

# ECONOMICS OF TEMPERATE FRUITS PRODUCTION IN HIMACHAL PRADESH - A STUDY OF DISTRICT SHIMLA

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*Agriculture contribution to the economic growth is dependent on the levels of income and the resultant surpluses in agriculture sector. But the level of farm income is determined by higher productivity per hectare which also shows the relative higher efficiency of resources used in the production process. Therefore, farming works on the principle of resource allocation which when combined in proper proportion can help to achieve higher level of efficiency in farm business however use of any resource beyond its capacity can result in its rapid depletion therefore may result in high cost of production and lower the efficiency of agriculture. The study is revealing that the Cost A1, Cost A2, Cost B and Cost C are less on marginal farms however returns is concern it looks good in small farms in most of the crops production and possible reason for the same can be resource allocation and utilization which specifies the cost and return picture of the different farm holdings hence leads us to the rational that marginal and medium farmers are not managing their resources properly therefore not receiving optimum returns.*

**Keywords:** Explicit cost, Implicit cost, Imputed Value, Economics of Scale, Resource Optimization

## INTRODUCTION

Farm production is the resultant of transformation of various resources such as human labor, bullock power, mechanical power, water for irrigation, seeds, manures and fertilizers, insecticides and pesticides and cultivation practices etc. As these all factor inputs are costly and scarce, the case for their efficient use is self-evident. Moreover, farm resource endowment and extent of their use on farms has a direct bearing in determining the overall level of crop production.

A number of studies have already been conducted by Sharma *et al.* (1987), Tewari *et al.* (1987), Bhat and Dhar (1992), Chidambaram *et al.* (2005) regarding the input-output relations in agriculture production which therefore reveals the input structure and cost of cultivation of different size classes with its impact on the production and farm returns. Therefore, it is necessary to study the extent and magnitude of various farm endowments prevailing on farms in different size classes in the study area. An attempt had also been made to know how much cost a farmer is incurring on raising the field crops and what is the level of returns from the cultivation of these crops for which following objectives have been framed:

- To analyse the socio-economic features of sample households.
- To study the resource use pattern & economics of temperate fruits in the study area.
- To identify the problems of farmers & to suggest measures for increasing the production of temperate fruits.

which will describe the extent of resource utilization and the estimates of cost and returns from the cultivation of various field crops viz, Apple, Almonds, Cherry, Pears and Apricot. and will reveal the resource efficiency and economics of scale picture of the different farmers of study area and is of a great importance to make practical recommendations for planning aimed at better allocation of existing resources.

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## MATERIALS AND METHODS

In order to found the answers of the framed objectives the present study was conducted in Jubbal & Kotkhai Block of district Shimla which was divided into 10 different panchayats and thereafter two villages from every panchayat with 10 farming households of different categories (Marginal, Small & Medium) from each village has been randomly selected. However, the study is primarily based on primary data hence personal interview, face-to face association with farmer respondents and observation method has been adopted to collect the relevant information and therefore analyse with the help of the simple tabular analysis based on means, percentage and frequency etc. The net returns from fruit crop was worked out with the help of tabular analysis i.e., by deducting the Total cost (Cost A<sub>1</sub>, Cost A<sub>2</sub>, Cost B and Cost C) with Total value of output (Gross value of output (Main+ByProduct)) of fruit crop at prevailing prices in the study area.

## RESULTS AND DISCUSSION

### Temperate Fruits Cost Analysis

Farm profits or resource efficiency is associated with the cost of cultivation therefore it becomes essential to study the input structure and cost of cultivation on farms in different size classes and have an idea about the share of various input factors in total cost. In the present study, most of the farmers buy all the factor inputs and produce output exclusively to market for making little profit however many inputs are not actually paid for and are imputed on the basis of market price of input factors concerned therefore determining the cost structure of various farms, Cost A<sub>1</sub>, A<sub>2</sub>, B, C and estimating the same with imputing the value of all owned factors on the basis of prevailing market price to reach at cost (C). It is attributable Table 1.1 shows the breakup of costs into various costs on different farm size groups. As evident from the table that overall cost of cultivation of all crops is estimated to Rs.440715.79. It can be further seen that the per hectare cost of cultivation of Almonds is less and Apple is highest of their counterparts viz., Cheery, Pears and Apricot. The per hectare cost of these crops is worked out Rs.474379.69 for Apple, Rs.227917.91 for Almonds, Rs.234823.21 for Cheery, Rs.312961.28 for Pears and Rs.228932.62 for Apricot. However, in respect of cost A<sub>1</sub> which comprises of all cash and kind expenses, per hectare cost of Apple cultivation is more than Almonds, Cheery, Pears and Apricot. The cost A<sub>1</sub> for Apple crop is Rs.185681.29, Rs.143444.55 for Almonds, Rs.129208.69 for Cheery, Rs.1598084.76 for Pears and Rs.129366.53 for Apricot.

