



Research Paper

Economics of farming systems in Amravati district

■ **D.S. NAGRE, D.H. ULEMALE AND S.M. SARAP**

See end of the paper for authors' affiliations

Correspondence to :

D.S. NAGRE

Shri Shivaji Agriculture College, AMRAVATI (M.S.) INDIA

Email : deva27may@gmail.com

ABSTRACT : The study had 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 2014-15. Three farming systems *i.e.* crop, crop + dairy, crop + horticulture were identified in the study area. In case of crop farming system, cost 'A', cost 'B' and cost 'C' was Rs. 37221.82 Rs. 51949.72 and Rs. 59873.06, respectively. In case of crop + dairy farming system, cost 'A', cost 'B' and cost 'C' was Rs. 49892.83, Rs. 72694.54 and Rs. 80219.31, respectively. In case of crop + horticulture farming system, cost 'A', cost 'B' and cost 'C' were Rs. 70693.16, Rs. 96311.48 and Rs. 104534.34, respectively. The highest B:C at cost 'A' was recorded in crop + dairy farming system *i.e.* 2.50, followed by crop + farming system *i.e.* 2.07, followed by crop + horticulture (orange) farming systems *i.e.* 1.99 The B:C was observed highest in case of crop + dairy farming system at cost 'C' *i.e.* 1.56, followed by crop + horticulture farming systems *i.e.* 1.35, followed by crop farming system *i.e.* 1.29. Hence, crop + dairy farming system was profitable than other two farming systems.

KEY WORDS: Economics of farming, Dairy farming system, Horticulture farming

Paper History :

Received : 01.10.2016;

Revised : 30.01.2017;

Accepted : 10.02.2017

HOW TO CITE THIS PAPER : Nagre, D.S., Ulemale, D.H. and Sarap, S.M. (2017). Economics of farming systems in Amravati district. *Internat. Res. J. Agric. Eco. & Stat.*, 8 (1) : 133-137, DOI : 10.15740/HAS/IRJAES/8.1/133-137.

INTRODUCTION :

Farming system is an integrated set of activities that farmers perform in their farms under their resources and circumstances to maximize the productivity and net farm income on a sustainable basis. Unfortunately the subsistence nature of agriculture, inadequate investment in agriculture and lack of interest in farming often results in poor return from farming. Misallocation or inefficient utilization of scarce resources and improper enterprise mix hinders achieving desired results from farm business. It is important for the resource poor farmer to identify suitable enterprises, which can be efficiently incorporated in a farm plan depending on availability of

resources in a farm family. In general a farmer is always confronted with the problem of selecting proper enterprise mix, which can provide maximum possible return and create adequate employment opportunities beside utilization of other available resources in the farm. The farming system represents an appropriate combination of different farm enterprises *viz.*, cropping systems, livestock, horticulture, forestry, poultry, piggery, fisheries and goat rearing etc., and were the means available to the farmer to raise their profitability. All components of farming systems are interrelated to each other.

MATERIALS AND METHODS :

For the collection of data, the Amravati tehsil was selected on higher basis under different farming systems. For the present study in Amravati tehsil of Amravati district, five villages were selected. Three farming systems were selected as follows, 1) crop farming system 2) crop + dairy farming 3) crop + horticulture farming system. Thirty cultivators of each farming system were selected randomly. Thus total 90 cultivators selected for the study. The primary data were selected by personal interview method for the year 2014-15. For evaluation 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. Cost concepts for dairy included variable costs like feed cost, labour charges and interest on working capital. Cost concept for orange like cost 'A', cost 'B', cost 'C' and establishment cost for five year.

RESULTS AND DATA ANALYSIS :

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

Selection of farming systems :

In Amravati district the different existing farming systems were indentify *i.e.* crop farming, crop +dairy farming, crop + horticulture farming system, crop + dairy + horticulture farming system, crop + goat farming system, crop + poultry farming system, crop + sericulture farming system. Out of that following three systems were selected for the present study presented in Table 1.

From Table 1 it was revealed that, 30 farmers were selected for crop farming system, 30 farmers of crop + Dairy farming system and 30 farmers of crop + Horticulture (Orange) farming system were studied.

