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Research Paper

Diversification and Sustainable Hill Agriculture Development: An Economic Analysis of Marigold Cultivation in Jammu District of J&K State

Agriculture

KEYWORDS : Cost Concepts, Item wise cost, Cost structure, Gross Returns, C-B ratio.

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ABSTRACT

An investigation entitled "Diversification and Sustainable Hill Agriculture Development: An Economic Analysis of Marigold Cultivation in Jammu District of J&K State" was conducted in Akhnoor block of Jammu district the agricultural year 2011-12 where Marigold was cultivated predominantly during. From the said development block, four villages were selected randomly. Further, from each village, 15 farmers were selected randomly, so as to constitute a total sample size of 60 farm households cultivating Marigold. The farms were categorized into two categories on the basis of owned holdings viz, marginal (up to 1 ha.) and small farms (above 1 ha. and below 2 ha.). Primary data on costs & returns of the crop were collected by interviewing the farmers through personal visits with the help of an especially structured and pre-tested schedule. The per hectare total costs of cultivation (Cost C2) of Marigold was worked out to be at Rs. 145175.89 and Rs. 148972.10 in case of marginal and small farms, respectively, with an overall average of Rs. 146634.35 on all the farms taken together. Whereas, the respective Cost A1, Cost A2, Cost B1, Cost B2 and Cost C1 were found to be at Rs. 46511.19, Rs. 59511.19, Rs. 51580.89, Rs. 133955.89 & Rs. 62800.89 in case of marginal farms and Rs. 48099.86, Rs. 57099.86, Rs. 53371.27, Rs. 138392.10 & Rs. 63951.27 for small farms. The per hectare returns of Marigold were Rs. 562500 and Rs. 556250 on marginal and small farms respectively with an overall average of Rs. 560000/ha on all the farms taken together. The benefit cost ratio on the total cost of cultivation was found highest in the case of marginal farms (3.87) followed by and small farms (3.78) resulting in an overall average of 3.82 on all the sample farms, thereby reflecting that Marigold cultivation was a remunerative enterprise in the hills.

INTRODUCTION

The demand for flowers is increasing tremendously with the changing scenario of progressive economy, changing life style and changes in social values of people of the country. Man's love and demand for flowers and floricultural products at national & international level, is the driving force for floricultural industry to become one of the most expanding & dynamic enterprise in today's world. Over the past decade, flower and pot plant business in the world has increased to 40 billion dollars. The annual rate of growth in the floriculture industry is about 15 percent. Floricultural products include cut flowers, which contribute about 60 percent of the global trade, flowering and green potted plants and bedding plants from a small segment of the floricultural crop production worldwide. India's share in this global floriculture market is around 0.75 percent. Jammu & Kashmir, the most colourful state of India, is located 32.17' and 37.96' North latitude and 73-26' and 80-36' East longitude, falling in western Himalayan region of the country. The state is endowed with ample natural resources including soil, water diversity in topography, climatic conditions, and rich natural flora facilitating the cultivation of a wide range of flowers. There is an increasing demand of variety of marigold flowers by the visiting pilgrims (more than 4.2 millions) at Shri Mata Vaishno Devi Ji Shrine. Its total production is estimated at 600 to 700 quintals and unfulfilled demand of the state is of the order of 800 quintals. The marigold flowers are exported during the month of October to November from the state to the other parts of the country like Delhi etc. Moreover, being a city of temples, the flower is also demanded for worship/puja purposes by certain communities of the population. With the above facts in mind, the present study was undertaken to estimate the costs and returns of Marigold cultivation in Jammu district of J&K state.

MATERIALS AND METHODS

The present study has been carried out in the Akhnoor development block of Jammu district of J&K state of India which has been chosen specifically because it covers a large chunk of area under its cultivation than other marigold grown area in the region. The primary data were collected from 4 villages (with 15 farms from each village) selected randomly from the said block. The farms were categorized into two categories on the basis of owned holdings viz, marginal (upto 1 ha.) and small (between 1 & 2 ha.). Then a sample of 60 farmers was selected randomly. Required data from sample farmers were collected through a pre-tested schedule and questionnaires by personal interview method. Tabular analysis has been used to obtain the result of the study. The reference year of the study was agricultural year 2011-12. The following cost concepts were used:

Cost A_1 = Expenditure on casual labour, bullock labour, farm machinery, seeds, fertiliser and manure, plant protection chemicals, irrigation, miscellaneous expenditure (cost of transportation, baskets and ropes) and interest on working capital + depreciation + land revenue.

Cost A_2 = Cost A_1 + rent paid for leased-in land.

Cost B_1 = Cost A_1 + interest on value of owned fixed capital excluding land.