Coming to the average cost of cultivation of these crops in different farm size groups, it can be seen that there is an increasing tendency in Cheery and Apricot crops with increase in farm size but in case of Apple, Almonds and Pears the cost is erect. It is also significant to note that per hectare cost of cultivation of Apple crop is more on all the farm size as compare to its counterpart's viz., Almonds, Cheery, Pears and Apricot. It has been cleared in the overall analysis in terms of high yield reflected through more rental value of owned land. Per hectare cost of cultivation of all the crops is estimated as Rs.346380.85 for marginal, Rs.442235.68 for small and Rs.447862.39 for medium farms. The substantive point that has emerged from a close examination of the per hectare cost of cultivation of different crops between farm sizes is that all the cost concepts viz., Cost A<sub>1</sub>, Cost A<sub>2</sub>, Cost B and Cost C are less on marginal farms as compare to small and medium farms. Also, there exists a big cost gap between marginal and small or medium farms. The explanation of this point lies in that high dose of farm inputs reflects mainly in medium or small holdings as compare to marginal holding.

**Table 1 : Crop Wise Breakup of the Total Cost into Various Costs-A Comparative Picture**  
(Rs. Per Hectare)

Sr. No.	Crops	Return/Cost	Marginal Farmers	Small Farmers	Medium Farmers	Overall Farmers
1.	Apple	<b>Gross Returns</b>	591114.57	765562.02	741062.19	737306.97
		Cost A1	136814.89	184036.51	189602.12	185681.29
		Cost A2	136814.89	184036.51	189602.12	185681.29
		Cost B	346539.36	477957.18	479082.80	471591.18
		Cost C	387597.67	480194.06	479242.95	474379.69
2.	Almonds	<b>Gross Returns</b>	119768.82	159695.79	151535.00	150331.26
		Cost A1	92464.99	153326.33	147380.21	143444.55
		Cost A2	92464.99	153326.33	147380.21	143444.55
		Cost B	138511.87	231146.90	229184.87	221273.93
		Cost C	193923.64	237857.42	229714.28	227917.91
3.	Cheery	<b>Gross Returns</b>	120253.75	129500.30	164409.19	149299.59
		Cost A1	83132.18	130472.44	138607.68	129208.69
		Cost A2	83132.18	130472.44	138607.68	129208.69
		Cost B	129956.81	203766.46	254725.10	224823.21
		Cost C	190519.31	209493.73	255698.08	234823.21
4.	Pears	<b>Gross Returns</b>	215856.11	215522.12	191248.18	196205.12
		Cost A1	105696.39	163635.14	161728.44	159084.76
		Cost A2	105696.39	163635.14	161728.44	159084.76
		Cost B	218224.33	337585.01	309300.07	308810.12
		Cost C	278391.01	342835.01	309562.05	312961.28
5.	Apricot	<b>Gross Returns</b>	90422.94	125134.55	142827.70	130934.52
		Cost A1	81904.41	134603.35	137934.71	129366.53
		Cost A2	81904.41	134603.35	137934.71	129366.53
		Cost B	119147.53	206587.64	247577.69	219061.65
		Cost C	176853.41	212314.91	248307.42	228932.62
6.	All	<b>Gross Returns</b>	1137416.2	1395414.77	1391082.26	1364077.45
		Cost A1	126139.66	177777.60	183803.18	179217.01
		Cost A2	126139.66	177777.60	183803.18	179217.01
		Cost B	301257.13	439379.17	447652.81	437314.14
		Cost C	346380.85	442235.68	447862.39	440715.79

**Note:** Gross returns or gross revenue i.e. gross value of output (main+by product) at farm harvest prices from respective crop enterprise.