Data regarding item wise expenditure of farming systems are presented in Table 2.

In case of crop farming system, cost 'A', cost 'B' and cost 'C' was Rs. 37221.82, Rs. 51949.72 and Rs. 59873.06, respectively. The gross returns were Rs. 77026.87. In case of crop + dairy farming system, cost 'A', cost 'B' and cost 'C' was Rs. 49892.83, Rs. 72694.54 and 80219.31, respectively. The gross returns were Rs. 124970.50. The percentage of secondary activity was 10.90 per cent in crop + dairy farming system. The percentage share of hired human labour, manure and seed were the 15.79 13.28 and 5.09 per cent in crop + dairy farming system.

In case of crop + horticulture (orange) farming system cost 'A', cost 'B' and cost 'C' were Rs. 70693.16, Rs. 96311.48 and Rs. 104534.34, respectively. The gross returns were Rs. 140928.02. The percentage share of hired human labour, manure and total bullock labour were 21.03, 16.18 and 4.36 per cent, respectively. Among the farming systems the highest share of fertilizers *i.e.* 2.77 per cent was observed in crop farming system with highest share of seeds *i.e.* 6.35 per cent in crop farming system.

Cost and returns of farming systems :

Studied on economics of various farming system helps to understand the profitability and selection of appropriate systems on the farm. The data on cost and returns on various farming systems are presented in Table 3.

It was revealed from the Table 3 that, in crop farming system average gross returns worked out Rs. 77026.87. The net returns obtained at various costs were Rs. 39805.05 at cost 'A', Rs. 25077.14 at cost 'B' and Rs. 17153.81 at cost 'C'. In crop + dairy farming system average gross returns worked out Rs. 124970.50. The net returns obtained at various costs were Rs. 75077.63 at cost 'A', Rs. 52275.91 at cost 'B' and Rs. 44751.15 at cost 'C'. In crop + horticulture (orange) farming system average gross returns worked out Rs.140928.02 The net returns obtained at various cost were Rs. 70234.86 at cost 'A', Rs. 44616.54 at cost 'B' and Rs. 36393.68 at cost 'C' The highest B:C at cost 'A' was recorded in crop + dairy farming system *i.e.* 2.50 followed

Table 1 : Selected farming systems

Sr. No.	Name of system	No. of farmers
1.	Crop farming system	30
2.	Crop + Dairy farming system (Buffalo)	30
3.	Crop+ Horticulture (orange) farming system	30
4.	Total	90

by crop farming system *i.e.* 2.07. The B:C at cost 'C' was recorded highest in crop + dairy farming system *i.e.* 1.56 followed by crop + horticulture (orange) farming system *i.e.* 1.35. The B:C which is an indicator of economic efficiency in farming system. Among the

farming systems, the B:C was observed highest at cost 'C' *i.e.* 1.56 in case of crop + dairy farming system. Hence crop + dairy farming system was profitable than other two farming systems. The hypothesis is significant here that, crop + dairy farming system is a profitable

Table 2 The item wise expenditure of different farming systems (Rs./ha)

