



# Comparative Economics of Different Farming Systems in Himachal Pradesh

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## ABSTRACT

The farming systems represent integration of farm enterprises such as cropping systems, animal husbandry, fisheries, forestry, horticulture, etc. for optimal utilization of resources by the farmers. Farming systems of households in Solan, Shimla and Kangra districts of Himachal Pradesh were analyzed based on the primary data collected through a sample of 92 farmers by using two-stage stratified random sampling technique during the year 2016-17. About 63.03 per cent of the total farmers were found to be marginal, 23.91 per cent small farmers and 13.04 per cent other farmers. A total of nine farming systems including some non-farm components were identified. The average income of marginal farmers was highest in Agri+Wages type of system whereas average income of small and other farmers was highest from Horti+ Shop type of system. Across the categories, other farmers earned more than marginal and small farmers from the same patch of land. This gap was because of non-availability of credit to marginal and small farmers.

**Key Words:** Components, Expenditure, Farming system, Income.

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## INTRODUCTION

In India, farming systems has occupied an important place in the conduct of agricultural and rural development. With increasing population, declining land-man ratio and increasing mechanization in farm operations, agriculture alone is not able to provide adequate income and employment to households in India. Integration of farm enterprises with non-farm components provides better livelihood in terms of increased food production, higher net income, improved productivity, and reduced income imbalance between agricultural labourer and urban factory worker. Introduction of appropriate farming systems has been proposed as one of the approaches to achieve better growth in agriculture and livelihood (Singh *et al*, 2009). Increase in non-farm employment has also become essential for improving income and living standard of rural population (Kumar and Singh, 2003).

The farming system is a multi-disciplinary whole farm approach, which is the need of time and is very effective in solving the problems of small

and marginal farmers. It aims at increasing income and employment from smallholding by integrating various farm & non farm enterprises and recycling crop residues and by products within the farm itself. Agriculture continues to be the main livelihood option of rural households in Himachal Pradesh. The agro-climatic conditions in the state are also congenial for the production of various cash crops like off-season vegetables, fruits, flowers, medicinal & aromatic plants and other crops. Of late due to several economic and non-economic factors, farming in the state appears to have become non-viable and the income earned is hardly sufficient to maintain the farm family. With this background, the present study was conducted to identify various farming systems that the farmers are following to make livelihoods, and also compute the returns from these systems across different farm size categories in the state of Himachal Pradesh.

## MATERIALS AND METHODS

According to the Himachal Pradesh State Agricultural Marketing Board, the wheat-maize-

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**Table 1. Classification of farmers as per land holding in different districts**

Sr. No.	District	Marginal	Small	Other	Total
1.	Kangra	29(90.60)	3(9.40)	-	32(100.0)
2.	Solan	18(60.00)	7(23.33)	5(16.67)	30(100.0)
3.	Shimla	11(36.66)	12(40.00)	7(23.34)	30(100.0)
4.	Total	58(63.03)	22(23.93)	12(13.04)	92(100.0)

paddy farming system was mainly prevalent in Kangra district, whereas floriculture-vegetable cultivation is more practiced by the farmers of Solan district. In Shimla district the farmers grow more of horticultural crops. Dairy farming is also dominant in Kangra and Solan districts. By considering the prevalence of different farming system components, Kangra, Shimla and Solan districts were selected purposively for the present study. The study was based on primary data. A sample of 92 farmers (23 from Horti+ Dairy, 20 from Agri+ Horti, 6 from Agri, 10 from Horti, 10 from Agri+ Dairy, 4 from Agri+ Wages, 4 from Horti+ Wages, 7 from Agri+ Shops and 8 from Horti+ Shops) was conducted by using two stage stratified random sampling technique. Further, the results were interpreted

by using percentage, ratios, weighted mean and income differential. The weighted mean and income differential were worked out by using appropriate formula:

, where,  $w$  = weights and  $x$  = value

### RESULTS AND DISCUSSION

About 69 per cent of the main workers are engaged in agricultural pursuits and about 88 per cent land holdings are marginal and small (Anon, 2016). Regarding the classification of total sample farms 63.03 per cent were marginal (<1 ha area), followed by small (23.93 %) having 1-2 ha area and others (13.04 %) having more than 2 ha area. In Kangra and Solan district, a majority of the farmers

**Table 2. Categorisation of farmers according to their farm system components**

Sr. No.	Farming System	Kangra	Solan	Shimla	Total
1.	Horti+ Allied	7(21.82)	15(50.00)	1(3.33)	23(25.02)
2.	Agri+ Horti	1(3.13)	-	19(63.33)	20(21.74)
3.	Agri (only)	3(9.39)	-	3(10.00)	6(6.53)
4.	Horti (only)	1(3.13)	5(16.66)	4(13.35)	10(10.86)
5.	Agri+Allied	10(31.26)	-	-	10(10.86)
6.	Agri+Wages	3(9.39)	-	1(3.33)	4(4.34)
7.	Horti+Wages	1(3.13)	2(6.66)	1(3.33)	4(4.34)
8.	Agri+Shop	6(18.75)	-	1(3.33)	7(7.62)
9.	Horti+Shop	-	8(26.68)	-	8(8.69)
10.	Total	32(100.0)	30(100.0)	30(100.0)	92(100.0)

Figure in parenthesis represents percentage of the total

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were marginal (90.60 % and 60.00%, respectively) whereas in Shimla district the small farmers were more in number (40.00 %) (Table1).