Cost B_2 = Cost B_1 + rental value on owned land + rent paid for leased-in land.

Cost C_1 = Cost B_1 + imputed value of family labour.

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Cost C_2 = Cost B_2 + imputed value of family labour.

RESULTS AND DISCUSSION

i). The item wise break-up of cost of cultivation:

The item wise break-up of cost of cultivation were presented in Table 1 which showed that the per hectare cost of cultivation of marigold was Rs. 145175.89 on marginal farms, Rs. 148972.10 on small farms and Rs. 146634.35 on overall farms. The Total variable cost was worked out to be standing at Rs. 55611.19, Rs. 55843.86 and Rs. 55644.24 on marginal, small and overall farms respectively. Expenditures on human labour, machine labour, manure & fertilizer, irrigation, seed and plant protection chemicals were the important components of Total variable cost. The expenditure incurred on the human labour was the highest and the expenditure on human labour (casual and family labour) used for performing the operation like transplanting, weeding and harvesting was found out to be Rs. 24744/ha. on the overall farms. Similarlyk, rental value of land (rental value of owned land and rent paid for leased-in land), depreciation charges and interest on fixed capital were the major components of fixed costs, which accounted for Rs. 89564.70, Rs. 93128.24 and Rs. 90990.11 for marginal, small and overall farms respectively. In case of fixed cost, the expenditure on rental value of land and interest on fixed capital (excluding land) were found highest on overall farms with their res0pective figures standing at Rs. 83433.33/ha and Rs. 5150.38/ha.

ii). Cost concept wise break-up of Cost of Cultivation:

The Cost-cencept wise break-up of Cost of cultivation of Marigold crop were presented in Table Table 2 which indicated that the per hectare cost C_2 of cultivation of marigold was Rs. 145175.89 on marginal farms and Rs. 148972.10 on small farms. The overall farms average cost C_2 of cultivation was worked out to be Rs. 146634.38 per hectare. The Cost A_1 (which constituted all direct costs) was Rs. 46511.19 and Rs. 48099.86 on marginal and small farms respectively. However, the average cost A_1 on all the farms taken together stood at Rs. 47146.67/ha. The cost A_2 constituted was Rs. 59511.19 and Rs. 57099.86 on marginal and small farms respectively. However, the all farms average cost A_2 was Rs. 58546.67/ha. The cost B_1 constituted was Rs. 51580.89 and Rs.53371.27 of marginal and small farms respectively. However, the all farms average cost B_1 was Rs. 52297.05/ha. The cost B_2 constituted was Rs. 133955.89 and Rs. 138392.10 of marginal and small farms per hectare respectively. However, the all farms average cost B_2 was Rs. 135730.38 per hectare. The cost C_1 constituted was Rs. 62800.89 and Rs. 63951.27 of marginal and small farms respectively. However, the all farms average cost C_1 was Rs. 63201.05 per hectare.

iii). Cost and return structure of marigold production

The costs incurred and returns realized from different categories of farms were estimated and the results were presented in Table 3. The total cost constituted were highest Rs. 148972.10 and Rs. 145175.89 on small and marginal farms respectively. However, the total cost on all the farms was Rs. 146634.35 per hectare, of which the total variable cost was Rs. 55644.24/ha. and total fixed cost was Rs. 90990.11/ha. The gross returns were highest at Rs. 562500 on marginal farms followed by Rs. 556250 on small farms. However, the all farms gross return was Rs. 560000/ha. The net return was highest in case of marginal farms (Rs. 417324.11) followed by small farms (Rs. 407277.90). However, on the all farms the net returns were Rs. 413365.65. The benefit cost ratio was highest in case of marginal farms (3.87) followed by on small farms (3.78). However, the overall ratio for all the farms as a whole was seen at 3.82.

CONCLUSIONS

Economic Analysis of cost and returns of Marigold in Jammu district of J&K state revealed that the per hectare total costs of cultivation (cost-C_2) of Marigold worked out to be Rs. 145175.89 and Rs. 148972.10 in case of marginal and small farms, respectively, with an overall average farms of Rs. 146634.35 while as the respective cost A_1, cost A_2 cost B_1 cost B_2 and cost C_1 were Rs. 46511.19, Rs. 59511.19, Rs. 51580.89, Rs. 133955.89 and Rs. 62800.89 in case of marginal farms and Rs. 48099.86, Rs. 57099.86, Rs. 53371.27, Rs. 138392.10 and Rs. 63951.27 for small farms and on an average of overall farms were Rs. 47146.67, Rs. 58546.67, Rs. 52297.05, Rs. 135730.38 and Rs. 63201.05, respectively. The per hectare returns of Marigold were Rs. 562500 and Rs. 556250 for marginal and small farms with an average of overall farms was Rs. 560000/ha. The benefit cost ratio on the total cost of cultivation was highest on marginal farms followed by smll farms with the respective figures standing at 3.87 and 3.78. The overall ratio for all the farms taken together as a whole was found to be at 3.82, thereby reflecting that Marigold cultivation was a remunerative enterprise in hill agriculture situations. Therefore, policies should be formulated towards diversification from less remunerative towards higher remunerative enterprises which would ultimately increase the livelihood security of the farmers as well as conserving the natural resources and providing labour work opportunities which would help that part of population also which is landless and depend on others for their livelihoods.