**Cost A1:** hired human labour, hired machinery charges, value of owned machine labor, value of seeds (both purchased and produced), value of insecticides and pesticides, value of manures (purchased and owned), value of fertilizers, depreciation of implements and farm buildings, Tractor/Machinery chargers (Hired) irrigation charges, land revenue, taxes, interest on working capital and miscellaneous expenses etc

**Cost A2:** Cost A<sub>1</sub> + Rent paid for leased in land.

**Cost B:** Cost A<sub>2</sub>+ Imputed rental value of owned land less land revenue paid there on imputed interest on owned fixed capital (excluding land).

**Cost C:** Cost B + Imputed value of family labor.

## Temperate Fruits Gross Returns

Gross return is concern it is the sum of gross value of output (main plus by product) of each fruit crop evaluated at harvest prices in the reference yearir respective of being consumed, sold or maintained in the stock therefore Table1.1 provides gross returns per cropped hectare in various temperate crops on farms of different size groups. The gross revenues are high in case of small farms when it is case of Apple, Almonds and Pears crop production, however in case of Apricot and Cheery production medium farms gross returns are more. It can also be noticed from the data given in the table that gross returns are low on marginal holdings as compare to their counter parts. It points out the fact that the land is not intensively utilized or there is no provision of proper management of the resources. By taking overall position, thegross revenue for the Apple, Almonds, Cheery, Pears and Apricot crop is worked out to be Rs.737306.97, Rs.150331.26, Rs. 149299.59, Rs.196205.12 and Rs.130934.52. The overall gross returns of all the crops are estimated to be Rs.1364077.45. Therefore, from the study it is evident that small farms returns are highest among all the other size in all crops production which leads us to the conclusion that resources are allocated and utilized optimally in the farm size.

## Net Returns and Farm Business Income

Gross output per hectare is a crude general index of farm level efficiency in resource use. It provides a rough indication of per hectare profitability of farm-business with per hectare cost. However, tabular descriptive analysis for profitability is no substitute for rigorous production function analysis which serves a better tool to the efficiency of factor proportions in production. Nevertheless, a study of returns throws useful light on aspects which need careful scrutiny and rigorous analysis. With this in view the study of returns had been undertaken. In the analysis of efficiency of farm size, it has been suggested that output per unit of paid-out cost is a preferable criterion in view of the difficulties arising due to the imputation of farm family labour, imputation of rental value of owned land etc., in order to be able to estimate Net returns(NR). In any case, farmers are not interested in minimizing these imputed costs, but they are interested only in minimizing paid-out costs or they wish to maximise not gross output but that output from which paid-out costs have been deducted i.e., they will maximise Farm Business Income (FBI). It is therefore, FBI is a more relevant variable in farm level decision making(Bharadwaj, A.N., Swarup, R. and Nadda. A.L) It can be seen from the Table 1.2 that per hectare cultivation of land in case of all crops gives FBI and NR in the tone of about Rs.4,65,837.11 and Rs.2,04,338.33 respectively. FBI is high on Apple crop followed by Pears, Cherry, Almonds and Apricot. It can be further noticed that returns are positive on Apple crop as compare to Almonds, Cherry, Pears and Apricot crop where NR are negative.

As between different farm size, it is clear from the table that in case of all crops, FBI per hectare is Rs.3,59,088.11, Rs.4,83,502.85, Rs.4,69,996.69 on marginal, small and medium farms which shows erect trends as farm size increases. However, in respect of net returns, it is positive in all the holdings but trends are inconsistency with increase in farm size. The net return is found negative on all farm size categories in respect of all the crops with the only exception of Apple. The reason for the same is that production of these crops is limited with less amount of land is occupied under its production and on the other hand cost B and cost C is very high due strong imputed values of land and labor hence leads to less NR. It can also be noted from the table that FBI is more in Apple crop across all the size holdings compare to all other crops. It can also be observed from the table that FBI is negative in Cherry and Apricot production in small holdings as compare to marginal and medium holding. It can be seen from the table that small farm holdings gaining maximum FBI in Apple crop

compare to other holding hence can be concluded that in all crops they give more preference to production of Apple than other crops. FBI is showing a decreasing trend with increase in farm size in Almonds and Pears while in case of Apples trends are inconsistent.

