



P-ISSN: 2349-8528

E-ISSN: 2321-4902

IJCS 2020; 8(1): 2499-2502

© 2020 IJCS

Received: 16-11-2019

Accepted: 18-12-2019

RR Nirgude

Department of Agril. Economics,
Mahatma Phule Krishi
Vidyapeeth, Rahuri,
Ahmednagar, Maharashtra,
India

SV Satpute

Department of Agril. Economics,
Mahatma Phule Krishi
Vidyapeeth, Rahuri,
Ahmednagar, Maharashtra,
India

BH Kamble

Department of Agril. Economics,
Mahatma Phule Krishi
Vidyapeeth, Rahuri,
Ahmednagar, Maharashtra,
India

SA Choudhari

Department of Agril. Economics,
Mahatma Phule Krishi
Vidyapeeth, Rahuri,
Ahmednagar, Maharashtra,
India

DB Yadav

Department of Agril. Economics,
Mahatma Phule Krishi
Vidyapeeth, Rahuri,
Ahmednagar, Maharashtra,
India

Corresponding Author:**SV Satpute**

Department of Agril. Economics,
Mahatma Phule Krishi
Vidyapeeth, Rahuri,
Ahmednagar, Maharashtra,
India

Economic analysis of farmer-producer – organization (FPO): A case study of Abhinav farmers group, Narayangaon, Pune

RR Nirgude, SV Satpute, BH Kamble, SA Choudhari and DB Yadav

DOI: <https://doi.org/10.22271/chemi.2020.v8.i1a1.8644>

Abstract

Abhinav farmers group is the organization, which helps in linking small and marginal grape growers to export market. An attempt has been made to measure the economic performance of the project. Standard cost concept including was employed to estimate the cost of cultivation of grapes. The financial feasibility of investment in *Abhinav* Farmers Group was worked out by using different financial tools and ratios. The results revealed that average per hectare yield obtained was 204.64 and 211.31 quintals, respectively for member and non member growers while, the B: C ratio was 1.42 and 1.30, respectively which indicated that it was a profitable enterprise. The payback period and benefit cost ratio of *Abhinav* group was 18.4 years and 1.32 at 30 per cent of discount rate, respectively. The internal rate of return and break even quantity of export of grape for *Abhinav* farmers group was 32.10 per cent and 65.56 tones, respectively. More incidences of pest and disease, high cost of fertilizer and non-availability of labour were the major problems faced. Farmers should come together to form such type of FPO and government may support such investments.

Keywords: FPO, grape, IRR, export

Introduction

In India more than 70% of farmers are having only small and marginal holding hence, most of the farms are not viable. Linking small primary producers with market was identified as one of the major issue in policy making. In 12th five year plan more emphasis is given on mobilizing farmers through cooperatives and producer organization. *Abhinav* farmers group is the organization, which helps in linking small and marginal grape growers to export market. It came into existence in the year 1988. It was established with the objective of elimination of middlemen in marketing process, encouragement and development of agricultural export and the provision of extension services and inputs to the member grape growers. It negotiates better prices for the farmers and also provides technical guidance and market information to the farmers.

It is very essential to evaluate the profitability of *Abhinav* farmers group. Hence an attempt has been made to measure the economic indicators of the project i. e. Benefit-Cost Ratio, Internal Rate of Return and Pay-back Period as well as constraints in production of grapes has also been studied.

Objectives

1. To compare the costs and returns at member and non-member farmer's farm.
2. To estimate profitability.
3. To study the marketing practices followed.
4. To ascertain the constraints faced by member's of the group.

Methodology

The data of cost of cultivation of grape and problem faced by member farmers and non member farmers were collected with the help of specially designed questionnaire. Standard cost concept including Cost "A", Cost "B" and Cost "C" were worked out to estimate the cost of cultivation of grapes at members and non-members of the group to compare the level of profitability and Employment generation.

