

Economics of farming systems in Amravati district

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ABSTRACT

Attempt has been made to examine the economics of farming systems in Amravati district. The investigation was based on the primary data collected by personal interview method from 90 cultivators for the year 2008-2009. In case of crop farming, the per hectare cost of cultivation of cotton was observed highest on crop farming only (Rs.44402.83) and lowest on crop + poultry (Rs.29726.5). While in case of subsidiary enterprise per farm maintenance of buffaloes were highest on crop + dairy farms (Rs.207707.25) and lowest on crop + dairy + orange farms (Rs.190245.59). Per hectare net income from crop + poultry farms was highest (Rs.74581.27) and lowest was on crop farms (Rs.17426.23). The highest output-input ratio was on crop + orange farms (1:2.26) and lowest was observed on crop farms (1:1.43).

INTRODUCTION

With rising population, declining land-man ratio and increasing mechanization in farm operations, agriculture alone is not able to provide adequate income and employment in India. Integration of farm enterprises provides better livelihood in terms of increased food production, higher net income, improved productivity and reduced income imbalance. Introduction of appropriate farming systems has been proposed as one of the approaches to achieve better growth in agriculture and livelihood. The farming systems represents an appropriate combination of different farm enterprises viz., livestock, horticulture, forestry, poultry, piggery, fisheries and goat rearing etc.

Basically the farming systems in any locality is influenced by the ecological and socio-economic factors. The study of farming systems is important not only from the view point of planners but also from the view point of farmers also. By keeping in view its importance, the study was carried out to estimate costs, returns and farm business income of different farming systems. The specific objectives have been undertaken to study the economics of farming systems and to work out the share of each farming system in total farm income.

METHODOLOGY

In relation to selection of farms, five villages from Amravati tahsil was selected on

higher area basis under different farming systems. For the present study, the different farming systems were selected as follows: (1) crop farming only (2) crop + dairy (3) crop + poultry (4) crop + goat (5) crop + orange (6) crop + dairy + orange. Fifteen cultivators from each farming system were selected randomly. Thus, the study was based on 90 samples of cultivators. The primary data were collected by personal interview method for the year 2008-2009.

For evaluation, data were converted into per hectare basis. Statistical tools like arithmetic mean, percentage and ratios were used for estimating the results. Cost concepts like cost 'A', cost 'B' and cost 'C' were used for estimating the cost of cultivation of crops and orange. Cost concepts for dairy included variables costs like feed cost, labour charge, interest on working capital. Cost concepts for poultry unit included variable costs like chick value, feed costs, labour cost, electricity, water and medicinal charges. Cost concepts for goat rearing included variable cost like feed cost, water, electricity and medicinal charges. The fixed cost in dairy, poultry and goat unit includes interest on fixed capital and depreciation on fixed assets. Input-output ratio was worked out on the basis of cost incurred and returns obtained from each farming system.

RESULTS AND DISCUSSION

The study was undertaken to compare the

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economics of farming system. Cotton and soybean were common crops in each farming systems.

Cost of cultivation and net income from cotton crop (Rs.):

Per farm and per hectare cost and returns in cotton production were calculated and are presented in Table 1. It is revealed from Table 1, that per farm area under cotton was highest on crop + poultry (2.72 ha) and lowest on crop farming only (1.17 ha.). The per hectare cost of cultivation of cotton was highest in crop only farming Rs.44402.83 and lowest on crop + poultry farms Rs.29726.05. The total gross income obtained under cotton crop was highest on crop + orange farms Rs.163500 and lowest on crop only farms Rs.78520. The per hectare net income under cotton crop was highest on crop + orange farms Rs.35667.72 and lowest on crop only farms Rs.22708.28.

Cost of cultivation and net income from soybean crop (Rs.):

Per farm and per hectare cost and returns in soybean production were calculated and are presented in Table 2. It is observed from Table 2, that per farm area under soybean was highest on crop + goat farms (1.36 ha) and lowest on crop + dairy farms (0.65 ha). Per hectare cost of cultivation of soybean was highest on crop + dairy farms (Rs.31561.29) and lowest on crop + poultry farms (Rs.30954.80). The gross income obtained under soybean crop was highest on crop + goat farms (Rs.54400) and lowest on crop + dairy farms (Rs.25920). Per hectare net income under soybean crop was highest on crop + poultry farms (Rs.9045.19) and lowest on crop + dairy farm (Rs.7507.16).