**Table 2 : Farm Business Income (FBI), Net Returns (NR) of Sample Households**

(in Rs. Per Hectare)

Sr. No.	Crops	Returns	Marginal Farmers	Small Farmers	Medium Farmers	Overall Farmers
1.	Apple	FBI	454299.69	581525.51	551460.07	551625.68
		NR	203516.91	285367.96	261819.24	262927.28
2.	Almonds	FBI	27303.83	6369.46	4154.79	6886.71
		NR	-74154.82	-78161.63	-78179.28	-77586.65
3.	Cherry	FBI	37121.57	-972.14	25801.51	20090.90
		NR	-70265.56	-79993.427	-91288.89081	-85523.6165
4.	Pears	FBI	110159.72	51886.98	29519.74	37120.36
		NR	-62534.90	-127312.89	-118313.87	-116756.16
5.	Apricot	FBI	8518.53	-9468.80	4892.99	1567.99
		NR	-86430.47	-87180.36	-105479.72	-97998.10
6.	All	FBI	359088.11	483502.85	469996.69	465837.11
		NR	138846.92	219044.76	205937.48	204338.33

Thus, it can be concluded that farm size is an important factor in determining the overall efficiency of the farm production. In our analysis, it can be seen that small farms are getting advantage in Apple production whereas marginal farmers getting advantage in Apricot, Cherry, Almonds and Pears production which gives a conclusion that as farm size increases the chances of returns per hectare diminishes.

## CONCLUSION

Thus, one can conclude from the research that among different crops returns from the Apples and Pears crop production is more across all farm size because FBI looks good as gap between Gross returns and Cost A1 is more in Apple and Pears crops. However, when one goes with farm size analysis it has been found that performance of small farmers looks good with highest per hectare return in Apple production and highest Per hectare FBI from all crops production and possible reason for the same can be resource allocation and utilization which is important and required in agriculture production therefore leads us to the following policy implications:

- It has been observed that marginal farms Per hectare FBI compare to other farm holdings from other crops is high and returns from apple production is less hence decreasing overall FBI therefore suggesting marginal farmers for rational resource allocation as they are misallocated and diverted more towards other temperate crops rather than apple production.
- As far as medium farmers resources allocation is concern it is neither balance nor efficient as their Per hectare FBI compare to other farm holdings from other temperate fruits is less and also per hectare returns from apple is not highest in spite of allotting more land in the

production of the same therefore suggest to increase the resource efficiency by balancing the resource allocation which will put right resource on right area hence will increase production and will reduce risk therefore bring out large farms from the clutches of diminishing returns.

- Resources are scarce and their allocation determines everything therefore it is suggested to all the farmers of the area that before allocating land into different ends one should not only consider per hectare output but also tries to understand the market worth of the product which could therefore increase the long run scope of farm profits.