The financial feasibility of investment in *Abhinav Farmers Group* was worked out by using the following techniques:

i) Internal rate of return: The rate at which the net present value of project is equal to zero is Internal Rate of Return (IRR) to the project. The net cash inflows will be discounted to determine the present worth.

$$\text{IRR} = \frac{\text{Lower discount rate} + \text{Difference between two discount rates}}{\frac{\text{Present worth of the cash flow at lower discount rate}}{\text{Absolute difference between the present worth of the cash flow at two discount rates}}}$$

ii) Benefit cost ratio: The benefit cost ratio (BCR) was worked out by using following formula.

$$\text{B:C ratio} = \frac{\text{Present worth of gross returns}}{\text{Present worth of costs}}$$

iii) Break even point

Break even point is the minimum size of operation required to meet the total cost and total revenue break even i.e profit is equal to zero. For deriving the break even point

$$\text{BEQ} = \text{TFC}/\text{P}-\text{VC}$$

Where

BEQ = Break even quantity (Tones of grape exported)

TFC = Total annual fixed cost (₹)

P = Price per unit of output (₹)

VC = Variable cost per unit of output (₹)

iv) Pay - back period (PBP): Pay- back period represents the length of time required for the stream of cash proceeds produced by the investment to be equal to the original cash outlay that is, the time required for the project to pay for itself. In the present study, pay -back period will be calculated by successively deducting the initial investment from the net returns until the initial investment is fully recovered.

In the present study pay- back period was calculated by using the following formula.

$$\text{PBP} = \frac{\text{I}}{\text{E}} = \frac{\text{Initial investment of project}}{\text{Annual Net cash revenue}}$$

C) Financial Statement Analysis

a) Liquidity Ratios

1. Current ratio = Current assets/ Current liabilities
2. Quick Ratio = (Current assets- Inventories)/ Current liabilities
3. Net Working Capital Ratio = (Current assets - Current liabilities)/Total assets
4. Debt equity ratio = Total liabilities/ Net worth

Results

Cost and return structure in grape production

The per hectare total cost, total produce, returns and net profit at various level of cost. i.e. at cost A, cost B and cost C were worked out and are presented in Table 1. It can be seen from table that per hectare average production of grape were

recorded to be 204.64 q and 211.31 q while, the gross income estimated was ₹ 12,44,448.77 and ₹ 10,82,612.00 for member and non member farmer, respectively. The total cost (cost C) required for cultivation of grape was ₹ 8,78,924.5 and per quintal cost of grape production was ₹ 4,295.07 for member farmer. While the total cost (cost C) ₹ 8,30,294.23 and per quintal cost of grape production was ₹ 3,929.27 for non member farmer.

Profit was also worked out at various cost levels i.e. cost A, cost B and cost C i.e. farm business income, farm labour income and net income, etc. Farm business income i.e. profit at cost A was ₹ 6,40,829.43, farm labour income i.e. profit at cost B was ₹ 3,81,242.39 and net income i.e. profit at cost C was ₹ 3,65,524.31. The benefit cost ratio i.e. ratio of gross returns to total cost (cost C) was 1.42 which indicated that grape production was profitable for member farmers, While Farm business income was ₹ 5,06,399.30, farm labour income was ₹ 2,66,076.27 and net income was ₹ 2,52,322.77. The benefit cost ratio was 1.30.

Table 1: Profitability of grape production (₹/ ha)

Sr. No.	Particulars	Member	Non Member
1	Total cost	878924.5	830294.23
2	Total output (q)	204.64	211.31
3	Gross income	1244449	1082617
4	Per q cost of production	4295.07	3929.27
5	Cost		
	Cost A	603619.3	576217.70
	Cost B	863206.4	816540.73
	Cost C	878924.5	830294.23
6	Income		
	Farm business income	640829.43	506399.30
	Farm labour income	381242.39	266076.27
	Net income	365524.31	252322.77
7	Output-input ratio at cost A	2.06	1.88
	Output-input ratio at cost B	1.44	1.33
	Output-input ratio at cost C	1.42	1.30

The employment generated was highest in member farmer than non member farmers. The hired male labour was 379.87 mandays whereas hired female labour was 212.45 mandays in member farmers. The hired male labour was 362.64 mandays whereas hired female labour was 254.39 mandays in non member farmers. The family male labour was 41.87 mandays whereas family female labour was 11.13 mandays in member farmers. The family male labour was 30.00 mandays whereas family female labour was 9.15 mandays in non member farmers.

