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ECONOMIC ANALYSIS OF PRODUCTION OF BANANA IN KADAPA DISTRICT OF ANDHRA PRADESH, INDIA

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ABSTRACT

India occupies first position in production of banana in the world. This paper presents the findings of cost and return structure of banana in Kadapa district of Andhra Pradesh India. Samples of 90 farmers were selected randomly for this study. Based on the size of land holding, farmers were stratified in to small (<2 ha), medium (2-4 ha) and large (>4 ha) farmers. The total cost of cultivation of banana per hectare was ` 408788.70, ` 415920.55 and ` 441660.59 for small, medium and large farmers, respectively. The average per hectare net return received by the small, medium and large cultivator was ` 348478.46, ` 362643.28 and ` 408424.40, respectively. The benefit-cost ratio at cost C_3 was 1.85, 1.87 and 1.92 for small, medium and large farmer, respectively which indicated that the banana cultivation was profitable.

Key words : Banana, Production, Economics, Benefit-cost ratio.

Introduction

India is the largest producer of banana in the world. The wonder berry known as the banana is the grab fruit for millions of people worldwide, contributing to a more well-rounded diet. According to Press Information Bureau (PIB), the total horticulture production in the year 2022-23 is estimated to be 351.92 million tonnes, an increase of about 4.74 million tonnes (1.37%) as compared to the year 2021-22 (final). Andhra Pradesh ranks top in banana production in India. In Andhra Pradesh, Banana is largely grown in the districts of Kadapa, Anantapur, Kurnool, Chittoor and Nellore. The mainly grown variety of banana in Kadapa district was grandnaine (G9). There are some other commercial varieties of banana also grown like thellachakkarakeli, red banana, karpuravalli etc.

Materials and Methods

The present investigation was based on the primary data. Kadapa district in Andhra Pradesh was selected for this study as this district constituted the more area for banana production. Samples of 90 farmers were selected at random from three mandals namely Pulivendula, Vemula and Lingala. The selected banana growers were personally interviewed and required data collected from them for the year 2021-2022, by the survey method through a specially designed pre-tested schedule. Grand -naine variety was mostly grown by the banana growers.

Cost concepts

The cost of production of banana has been presented in terms of Cost A_1, Cost A_2, Cost B_1, Cost B_2, Cost C_1, Cost C_2 and Cost C_3. Various costs have been worked out by applying the following method.

Cost A_1: All actual expenses in cash and kind incurred in production consist of value of hired human labour, charge of hired machinery, value of owned machinery, value of planting material, value of fertilizers, cost of propping, value of insecticide and fungicide, imputed value of manures, charges of irrigation, land revenue, cess and other taxes, depreciation on farm implement, interest on working capital, miscellaneous costs etc.

Cost A_2= Cost A_1+ rent paid for leased land

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

Cost B_2= Cost B_1+ rental value of owned land and rent paid for leased land

Cost C_1= Cost B_1+imputed value of family labour

Cost C_2= Cost B_2+ imputed value of family labour

Cost C_3= Cost C_2+ 10% of cost C_2 (on account of managerial function performed by farmer)

Net returns were computed at different costs *i.e.*, Cost A_1,Cost A_2,Cost B_1,Cost B_2 ,Cost C_1, Cost C_2 and Cost C_3 by deducting respective costs from the gross returns.

Net income at A_1 = Gross returns - Cost 'A_1'

Net income at A_2 = Gross returns - Cost 'A_2'

Net income at B_1 = Gross returns - Cost 'B_1'

Net income at B_2 = Gross returns - Cost 'B_2'

Net income at C_1 = Gross returns - Cost 'C_1'

Net income at C_2 = Gross returns - Cost 'C_2'

Net income at C_3 = Gross returns - Cost 'C_3'

Results and Discussion

In the present study, the rent paid for leased land was zero, as none of the sample farmers took land on lease basis. Hence cost A_1 and cost A_2 are similar.

Per hectare cost of cultivation of banana for small farmer was ` 408788.70/- The major particular was rental value of land (30.87%) followed by hired human labour 21.52 per cent, planting material (tissue culture) 9.91 per cent, fertilizer 7.32 per cent and manures 4.58 per cent share to cost C3, respectively. The per cent share of Cost A2 and Cost B2 were 56.22 per cent and 88.82 per cent in total cost, respectively. The average yield obtained was 700.37 quintals, per quintal cost of production was worked out to ` 583.68.