#### Farming Systems

A total of nine farming systems being followed by the farmers were identified in the three study districts (Table 2). A perusal of the data reveals that the most of the farmers (63.33 %) of Shimla district were practicing Agri+Horti based farming whereas in Solan district Horti+Allied farming system was followed by 50.00 % of the sample farmers. On the other hand, in Kangra district Agri+Allied (31.26 %) and Horti and Allied (21.82 %) were the dominant systems adopted by the farmers.

The present study revealed that the maximum average expenditure of marginal farmers was observed in the system of Agri+Horti (Rs 2.19 lakh) followed by Horticulture only (Rs 0.83 lakh) and Agri+Shop (Rs.0.62 lakh) type of systems. Likewise, in small farmers the maximum average expenditure occurred in Horti+Shop type of system (Rs 3.92 lakh) followed by Agri+Horti (Rs 1.30 lakh) system and the maximum average expenditure of other farmers was also observed in (Horti+Shop) type of system (Rs.1.75 lakh) followed by Agri+Horti (Rs 0.71 lakh) type of system. It was also worked out that average expenditure in different farm system

components of small farms was more (Rs 0.33 lakh) as compared to other and marginal farms Rs 0.22 lakh and Rs 0.10 lakh, respectively (Table 3).

The average annual income of marginal farmers was highest (Rs 3.96 lakh) in Agri+ Wages farming system followed by Horti+Wages (Rs 3.08 lakh) and horticulture only (Rs 2.50 lakh). The marginal farmer earned least (Rs 0.91 lakh) in Agri+ Allied type of farming system. In case of the small farmers, average annual income was highest at Rs 5.72 lakh from Horti+Shop activities type of system followed by Agri+ Horti at Rs 4.08 lakh. The small farmers earned least (Rs 0.87 lakh) from Horti+ Allied type of farm component system. In case of other farmers having land more than 2 ha, the average income was highest (Rs 6.06 lakh) from Horti+ Shop followed by Agri+ Horti (Rs 4.23 lakh) type of system. The weighted mean income was observed more in other farms (3.50) followed by small (2.63) and marginal farms (1.57). The income differential of small farmers with respect to marginal farmers was 0.6774. In other words, small farmers were able to earn 67 per cent more than marginal farmers from the same level of assets whereas income differential of other farmers to marginal farmers was 1.2344 and that of other farmers to small farmers was 0.3319.

**Table 3. Average annual expenditure in different farm system components. (Rs.lakh)**

Sr. No.	Particulars	Marginal	Small	Other
1.	Horti+ Allied	0.28	0.38	0.20
2.	Agri+ Horti	2.19	1.30	0.71
3.	Agri(only)	0.33	0.42	-
4.	Horti(only)	0.83	0.71	-
5.	Agri+ Allied	0.08	0.14	-
6.	Agri+ Wages	0.56	-	-
7.	Horti+ Wages	0.04	0.38	-
8.	Agri+ Shop	0.62	-	-
9.	Horti+ Shop	0.61	3.92	1.75
10.	Average (all systems)	0.10	0.33	0.22

**Table 4. Average income in different farming system components. ( Rs. lakh)**

Sr. No.	Particulars	Marginal	Small	Other
1.	Horti+ Allied	0.68	0.87	1.14
2.	Agri+ Horti	2.29	4.08	4.23
3.	Agri(only)	1.72	2.59	-
4.	Horti(only)	2.50	2.32	-
5.	Agri+Allied	0.91	1.03	-
6.	Agri+Wages	3.96	-	-
7.	Horti+Wages	3.08	2.93	-
8.	Agri+Shop	1.01	-	-
9.	Horti+Shop	1.18	5.72	6.06
10.	Total	0.30	0.89	0.95
11.	Average income (all systems)	1.57	2.63	3.50

### CONCLUSION

The profitability of farming systems is well known to the world and can be considered for its wide spread adoption by small and marginal farmers. The average annual income of marginal farmers was observed highest in Agri+ Wages farming system and lowest in Horti-Allied type of system due of lack of technical know-how. Whereas, in case of the small farmers, average annual income was highest from Horti+Shop activities and in case of other farmers having land more than 2 hectares, the average income was highest from Horti+ Shop type of system. Thus, the study revealed that farming system along with other farm components gives remunerative returns to the farmers. Across the categories, other farmers were earning more than marginal and small farmers from the same patch of land. This gap was because

of non-availability of credit to marginal and small farmers. As other farmers were producing in bulk, and getting more income by marketing the produce while marginal and small farmers were facing the problem of marketing as their produce was less. Most of the marginal and small farmers sold the produce to local traders at a low price.

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