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## APPENDIX

### Appendix 1 : Input Use Structure and Cost of Cultivation in Apple Crop (in Rs. Per Hectare)

Sr. No	Input/Cost	Marginal Farmers	Small Farmers	Medium Farmers	Overall Farmers
1.	Value of Hired Human Labour	63730.94	106859.25	109637.97	106605.71
		(16.44)	(22.25)	(22.88)	(22.47)
2.	Value of Machine Labour (Owned+hied-in)	2640.36	4478.19	13550.32	11289.16
		(0.68)	(0.93)	(2.83)	(2.38)
3.	Value of Seeds (Produced + Purchased)	606.95	571.36	531.21	542.73
		(0.16)	(0.12)	(0.11)	(0.11)
4.	Value of Manures (Owned + Purchased)	23262.33	23296.10	20026.53	20803.18
		(6.00)	(4.85)	(4.18)	(4.39)
5.	Value of chemical Fertilizer	12080.72	12436.34	10469.78	10918.49
		(3.12)	(2.59)	(2.18)	(2.30)
6.	Value of Insecticides & Pesticides	21016.59	22005.85	20881.72	21095.01
		(5.42)	(4.58)	(4.36)	(4.45)
7.	Irrigation Charges	0.00	0.00	0.00	0.00
		(0.00)	(0.00)	(0.00)	(0.00)
8.	Depreciation Charges (Farm Implements & Buildings)	4337.96	5736.79	5996.61	5857.86
		(1.12)	(1.19)	(1.25)	(1.23)
9.	Tractor/Machinery charges (Hired)	0.00	0.00	0.00	0.00
		(0.00)	(0.00)	(0.00)	(0.00)
10.	Interest on working Capital	4372.66	3855.12	4029.72	4016.60
		(1.13)	(0.80)	(0.84)	(0.85)
11.	Land Revenue	0.00	0.00	0.00	0.00
		(0.00)	(0.00)	( 0.00)	( 0.00)
12.	Taxes	0.00	0.00	0.00	0.00
		(0.00)	(0.00)	(0.00)	(0.00)
13.	Miscellaneous Expenses	4766.37	4797.51	4478.26	4552.56
		(1.23)	(1.00)	(0.93)	(0.96)
	Cost A1	136814.89	184036.51	189602.12	185681.29
		(35.30)	(38.33)	(39.56)	(39.14)
14.	Rent on leased -In Land	0.00	0.00	0.00	0.00
		(0.00)	(0.00)	(0.00)	(0.00)
	Cost A2	136814.89	184036.51	189602.12	185681.29
		(35.30)	(38.33)	(39.56)	(39.14)
15.	Rental Value of owned Land	177334.37	229668.61	222318.66	221192.09
		(45.75)	(47.83)	(46.39)	(46.63)
16.	Imputed Value of owned fixed capital	32390.10	64252.06	67162.03	64717.80
		(8.36)	(13.38)	(14.01)	(13.64)
	Cost B	346539.36	477957.18	479082.80	471591.18
		(89.41)	(99.53)	(99.97)	(99.41)
17.	Imputed Value of Family Labour	41058.30	2236.88	160.14	2788.51
		(10.59)	(0.47)	(0.03)	(0.59)
	Cost C	387597.67	480194.06	479242.95	474379.69
		(100.00)	(100.00)	(100.00)	(100.00)

Note: Figures in table is percentage analysis of column total.

**Appendix 2 : Input Use Structure and cost of cultivation in Almonds Crop**

(in Rs. Per Hectare)

<b>Sr. No.</b>	<b>Input/Cost</b>	<b>Marginal Farmers</b>	<b>Small Farmers</b>	<b>Medium Farmers</b>	<b>Overall Farmers</b>
1.	Value of Hired Human Labour	37588.24 (19.38)	93897.37 (39.48)	97161.76 (42.30)	91209.95 (40.02)
2.	Value of Machine Labour (Owned+hied-in)	4329.41 (2.23)	9322.11 (3.92)	6872.43 (2.99)	7133.46 (3.11)
3.	Value of Seeds (Produced + Purchased)	1231.18 (0.63)	1773.16 (0.75)	1510.88 (0.66)	1538.17 (0.67)
4.	Value of Manures (Owned + Purchased)	10170.59 (5.24)	11986.84 (5.04)	13286.76 (5.78)	12750.79 (5.55)
5.	Value of chemical Fertilizer	14605.88 (7.53)	13650.00 (5.74)	9904.78 (4.31)	11068.32 (4.82)
6.	Value of Insecticides & Pesticides	15076.47 (7.77)	13040.79 (5.48)	10376.47 (4.52)	11324.87 (4.93)
7.	Irrigation Charges	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
8.	Depreciation Charges (Farm Implements & Buildings)	632.26 (0.33)	1246.33 (0.52)	1514.34 (0.66)	1382.51 (0.60)
9.	Tractor/Machinery charges (Hired)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
10.	Interest on working Capital	1365.67 (0.70)	1794.74 (0.75)	2180.65 (0.95)	2031.31 (0.88)
11.	Land Revenue	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
12.	Taxes	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
13.	Miscellaneous Expenses	7465.29 (3.85)	6615.00 (2.78)	4572.13 (1.99)	5005.18 (2.18)
	Cost A1	92464.99 (47.68)	153326.33 (64.46)	147380.21 (64.16)	143444.55 (62.76)
14.	Rent on leased -In Land	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
	Cost A2	92464.99 (47.68)	153326.33 (64.46)	147380.21 (64.16)	143444.55 (62.76)
15.	Rental Value of owned Land	35930.65 (18.53)	47908.74 (20.14)	45460.50 (19.79)	45099.38 (19.63)
16.	Imputed Value of owned fixed capital	10116.24 (5.22)	29911.83 (12.58)	36344.16 (15.82)	32730.01 (14.25)
	Cost B	138511.87 (71.42)	231146.90 (97.18)	229184.87 (99.77)	221273.93 (96.64)
17.	Imputed Value of Family Labour	55411.76 (28.57)	6710.53 (2.82)	529.41 (0.23)	6643.98 (2.89)
	Cost C	193923.64 (100.00)	237857.42 (100.00)	229714.28 (100.00)	227917.91 (100.00)