Cost of cultivation and net income from orange orchard (Rs.):

Per farm and per hectare cost and returns in orange

Table 1 : Per farm and per hectare cost and returns in cotton production

Sr. No	Particulars	Crop only (1.17 ha)	Crop + Dairy (2.37 ha)	Crop + Poultry (2.72 ha)	Crop + Goat (1.38 ha)	Crop + Orange (2.40 ha)	Crop + Dairy + Orange (2.20 ha)
1.	Cost 'A'	28807.65	40863.12	44895.31	25795.41	42055.05	38087.89
2.	Cost 'B'	46648.11	64463.24	72525.31	41405.41	69897.71	60626.22
3.	Cost 'C'	47228.47	66353.24	73505.57	42031.87	70815.87	61436.48
4.	Supervision charges	4722.84	6635.32	7350.55	4203.18	7081.58	6143.64
5.	Cost of cultivation						
	Per farm	51951.31	72988.56	80856.12	46235.05	77897.45	67580.12
	Per hectare	44402.83	30796.86	29726.05	33503.65	32457.27	30718.23
6.	Gross income	78520	144000	162000	91500	163500	132000
7.	Net income						
	Per farm	26568.69	71011.44	81194.88	45264.95	85602.55	64419.88
	Per hectare	22708.28	29962.63	29851.05	32800.68	35667.72	29281.76

Table 2: Per farm and per hectare cost and returns in soybean production

Sr. No	Particulars	Crop only (0.72 ha)	Crop + Dairy (0.65 ha)	Crop + Poultry (0.88 ha)	Crop + Goat (1.36 ha)	Crop + Orange (0.80 ha)	Crop + Dairy + Orange (1.18 ha)
1.	Cost 'A'	14812.11	13368.86	17981.59	28237.37	16486.92	24560.47
2.	Cost 'B'	19968.51	18009.62	24283.85	37977.23	22216.25	33011.23
3.	Cost 'C'	20528.51	18649.86	24763.85	33957.89	22776.37	33851.33
4.	Supervision charges	2052.85	1864.98	2476.38	3895.78	2277.63	3385.13
5.	Cost of cultivation						
	Per farm	22581.36	20514.84	27240.23	42853.67	25054	37236.46
	Per hectare	31363	31561.29	30954.80	31510.05	31317.50	31556.32
6.	Gross income	28800	25920	35200	54400	32000	47200
7.	Net income						
	Per farm	6218.64	5405.16	7959.77	11546.33	6946	9963.54
	Per hectare	8637	7507.16	9045.19	8489.94	8682.50	8443.67

production were calculated and are presented in Table 3. It is revealed from Table 3, that per farm area under orange orchard was highest on crop + orange farms (2.19 ha) and lowest on crop + dairy + orange farms (2.15 ha). Per hectare cost of cultivation of orange orchard was highest on crop + dairy + orange farm (Rs.37573.15) and lowest on crop + orange farm (Rs.37173.54). The gross income obtained under orange orchard was highest on crop + orange farms (Rs.240000) and lowest on crop + dairy + orange farm (Rs.203850). Per hectare net income under orange orchard was highest on crop + orange farm (Rs.62826.45) and lowest on crop + dairy + orange farms (Rs.55085.93).

Table 3 : Per farm and per hectare cost and returns in orange production

Sr. No.	Particulars	Crop + Orange (2.19 ha)	Crop + Dairy + Orange (2.15 ha)
1.	Cost 'A'	34004.80	36194.90
2.	Cost 'B'	78779.24	72832.99
3.	Cost 'C'	81105.91	75146.32
4.	Supervision charges	8110.59	7514.63
5.	Cost of cultivation		
	Per farm	89216.50	82660.95
	Per hectare	37173.54	37573.15
6.	Gross income	240000	203850
7.	Net income		
	Per farm	157083.5	121189.05
	Per hectare	62826.45	55085.93