In the case of medium farmer, the per hectare cost of cultivation *i.e.* Cost C3 was ` 415920.55/-. Among the different items of expenditure rental value of land accounted highest (31.19%) share in total cost C3 followed by hired human labour (22.26%), planting material (tissue culture) (9.47%), fertilizers (7.63%) and manures (4.00%) of the total cost. The average per hectare yield obtained by the medium farmer was 715.96 quintal.

In the case of large farmer, it was observed that per hectare expenditure of ` 441660.59/- was incurred in the cultivation of banana as Cost C3 by the cultivators. The major particulars of cost were rental value of land, hired human labour, planting material (tissue culture), fertilizer,

Table 1 : Cost of cultivation of banana (` per hectare).

S. no.	Particular	Small	Medium	Large	Overall
1	Hired Human Labour	87969.93 (21.52)	92590.43 (22.26)	96930.71 (21.95)	92887.562 (21.73)
2	Machine labour	7377.45 (1.80)	8072.34 (1.94)	8348.44 (1.89)	8016.41 (1.88)
3	Planting material (tissue culture)	40520.05 (9.91)	39376.47 (9.47)	37770.25 (8.55)	39232.42 (9.18)
4	Manures	18707.11 (4.58)	16657.45 (4.00)	19835.69 (4.49)	19835.69 (4.64)
5	Fertilizer	29912.97 (7.32)	31722.73 (7.63)	32012.01 (7.25)	31385.51 (7.34)
6	Irrigation charges	6618.87 (1.62)	6118.09 (1.47)	7795.33 (1.77)	6994.63 (1.64)
7	Plant Protection	10294.12 (2.52)	9127.66 (2.19)	8186.97 (1.85)	9502.12 (2.22)
8	Propping	12500 (3.06)	13613.83 (3.27)	15941.57 (3.61)	14364.43 (3.36)
9	Incidental charges	1403.19 (0.34)	1195.32 (0.29)	1223.27 (0.28)	1261.32 (0.30)
10	Repairing Charges	808.46 (0.20)	826.81 (0.20)	912.32 (0.21)	860.2 (0.20)

Table 1 continued...

Table 1 continued...

11	**Working Capital (1 to 10)**	216112.14 (52.87)	219301.12 (52.73)	228956.57 (51.84)	224340.3 (52.49)
12	Interest on working capital	12966.73 (3.17)	13158.07 (3.16)	13737.39 (3.11)	13460.42 (3.15)
13	Depreciation	716.35 (0.18)	785.03 (0.19)	858.79 (0.19)	800.22 (0.19)
14	Land Revenue	25 (0.01)	25 (0.01)	25 (0.01)	25 (0.01)
15	**Cost A_1 (Items 11 to 14)**	229820.22 (56.22)	233269.21 (56.09)	243577.75 (55.15)	238625.93 (55.84)
16	Rental value leased in land	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
17	**Cost A_2 (Items 15 to 16)**	229820.22 (56.22)	233269.21 (56.09)	243577.75 (55.15)	238625.93 (55.84)
18	Int. on Fix. Cap.@10%	7071.03 (1.73)	7475.38 (1.80)	9042.21 (2.05)	8069.57 (1.89)
19	**Cost B_1 (Items 15 and 18)**	236891.25 (57.95)	240744.59 (57.88)	252619.96 (57.20)	246695.51 (57.72)
20	Rental value of land	126186.19 (30.87)	129735.64 (31.19)	141655.83 (32.07)	134134.3 (31.39)
21	**Cost B_2 (Items 19 and 20)**	363077.45 (88.82)	370480.23 (89.07)	394275.79 (89.27)	380829.81 (89.11)
22	Family labour	8548.65 (2.09)	7629.36 (1.83)	7233.83 (1.64)	7691.24 (1.80)
23	**Cost C_1 (Items 19+22)**	245439.9 (60.04)	248373.96 (59.72)	259853.79 (58.84)	254386.74 (59.52)
24	**Cost C_2 (Items 21+22)**	371626.09 (90.91)	378109.59 (90.91)	401509.63 (90.91)	388521.04 (90.91)
25	10% cost of C_2 (Managerial cost)	37162.61 (9.09)	37810.96 (9.09)	40150.96 (9.09)	38852.1 (9.09)
26	**Cost "C_3"**	408788.7 (100)	415920.55 (100)	441660.59 (100)	427373.15 (100)
27	Yield	757267.16	778563.83	850084.99	804955.81
28	Cost of production per qtl.	583.68	580.93	575.35	581.48

Note: Figures in parentheses indicate percentages to the respective column totals.

and manures, which accounted 32.07, 21.95, 8.55, 7.25 and 4.49 per cent, respectively. The average per hectare yield was 767.63 quintal.