Note: Figures in table is percentage analysis of column total.



**Appendix 3 : Input Use Structure and cost of cultivation in Cherry Crop**

(in Rs. Per Hectare)

Sr. No.	Input/Cost	Marginal Farmers	Small Farmers	Medium Farmers	Overall Farmers
1.	Value of Hired Human Labour	30150.00 (15.83)	73248.48 (34.96)	82988.51 (32.46)	73502.03 (31.30)
2.	Value of Machine Labour (Owned+hied-in)	4400.00 (2.31)	9939.39 (4.74)	8646.62 (3.38)	8441.06 (3.59)
3.	Value of Seeds (Produced + Purchased)	746.88 (0.39)	1103.94 (0.53)	1475.54 (0.58)	1281.06 (0.55)
4.	Value of Manures (Owned + Purchased)	8481.25 (4.45)	9151.52 (4.37)	11156.76 (4.36)	10270.73 (4.37)
5.	Value of chemical Fertilizer	14846.88 (7.79)	14093.94 (6.73)	11104.05 (4.34)	12393.09 (5.28)
6.	Value of Insecticides & Pesticides	15318.75 (8.04)	12815.15 (6.12)	10402.70 (4.07)	11689.43 (4.98)
7.	Irrigation Charges	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
8.	Depreciation Charges (Farm Implements & Buildings)	671.78 (0.35)	1435.16 (0.69)	2783.11 (1.09)	2146.82 (0.91)
9.	Tractor/Machinery charges (Hired)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
10.	Interest on working Capital	1451.03 (0.76)	2066.67 (0.99)	4007.68 (1.57)	3154.31 (1.34)
11.	Land Revenue	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
12.	Taxes	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
13.	Miscellaneous Expenses	7065.63 (3.71)	6618.18 (3.16)	6042.70 (2.36)	6330.16 (2.70)
	Cost A1	83132.18 (43.63)	130472.44 (62.28)	138607.68 (54.21)	129208.69 (55.02)
14.	Rent on leased -In Land	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
	Cost A2	83132.18 (43.63)	130472.44 (62.28)	138607.68 (54.21)	129208.69 (55.02)
15.	Rental Value of owned Land	36076.13 (18.94)	38850.09 (18.54)	49322.76 (19.29)	44789.88 (19.07)
16.	Imputed Value of owned fixed capital	10748.50 (5.64)	34443.93 (16.44)	66794.67 (26.12)	50824.64 (21.64)
	Cost B	129956.81 (68.21)	203766.46 (97.27)	254725.10 (99.62)	224823.21 (95.74)
17.	Imputed Value of Family Labour	60562.50 (31.79)	5727.27 (2.73)	972.97 (0.38)	10000.00 (4.26)
	Cost C	190519.31 (100.00)	209493.73 (100.00)	255698.08 (100.00)	234823.21 (100.00)

Note: Figures in table is percentage analysis of column total.