Maintenance cost and income from dairy (Buffalo) farms (Rs.):

Per farm maintenance cost and net income from dairy unit were calculated and are presented in Table 4. It is revealed from Table 4, that the per farm average number of buffaloes were 4.26 in crop + dairy farm and 4.13 in

Table 4 : Per farm maintenance cost and net income from dairy unit (buffalo)

Sr. No.	Particulars	Crop + Dairy (4.26)	Crop + Dairy + Orange (4.13)
1.	Variable cost	206562.91	188834.55
2.	Fixed cost	1144.34	1411.04
3.	Total cost	207707.25	190245.59
4.	Total milk production (Litre)	12848.32	11213.33
5.	Gross income	326008	284541.19
6.	Net income	118300.75	94296.32

crop + dairy + orange farms. Total cost of maintenance of buffaloes were highest on crop + dairy farms (Rs.207707.25) and lowest on crop + dairy + orange farms (Rs.190245.59). Gross income and net income both were highest in crop + dairy farms and lowest in crop + dairy + orange farms.

Maintenance cost and income from goat farm (Rs.):

Per farm maintenance cost and net income from goat farm were calculated and presented in Table 5. It can be revealed from Table 5, that number of goats were 70.13 in crop + goat farm. Total cost of maintenance of goats were Rs.49722.97. Gross income from goat farm was Rs.91437.08 and net income was Rs.41714.11.

Table 5 : Per farm maintenance cost and net income from goat farm

Sr. No.	Particulars	Crop + Goat
1.	Variable cost	48116.42
2.	Fixed cost	1606.55
3.	Total cost	49722.97
4.	No. of goats	70.13
5.	Gross income	91437.08
6.	Net income	41714.11

Maintenance cost and income from poultry farm (Broiler) (Rs.):

Per farm maintenance cost and net income from poultry farm were calculated and are presented in Table 6. It can be revealed from Table 6, that the average number of birds were 800 in crop + poultry farms. Total cost of maintenance was Rs.63120.71 per lot and Rs.378724.26 per year. Gross income was Rs.104540 per lot and Rs.627240 per year. Net income from poultry farm was Rs.41419.29 per lot and Rs.248515.74 per year.

Table 6 : Per farm maintenance cost and net income from poultry farm

Sr. No.	Particulars	Crop + Poultry
1.	Variable cost	62220.25
2.	Fixed cost	900.46
3.	Total cost/lot (2 months)	63120.71
4.	Total cost/year	378724.26
5.	Number of birds	800
6.	Gross income	
	Per lot	104540
	Per year	627240
7.	Net income	
	Per lot	41419.29
	Per year	248515.74

Table 7 : Output-input ratio under different farming systems

Sr. No.	Particulars	Crop only	Crop + Dairy	Crop + Poultry	Crop + Goat	Crop + Orange	Crop + Dairy + Orange
1.	Gross income (Rs.)						
	Crop	107320	169920	197200	145900	195500	179200
	Subsidiary enterprises	-	326008	627240	91437.08	240000	488391.91
	Total (Rs.)	107320	495928	824440	237337.08	435500	667591.91
2.	Total cost (Rs.)						
	Crop	74532.67	93503.4	108096.35	89088.72	102951.45	104816.58
	Subsidiary enterprises	-	207707.25	378724.26	49722.97	89216.50	272906.54
3.	Output-Input ratio	1.43	1.64	1.69	1.70	2.26	1.76

Output-input ratio under different farming systems:

While interpreting the output-input ratio, the gross income and total cost of crops like cotton, soybean, minor crops and subsidiary enterprises like poultry, dairy, goat and orange were taken into account (Table 7). The study of output-input ratio revealed that the highest output-input ratio was found in crop + orange (1:2.26) followed by crop + dairy + orange (1:1.76), crop + goat (1:1.70), crop + poultry (1:1.69), crop + dairy (1:1.64) and the lowest in crop farming (1:1.43). So this study clearly indicates that the output-input ratio was greater than unity in all farming systems. Cultivation of crops and subsidiary enterprises *i.e.* dairy, poultry, goat and orange orchard together were more profitable than cultivating crop only.

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