Sr. No.	Particulars	Farming systems		
		Crop	Crop+ Dairy	Crop+Horticulture
1.	Hired human labour	10801.67 (18.04)	12666.67 (15.79)	21990.37 (21.04)
2.	Bullock labour	3435.00 (5.57)	3693.67 (4.6)	4258.67 (4.07)
3.	Machinery charges	1867.00 (3.12)	2269.64 (2.83)	2036.83 (1.95)
4.	Seeds	3806.96 (6.36)	4085.58 (5.09)	3982.71 (3.81)
5.	Manure	11500.00 (19.21)	10658.67 (13.29)	16919.33 (16.19)
6.	Fertilizer	1660.75 (2.77)	2156.03 (2.69)	1731.83 (1.66)
7.	Irrigation	668.33 (1.12)	870.00 (1.08)	3412.67 (3.26)
8.	Secondary activity	-	8644.26 (10.9)	-
9.	Plant protection	1047.33 (1.75)	1322.47 (1.65)	7279.32 (6.96)
10.	Repairing charges	139.55 (0.23)	171.67 (0.21)	333.28 (0.32)
11.	Working capital	34927.05 (58.34)	46859.93 (58.41)	62271.44 (59.57)
12.	Depreciation	93.32 (0.16)	108.87 (0.14)	155.14 (0.15)
13.	Land revenue	105.83 (0.18)	112.43 (0.14)	171.29 (0.16)
14.	Interest on working capital	2095.62 (3.05)	2811.60 (3.5)	8095.29 (7.74)
15.	Cost 'A'	37221.82 (62.17)	49892.83 (62.2)	70693.16 (67.63)
16.	Rental value of land =1/6 th of gross produce -	12731.98 (21.26)	20715.98 (25.82)	23316.72 (22.31)
17.	Interest on fixed capital 10%	1995.92 (3.33)	2085.74 (2.6)	2301.6 (2.2)
18.	Cost 'B'	51949.72 (86.77)	72694.54 (90.62)	96311.48 (92.13)
19.	Family labour charges	7923.33 (13.23)	7524.77 (9.38)	8222.86 (7.87)
20.	Cost 'C'	59873.06 (100)	80219.31 (100)	104534.34 (100)
	Crop	77026.87	99974.92	106528.02
	Milch	-	24995.54	-
	Orange	-	-	34400
21	Value of total produce	77026.87	124970.5	140928.02

(Figures in the parentheses indicates the percentages to cost 'C')

Table 3 : Cost and returns of farming systems

Sr. No	Particulars	Crop	Crop + Dairy	Crop + Horticulture
1.	Cost 'A'	37221.82	49892.83	70693.16
2.	Cost 'B'	51949.72	72694.54	96311.48
3.	Cost 'C'	59873.06	80219.31	104534.34
4.	Gross returns	77026.87	124970.50	140928.02
5.	Cost of production/Qtl	2673.64	2997.00	2522.32
6.	Net return			
	Cost 'A'	39805.05	75077.63	70234.86
	Cost 'B'	25077.14	52275.91	44616.54
	Cost 'C'	17153.81	44751.15	36393.68
7.	B:C			
	Cost 'A'	2.07	2.50	1.99
	Cost 'B'	1.48	1.72	1.46
	Cost 'C'	1.29	1.56	1.35

Table 4 : Constraints faced by selected farmers

Sr. No	Particulars	Farming systems		
		Crop	Crop+ dairy	Crop+ Horticulture
1.	Lack of adoption about farming systems	25 (27.77)	21 (23.33)	19 (21.11)
2.	High cost of fertilizers	20 (22.22)	29 (32.22)	25 (27.77)
3.	Unavailability of labour	23 (25.55)	24 (27.77)	29(32.22)
4.	Unavailability of good quality of seeds	19 (21.11)	23 (26.66)	26 (28.88)
5.	Lack of irrigation facility	22 (24.44)	28 (31.11)	27 (30.00)

venture.

Constraints faced by selected farmers :

All the sample farmers were interviewed for the problems they were faced while handling the farming systems. The information regarding the important problems faced by the farmers are presented in Table 4.

From Table 4 it was revealed that, in crop farming system, there was major problem of lack of adoption about farming systems *i.e.* 27.77 per cent followed by unavailability of labour 25.55 followed by high cost of fertilizers 22.22 per cent. The problem of lack of irrigation facility and unavailability of good quality of seeds were 24.44 and 21.11 per cent. In crop+ dairy farming system, there was a major problem of high cost of fertilizers *i.e.* (32.22 %) followed by lack of irrigation facility 31.11 per cent. In case of crop +horticulture (orange) farming system, there was a serious problem unavailability of labour 32.22 per cent followed by lack of irrigation facility *i.e.* 30.00 per cent.