Table-1: Item-wise break-up of cost of cultivation of Marigold on different sized farms (Rs./ha.)

Items		Marginal	Small	All Farms
Human labour	Casual	13560.00	14260.00	13840.00
	Family	11220.00	10580.00	10904.00
	Total human labour	24780.00	24840.00	24744.00
Machine labour		4090.00	4120.00	4102.00
Seed		5700.00	5760.00	5724.00
Manures & fertilizers		7265.48	7290.26	7275.40
Plant protection chemicals		7645.83	7658.38	7650.85
Irrigation charges		1737.08	1756.00	1744.65
Miscellaneous Expenditure		1245.00	1258.25	1250.30
Interest on working capital		3147.80	3160.97	3153.07
Total variable cost		55611.19	55843.86	**55644.24**
Rental value of land	Rental value of owned land	69375.00	76020.83	72033.33
	Rent paid for leased-in land	13000.00	9000.00	11400.00
	Total rental value of land	82375.00	85020.83	83433.33
Depreciation on implements and farm buildings		1970.00	2686.00	2256.40
Land revenue		150.00	150.00	150.00
Interest on fixed capital (excluding land)		5069.70	5271.41	5150.38
Total fixed cost		89564.70	93128.24	90990.11
Total cost (V.C.+ F.C.)		145175.89	148972.10	**146634.35**

Table-2: Per hectare cost of cultivation (cost concept-wise) of marigold on different sized farms
(Rs./ha.)

Particulars ↓	Categories →	Marginal	Small	All Farms
Cost -A_1	Casual Labour	13560.00	14260.00	13840.00
	Farm Machinery	4090.00	4120.00	4102.00
	Seed	5700.00	5760.00	5724.00
	Manure & Fertilizer	7265.48	7290.26	7275.40
	Plant protection chemicals	7645.83	7658.38	7650.85
	Irrigation charges	1737.08	1756.00	1744.65
	Miscellaneous expenditure	1245.00	1258.25	1250.30
	Interest on working capital	3147.80	3160.97	3153.07
	Depreciation charges	1970.00	2686.00	2256.40
	Land revenue	150.00	150.00	150.00
	Total Cost- A_1	46511.19	48099.86	47146.67
Cost -A_2	Cost -A_1	46511.19	48099.86	47146.67
	Rent paid for leased-in land	13000.00	9000.00	11400.00
	Total Cost- A_2	59511.19	57099.86	58546.67
Cost -B_1	Cost -A_1	46511.19	48099.86	47146.67
	Interest on fixed capital (excluding land)	5069.70	5271.41	5150.38
	Total Cost- B_1	51580.89	53371.27	52297.05
Cost -B_2	Cost -B_1	51580.89	53371.27	52297.05
	Rental value of owned land	69375.00	76020.83	72033.33
	Rent paid for leased-in land	13000.00	9000.00	11400.00
	Total Cost- B_2	133955.89	138392.10	135730.38
Cost C_1	Cost -B_1	51580.89	53371.27	52297.05
	Family labour	11220.00	10580.00	10904.00
	Total Cost- C_1	62800.89	63951.27	63201.05
Cost -C_2	Cost -B_2	133955.89	138392.10	135730.38
	Family labour	11220.00	10580.00	10904.00
	Total Cost -C_2	145175.89	148972.10	**146634.38**

Table- 4.3: Per hectare costs and returns of marigold on different sized farms
(in Rs.)

Sr. No.	Particulars	Marginal	Small	All farms
1.	Costs			
	Total variable cost	55611.19	55843.86	55644.24
	Total fixed cost	89564.70	93128.24	90990.11
	Total cost	145175.89	148972.10	146634.35
2.	Returns			
	Yield (in q.)	225.00	222.50	224.00
	Gross returns	562500.00	556250.00	560000.00
	Net returns	417324.11	407277.90	413365.65
33.	**Cost-Benefit Ratio**	**1 : 3.87**	**1 : 3.78**	**1 : 3.82**

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