Financial feasibility of Abhinav Farmers group

The current ratio measures the ability of the project to meet its current liabilities. Higher the current ratio, the greater the short term solvency. The quick ratio based on current asset which are highly liquid i. e. inventories are excluded from current asset, as they are least liquid component of current asset. The lower the debt, the higher the degree of protection enjoyed by the creditors. The lower debt equity ratio, the more desirable it is. The total asset ratio measures how efficiently assets are employed overall. Higher the ratio, the greater turn over of assets. Higher the equity ratio, better will be the financial position of the project.

Table 2: Different financial ratios of Abhinav farmers group

Sr. No.	Year	Current Ratio	Quick Ratio	Net Capital Ratio	Debt Equity Ratio	Return on Asset	Equity Ratio
1	2016-17	2.23	2.23	4.94	0.25	0.79	0.79
2	2017-18	1.19	1.19	5.00	0.24	0.80	0.80
3	2018-19	1.88	1.18	5.04	0.24	0.80	0.80

Benefit cost ratio

The benefit cost ratio was obtained by dividing the discounted net returns by the initial investment. The net present value of costs and returns were obtained by discounting the cost and return streams by the opportunity cost of capital. Benefit-cost ratio was 1.32 at 30 per cent discount rate which was more than one indicated project was highly profitable.

Internal rate of return

This represents the rate of return over the life period of the project. The internal rate of return was computed by interpolating two discount rates. IRR of Abhinav farmers group was worked out to 30 per cent which was more than ruling rate of interest of 10 to 20 per cent. Internal Rate of Return is the rate at which the sum of discounted cash inflows equals the sum of discounted cash outflows. This represents the rate of return over the life period of the project. The internal rate of return was computed by interpolating two discount rates.

$$\text{IRR} = \text{Lower discount rate} + \frac{\text{Difference between two discount rates}}{\frac{\text{Present worth of the cash flow at lower discount rate}}{\text{Absolute difference between the present worth of the cash flow at two discount rates}}}$$

$$\text{IRR} = 30 + (35-30) * 521 / (1216)$$

$$\text{IRR} = 30 + 5 * 0.42$$

$$\text{IRR} = 30 + 2.10$$

$$\text{IRR} = 32.10$$

The internal rate of return of abhinav farmers group was 32.10 per cent which indicate that project is viable. It measures the earning capacity of the project.

Break even point

The break even point is where total cost is equal to total revenue. For abhinav farmers group the break even quantity for export of grape is 65.56 tones.

Pay-back period

The payback period refers to the time required for the project to pay for itself. For Abhinav farmers group the payback period was 18.4 years.

Price spread of Grape Export of Abhinav farmers group (₹/kg)

The detailed price spread of grape export of abhinav farmers group was presented in table 3. It was observed from table that price received by abhinav farmers group for grape per kg was ₹ 111. The per kg cost incurred by abhinav farmers group was ₹ 26.30 (23.69%). The per kg net profit earned by abhinav farmers group was ₹ 18.50 (16.66%). The per kg net price received by producer was ₹ 62.00 (55.85%).

Table 3: Price spread of Grape Export of Abhinav farmers group (₹/kg)

Particulars	Dubai	Per Cent
Price Received by Abhinav farmers group	111.00	100
Cost incurred by Abhinav farmers group	26.30	23.69
Cost on Transportation	5.41	4.87
Cost on Pre cooling and cold storage	3.20	2.88
Cost on packing	4.80	4.32
Freight charges	12.89	11.61
Margin of Abhinav farmers group	18.50	16.66
Price paid by Abhinav farmers group i.e. price received by farmers.	66.20	59.63
Cost incurred by producers	4.20	3.78
Net price received by producers	62.00	55.85

(Figures in the parentheses are the percentages to total)

Constraints faced by farmers

It is observed from table that, more incidence of pest and disease, high cost of fertilizer and plant protection material and non-availability of labour in peak season were major problems faced in production of grape which were reported by 90, 63.33, 56.67 per cent for member grape growers and

96.67, 66.67, 33.33 per cent for non member grape growers. It was also observed the lack of market information, lack of price policy by govt. and Cheating by Trader were some constraints reported by 43.33, 43.33, 43.33 per cent for member grape growers and 50, 50, 76.67 per cent, respectively for non member grape growers.

