rs.)	Total cost (Rs. in lakhs)
TOTAL INVESTMENT			
Source of Investment			
- Borrowed	60%		290.4
- Equity	40%		193.6
- Invest on borrowed capital	16%		77.44
ANNUAL RETURNS			
Fishes			
- Pomfrets	100 (t)	1,00,000	100
- Ribbon fishes	100 (t)	50,000	50
- Seer fishes	200 (t)	45,000	90
- Perches	50 (t)	60,000	30
- Misc.	50 (t)	30,000	15
Sub-total	500 (t)		285
Shrimps			
- HOSO IQF	500	1,90,000	950
- HLSO IQF	250	2,10,000	525
- HLSO block	250	1,80,000	450
Total Turn Over	**1500**		**2,210**

GROSS CONTRIBUTION			
Turn Over			2,210
Less : Operating Cost			1,849
Gross contribution			361
NET PROFIT			
- Gross contribution			361
- Less : Insurance			14.60
- Less : Maintenance			
* Land and building (5%)			3.36
* Machinery and equipment (6%)			13.48
- Less : Depreciation			
* Building (5%)			2.99
* Machinery and equipment (10%)			22.46
- Less : Interest			45.76

Net Profit before tax Rs. 258.35, i.e., Rs. 258 lakhs.

ECONOMIC ANALYSIS (Project for 5 years)

Discounted Day Back Period

Years	Net cash of low (Rs. In lakhs)	Discounted rate 12%	Present value of future money (Rs. In lakhs)	Cumulative value (Rs. In lakhs)
1	258	0.8929	230.3682	-
2	265	0.7972	211.2580	441.6262
3	273	0.7118	194.3214	635.9476
4	281	0.6355	178.5755	814.5231
5	286	0.5674	162.2764	976.7995
Total				**976.7995**

Discounted Pay Back Period	=	By the 1st year itself.
Net Present Value	=	Present value of future money - Initial net investment
	=	976.79 - 477
	=	499.79

Internal Rate of Returns :

Table given below shows the present value of cash flows discounted at two rates (one positive and other negative).

Years	Net Cash Flow	Lower Discounting 12% Rate	Present Value	Higher Discounting 49%	Present value
1	258	0.8929	230.37	0.6711	173.14
2	265	0.7972	211.26	0.4504	119.36
3	273	0.7118	194.32	0.3023	82.53
4	281	0.6355	178.58	0.2029	57.01
5	286	0.5674	162.28	0.1362	38.95
Total			976.79		470.99

$$IRR = 12 + \frac{976}{506} \times 37 = 83.36\%$$

$$\text{Discounted Benefit Cost Ratio} = \frac{976}{477} = 2.05$$

Discussion and Conclusion:

In the financial evaluation of the establishing a processing plant in Aroor, Kerala; the financial indicators, which were considered, includes the Discounted pay back period, Net Present worth, Benefit cost ratio and internal rate of Return. The analysis indicated these parameters were 1,499,2.05 and 83.36 respectively. It indicates that the investment will be returned in one year. NPV is equivalent to 499, which indicates that future value of present investment will be 499, BCR ratio is 2.05, which indicates that the benefit earned for every rupee is 2.05. IRR is equivalent to 83.36, which is more than the bank rate of interest, which means that the project will be feasible in the specified rate of interest and the project yielding capacity is 83.36% . According to Price Gittinger, 1982; since the outcome of all the parameters indicates a positive value, the project is deemed to feasible and economically viable.

Good investment is the fortunate not only to the sponsoring agency but also to the entire nation as a whole. Since the investment decisions are practically irreversible, poor decisions will lead to the significant wastage of money, time and energy. All investment decisions therefore have to be made only after careful analysis of the project based on

various financial concepts and techniques mentioned. While analyzing the project, the unique nature of the sector should be taken into consideration especially as in the case of fisheries and agriculture, where the yield is highly vulnerable to various risk and uncertainties. (Velayudhan, 1991). Above all, the time value of money should be the most important criterion for analyzing the projects.

References:

Price Gittinger, J., (1982), Measures of project worth *In:* Economic analysis of agricultural projects, 243pp.

Velayudhan, T. D., (1991), Journal of Fisheries Economics and development, 1(1), 27p.