**Appendix 4 : Input Use Structure and Cost of Cultivation in Pears Crop**  
(in Rs. Per Hectare)

Sr. No.	Input/Cost	Marginal Farmers	Small Farmers	Medium Farmers	Overall Farmers
1.	Value of Hired Human Labour	36933.33 (13.27)	87737.31 (25.59)	98738.69 (31.90)	93841.69 (29.99)
2.	Value of Machine Labour (Owned+hied-in)	4444.44 (1.60)	8830.77 (2.58)	6284.31 (2.03)	6572.97 (2.10)
3.	Value of Seeds (Produced + Purchased)	2008.89 (0.72)	2040.00 (0.60)	1422.01 (0.46)	1546.13 (0.49)
4.	Value of Manures (Owned + Purchased)	12944.44 (4.65)	18078.85 (5.27)	17092.34 (5.52)	17024.42 (5.44)
5.	Value of chemical Fertilizer	13808.33 (4.96)	13694.23 (3.99)	10502.55 (3.39)	11157.99 (3.57)
6.	Value of Insecticides & Pesticides	17325.00 (6.22)	14031.73 (4.09)	12774.09 (4.13)	13202.33 (4.22)
7.	Irrigation Charges	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
8.	Depreciation Charges (Farm Implements & Buildings)	4179.97 (1.50)	6375.44 (1.86)	5261.50 (1.70)	5373.30 (1.72)
9.	Tractor/Machinery charges (Hired)	0.00 (0.00)	0.00 (0.00)	0.00 ( 0.00 )	0.00 (0.00)
10.	Interest on working Capital	6449.20 (2.32)	6557.59 (1.91)	5411.83 (1.75)	5639.31 (1.80)
11.	Land Revenue	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
12.	Taxes	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
13.	Miscellaneous Expenses	7602.78 (2.73)	6289.23 (1.83)	4241.13 (1.37)	4726.63 (1.51)
	Cost A1	105696.39 (37.97)	163635.14 (47.73)	161728.44 (52.24)	159084.76 (50.83)
14.	Rent on leased -In Land	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
	Cost A2	105696.39 (37.97)	163635.14 (47.73)	161728.44 (52.24)	159084.76 (50.83)
15.	Rental Value of owned Land	64756.83 (23.26)	64656.63 (18.86)	57374.45 (18.53)	58861.53 (18.81)
16.	Imputed Value of owned fixed capital	47771.11 (17.16)	109293.23 (31.88)	90197.18 (29.14)	90863.82 (29.03)
	Cost B	218224.33 (78.39)	337585.01 (98.470)	309300.07 (99.91)	308810.12 (98.67)
17.	Imputed Value of Family Labour	60166.67 (21.61)	5250.00 (1.53)	262.77 (0.08)	4151.16 (1.33)
	Cost C	278391.01 (100.00)	342835.01 (100.00)	309562.05 (100.00)	312961.28 (100.00)

Note: Figures in table is percentage analysis of column total.

**Appendix 5 : Input Use Structure and Cost of Cultivation in Apricot Crop**

(in Rs. Per Hectare)

Sr. No.	Input/Cost	Marginal Farmers	Small Farmers	Medium Farmers	Overall Farmers
1.	Value of Hired Human Labour	32341.18 (18.29)	75973.94 (35.78)	82125.68 (33.07)	73663.23 (32.18)
2.	Value of Machine Labour (Owned+hied-in)	4329.41 (2.45)	10038.79 (4.73)	8782.43 (3.54)	8506.29 (3.72)
3.	Value of Seeds (Produced + Purchased)	590.59 (0.33)	873.03 (0.41)	1137.84 (0.46)	992.34 (0.43)
4.	Value of Manures (Owned + Purchased)	7647.06 (4.32)	10175.76 (4.79)	11647.30 (4.69)	10707.26 (4.68)
5.	Value of chemical Fertilizer	14179.41 (8.02)	14578.79 (6.87)	10937.84 (4.40)	12351.21 (5.40)
6.	Value of Insecticides & Pesticides	14370.59 (8.13)	13180.30 (6.21)	10681.08 (4.30)	11852.02 (5.18)
7.	Irrigation Charges	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
8.	Depreciation Charges (Farm Implements & Buildings)	632.26 (0.36)	1435.16 (0.68)	2783.11 (1.12)	2129.51 (0.93)
9.	Tractor/Machinery charges (Hired)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
10.	Interest on working Capital	1365.67 (0.77)	2066.67 (0.97)	4007.68 (1.61)	3128.87 (1.37)
11.	Land Revenue	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
12.	Taxes	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
13.	Miscellaneous Expenses	6448.24 (3.65)	6280.91 (2.96)	5831.76 (2.35)	6035.81 (2.64)
	Cost A1	81904.41 (46.31)	134603.35 (63.40)	137934.71 (55.55)	129366.53 (56.51)
14.	Rent on leased -In Land	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
	Cost A2	81904.41 (46.31)	134603.35 (63.40)	137934.71 (55.55)	129366.53 (56.51)
15.	Rental Value of owned Land	27126.88 (15.34)	37540.36 (17.68)	42848.31 (17.26)	39280.35 (17.16)
16.	Imputed Value of owned fixed capital	10116.24 (5.72)	34443.93 (16.22)	66794.67 (26.90)	50414.77 (22.02)
	Cost B	119147.53 (67.37)	206587.64 (97.30)	247577.69 (99.71)	219061.65 (95.69)
17.	Imputed Value of Family Labour	57705.88 (32.63 )	5727.27 (2.70)	729.73 ( 0.29)	9870.97 ( 4.31)
	Cost C	176853.41 (100.00)	212314.91 (100.00)	248307.42 (100.00)	228932.62 (100.00 )