It was observed from the Table 1 that at overall level the cost of cultivation was ` 427373.15/- The major item contributed to total cost C3 were rental value of land (31.39%), followed by hired human labour (21.73%), planting material (tissue culture) (9.18%), fertilizer (7.34%), manures (4.64%) and propping (3.36%). The average main production at overall level was 734.97 q/ha and per quintal cost of production was worked out to ` 581.48.

Table 2 indicates that the per hectare production of banana for small, medium and large farmer was 700.37, 715.96 and 767.63 quintal, respectively. At overall level it was 734.97 q/ha.

Cost C_1 was higher in large size group due to lack of management of labour. Finding of Kumar and Nishad (2018) also support the present findings. The net return over cost C_1 was ` 511827.26, ` 530189.87 and `

Table 2 : Economics of banana cultivation (`/ha).

S. no.	Particulars	Small	Medium	Large	Overall
1	Main Produce (q/ha.)	700.37	715.96	767.63	734.97
2	Value of main produce	757267.16	778563.83	850084.99	804955.81
3	Gross Returns	757267.16	778563.83	850084.99	804955.81
4	**Cost of Cultivation at**				
	Cost "A_1"	229820.22	233269.21	243577.75	238625.93
	Cost "A_2"	229820.22	233269.21	243577.75	238625.93
	Cost "B_1"	236891.25	240744.59	252619.96	246695.51
	Cost "B_2"	363077.45	370480.23	394275.79	380829.81
	Cost "C_1"	245439.90	248373.96	259853.79	254386.74
	Cost "C_2"	371626.09	378109.59	401509.63	388521.04
	Cost "C_3"	408788.70	415920.55	441660.59	427373.15
5	**Net return at**				
	Cost "A_1"	527446.94	545294.62	606507.23	566329.87
	Cost "A_2"	527446.94	545294.62	606507.23	566329.87
	Cost "B_1"	520375.90	537819.24	597465.02	558260.30
	Cost "B_2"	394189.71	408083.60	455809.19	424126.00
	Cost "C_1"	511827.26	530189.87	590231.19	550569.07
	Cost "C_2"	385641.07	400454.24	448575.36	416434.77
	Cost "C_3"	348478.46	362643.28	408424.40	377582.66
6	**Benefit cost ratio at**				
	Cost "A_1"	3.30	3.34	3.49	3.37
	Cost "A_2"	3.30	3.34	3.49	3.37
	Cost "B_1"	3.20	3.23	3.37	3.26
	Cost "B_2"	2.09	2.10	2.16	2.11
	Cost "C_1"	3.09	3.13	3.27	3.16
	Cost "C_2"	2.04	2.06	2.12	2.07
	Cost "C_3"	**1.85**	**1.87**	**1.92**	**1.88**

590231.19 in small, medium and large size groups, respectively.

The findings revealed that in large farms the maximum cost of cultivation occurred which was ` 441660.59 followed by medium and small farms as ` 441660.59 and ` 408788.70 per ha respectively. In medium and small farms the gross income was ` 778563.83 and ` 757267.16, respectively. In case of large farms the gross income was higher, which was ` 850084.99. This finding is line with the findings of Kumar and Tegar (2021).

The input-output ratio at cost C_3 was 1.85, 1.87 and 1.92 for small, medium and large farmer respectively.

The average benefit cost ratio was 1.88. Almost similar results obtained by Mishra *et al*. (2000)

Conclusion

The average per hectare net return received by the small and large farmers at cost C3 was ` 348478.46, ` 362643.28 and ` 408424.40 respectively and at overall the net returns was ` 377582.66. This concludes that as the size of the land increases the average net returns over cost C3 also increases. The benefit cost ratio at cost C3 at overall was 1.88, which indicates that the banana cultivation was profitable.

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