Conclusion :

On the basis of results obtained from the study, following conclusions are drawn. The following three selected farming systems were identified in the study area *viz.*, crop farming system , crop+ dairy farming system, crop +horticulture farming system. At overall level, the average land holding was 2.40 hectares and the gross cropped area was 3.25 hectares. Among the farming systems, the highest cropping intensity observed. In Crop + horticulture farming system was 162.91 per cent followed by crop+ farming system was 147.12 per cent followed by crop + dairy farming system was 145.33 per cent. In case of crop farming system, cost 'A', cost 'B' and cost 'C' was Rs. 37221.82, Rs.51949.72 and Rs. 59873.06, respectively. The gross returns were Rs. 77026.87. In case of crop + dairy farming system, cost 'A', cost 'B' and cost 'C' was Rs. 49892.83, Rs. 72694.54 and Rs. 80219.31, respectively. The gross returns were

Rs. 124970.50. In case of crop + horticulture farming system, cost 'A', cost 'B' and cost 'C' were Rs. 70693.16 Rs. 96311.48 and Rs. 104534.34, respectively. The gross returns were Rs. 140928.02. The highest B:C at cost 'A' was recorded in crop + dairy farming system *i.e.* 2.50 followed by crop+ farming system *i.e.* 2.07 Among the different farming systems, the B:C was observed highest in case of crop + dairy farming system at cost 'C' *i.e.* 1.56. Hence, crop + dairy farming system was profitable than other farming systems. In crop farming system, there was major problem of lack of adoption about farming systems *i.e.* 27.77 per cent. In crop+ dairy farming system, there was a major problem of high cost of fertilizers *i.e.* 32.22 per cent. In case of crop + horticulture farming system, there was a serious problem of unavailability of labour 32.22 per cent.

Authors' affiliations:

D.H. ULEMALE, Department of Agricultural Economics and Statistics, Shri Shivaji Agriculture College, AMRAVATI (M.S.) INDIA

S.M. SARAP, Shri Shivaji Agriculture College, AMRAVATI (M.S.) INDIA

LITERATURE CITED :

- Bhosale, S.S. and Gawande, B.B. (1991). Relative economic of different farming systems in western Maharashtra. *Indian J. Agril. Econ.*, **46**(3) : 474-475.
- Gadre, N.A. (1994) . Costs and returns of dairy enterprise in on adjunct to crop husbandary in vaidarbha. *Indian J. Agric. Econ.*, **50** (3) : 368-369.
- Gosain, K.D. (2007). Diversification in agriculture through horticultural crops- A study of Bilaspur district of Himachal Pradesh. *Asian J. Hort.*, **2**(2) : 288-290.
- Gupta, D.C., Mann, A.J.S. and Singh, V.K. (2007). Major livestock crop production systems and the socio-economic condition of the farmers in different agro-climatic regions of Rajasthan. *Agric. Situ. India*, **13-14** : 585-591
- Hadole, S.M. and Tawade, N.D. (2009). Economics of farming

- system in Ratangiri district of Konkan region. *Agric. Update*, **4** (3&4) : 356-361.
- Ramrao, W.Y., Tiwari, S.P. and Singh, P. (2005). Crop livestock integrated farming system for augmenting socio-economic status of small holders tribal farmers of Chhattisgarh in central India. *Livestock Res. Rural Dept.*, **17** (8) : 2005.
- Sachinkumar, T.N., Basavaraja, H., Kunnal, L.B., Kulkarni, G.N., Mahajanashetty, S.B., Hunshal, C.S. and Hosamani, S.V. (2012). Economics of farming systems in northern transitional zone of Karnataka. *Karnataka J. Agric. Sci.*, **25** (3): 350-358.
- Sree Laxmi K., Kumar, K.N., Rao, B.B. and Rosaiah, B. (2007). Farming systems approach in the north coastal zone of Andhra Pradesh. *Agril. Situ. Indian*, **13-14** :17-24.
- Tayade, N.P., Ulemale, D.H. and Kulkarni, K.P. (2010). Economics of farming systems in Amravati district. *Agric. Update*, **5**(3&4): 485-488.
- Torane, S.R., Naik, B.K., Kulkarni, V.S. and Talathi, J.M. (2011). Farming systems diversification in north Konkan region of Maharashtra — An economic analysis. *Agril. Econ. Res. Review*, **24** (1) : 91-98.