Note: Figures in table is percentage analysis of column total.

**Appendix 6 : Input Use Structure and Cost of cultivation in All Crop**

(in Rs Per Hectare)

Sr. No.	Input/Cost	(in Rs Per Hectare)	Small Farmers	Medium Farmers	Overall Farmers
1.	Value of Hired Human Labour	56865.98	102837.82	107226.79	103383.68
		(16.42)	(23.25)	(23.94)	(23.46)
2.	Value of Machine Labour (Owned+hied-in)	3046.05	5339.29	12556.26	10643.96
		(0.88)	(1.21)	(2.80)	(2.42)
3.	Value of Seeds (Produced + Purchased)	736.87	737.73	665.88	683.50
		(0.21)	(0.17)	(0.15)	(0.16)
4.	Value of Manures (Owned + Purchased)	20134.36	21515.46	19199.95	19686.22
		(5.81)	(4.87)	(4.29)	(4.47)
5.	Value of chemical Fertilizer	12609.79	12699.89	10470.67	11013.35
		(3.64)	(2.87)	(2.34)	(2.50)
6.	Value of Insecticides &Pesticides	19739.69	20504.34	19456.68	19668.30
		(5.70)	(4.64)	(4.34)	(4.46)
7.	Irrigation Charges	0.00	0.00	0.00	0.00
		(0.00)	(0.00)	(0.00)	(0.00)
8.	Depreciation Charges (Farm Implements & Buildings)	3693.64	5268.12	5642.47	5455.77
		(1.07)	(1.19)	(1.26)	(1.24)
9.	Tractor/Machinery charges (Hired)	0.00	0.00	0.00	0.00
		(0.00)	(0.00)	(0.00)	(0.00)
10.	Interest on working Capital	3989.13	3793.05	4062.58	4008.10
		(1.15)	(0.86)	(0.91)	(0.91)
11.	Land Revenue	0.00	0.00	0.00	0.00
		(0.00)	(0.00)	(0.00)	(0.00)
12.	Taxes	0.00	0.00	0.00	0.00
		(0.00)	(0.00)	(0.000)	(0.000)
13.	Miscellaneous Expenses	5324.16	5081.90	4521.89	4674.14
		(1.54)	(1.15)	(1.01)	(1.06)
	Cost A1	126139.66	177777.60	183803.18	179217.01
		(36.42)	(40.20)	(41.04)	(40.66)
14.	Rent on leased -In Land	0.00	0.00	0.00	0.00
		(0.00)	(0.00)	(0.00)	(0.00)
	Cost A2	126139.66	177777.60	183803.18	179217.01
		(36.42)	(40.20)	(41.04)	(40.66)
15.	Rental Value of owned Land	145568.33	198384.13	196139.96	193516.24
		(42.03)	(44.86)	(43.79)	(43.91)
16.	Imputed Value of owned fixed capital	29549.14	63217.44	67709.66	64580.90
		(8.53)	(14.29)	(15.12)	(14.65)
	Cost B	301257.13	439379.17	447652.81	437314.14
		(86.97)	(99.35)	(99.95)	(99.23)
17.	Imputed Value of Family Labour	45123.71	2856.51	209.59	3401.65
		(13.03)	(0.65)	(0.05)	(0.77)
	Cost C	346381	442236	447862	440716
		(100.00)	(100.00)	(100.00)	(100.00)

Note: Figures in table is percentage analysis of column total.