Table 4: Constraints faced by Abhinav farmers group member and Non member

Sr. No.	Particulars	Member (N = 30)		Non Member (N = 30)	
		No.	%	No.	%
1	More incidence of pest and disease	27	90.00	29	96.67
2	High cost of fertilizer and plant protection material	19	63.33	20	66.67
3	Non-availability of labour during peak season	17	56.67	10	33.33
4	Lack of market information	15	50.00	15	50.00
5	Lack of price policy by Govt. for grape	15	50.00	15	50.00
6	Cheating by Trader	13	43.33	23	76.67
7	Non-availability of adequate credit in time	13	43.33	14	46.67
8	Lack of awareness regarding insurance	12	40.00	13	43.33

9	Heavy fluctuation in prices every year	10	33.33	11	36.67
10	Delay in payments by shipping companies in case for transport damages	16	53.33	20	66.67

Conclusion

- Average per hectare yield obtained from grape cultivation was 204.64 quintal and 211.31 quintal respectively for member and non member grape growers. Cost of cultivation of grape worked out ₹ 878924.47 and ₹ 830294.23 respectively for member and non member grape grower, net returns were worked to ₹ 1244448.77 and ₹ 1082617 for member and non member grape grower and B: C ratio was 1.42 and 1.30 for member and non member grape grower respectively which indicated that the cultivation of grapes was profitable.
- The financial feasibility of investments of Abhinav farmers group, measures of project appraisal was computed. The payback period was 18.4 years. The benefit cost ratio in grape was 1.32 at 30 per cent discount rate which was more than unity. The internal rate of return 32.10 per cent which indicates a higher average earning power of money invested in the project. The break even quantity of export of grape for abhinav farmers group is 65.56 tones.
- Price received by abhinav farmers group for grape per kg was ₹ 111. The per kg cost incurred by abhinav farmers group was ₹ 26.30 (23.69%). The per kg net profit earned by abhinav farmers group was ₹ 18.50 (16.66%). The per kg net price received by producer was ₹ 62.00 (55.85%).
- More incidence of pest and disease, high cost of fertilizer and plant protection material and non-availability of labour in peak season, the lack of market information, lack of price policy by govt. and Cheating by Trader, non availability of credit in time and crop insurance not covered for grape were major problems faced in production of grape by Abhinav farmers group members and non members.

Suggestion

The member of abhinav farmers group get more price for grape than non member farmers and the high internal rate of return (32.10 %) of abhinav farmers group which indicates a higher average earning power of money invested in the project hence it is suggested that farmers should come together to form such type of FPO and the government or financial institution may support such investments at subsidized rates.

References

1. Policy and Process Guidelines for Farmer Producer Organizations Issued by Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India published in, 2013.
2. Farmer Producers' Organisations (FPOs): Status, Issues and Suggested Policy Reforms, NABARD National Paper- PLP 2019-20 and State-wise list of SFAC Promoted FPOs on the SFAC website.
3. Venkattakumar, R. and Sontakki, B.S., 2012, Producer Companies in India- Experiences and Implications, Indian Research Journal of Extension Education Special, 2012, 1.
4. Roy D, Thorat A. Success in high value horticultural export markets for the small farmers: The case of mahagrapes in India. World development. 2008; 36(10):1874-1890.

5. Singh S, Singh T. Producer Companies in India: A study of organization and performance, CMA Publication No. 246, Centre for Management in Agriculture, Indian Institute of Management, Ahmedabad, 2013.