CHAPTER - IX

COST OF PRODUCTION OF GREEN LEAF AND MADE TEA

This chapter purports to find out cost of production per unit area and per unit of green leaf output as well as their structural composition of the selected gardens in order to examine the variability of cost and cost structure, if any, between the gardens of different size categories and ownership types .The cost of manufacturing per unit of output of made tea for the selected gardens , their structural composition and variability with respect to size and ownership category are also analysed in this chapter. The principal objective of this chapter is to highlight the cost and cost structure of tea production and to examine the scale economy , whether operative therein , by comparing the cost situations of the selected gardens.

9.1 Concepts of Cost Used in the Present Study

In the short run cost has been classified into prime and overhead category. Accordingly, in Farm Management Study crop cost for an owner operated farm is classified into cost A_1 , Cost B and Cost C[1] .Cost A_1 is defined as out of pocket expenses and hence it includes all items of costs paid out by the farmer. Cost B is worked out by adding imputed value of rent of owned land and interest on fixed capital with Cost A_1. And cost C is calculated by adding cost of family labour with cost B . The concept of prime cost in the short run for any seasonal crop has been subsequently developed and designated as cost D [2] . defined as cost A_1 exclusive of land revenue and cesses plus imputed value of family labour.

For a perennial crop like tea the concept of short run cost as adopted in Farm Management Studies has little relevance. Considering longer time horizon for a perennial crop like tea cost can aptly be classified as recurring and non-recurring cost. The recurring cost is defined to include all items for operation and maintenance of farm and factory while non-recurring cost includes the items of investment either replaceable or renewable at longer time interval. In the leaf production of farm sector labour used in all operations , manure and fertilizers , plant protection chemicals and other petty items which are required for day-to-day farm operations are the items of recurring cost. In manufacturing sector the items like labour

1. Kahlon, A.S. and Singh, K .*Economics of Farm Management in India - Theory and Practice*, Allied Publishers Ltd. , New Delhi, 1992 , pp. 88 - 90.
2. Krishnaji, N. 'State Intervention and Food Grain Prices', *Social Scientist*, Jan.- Feb. (Special No).1975, p. 85

used in all operations, fuel for operations of machinery, repair and maintenance cost of machinery, and other petty items for day-to-day operational requirement are the components of recurring cost while digging of drains and land shaping for garden development , cost of planting material for tea and shade trees , construction of buildings for factory and farm , installation of machinery etc. are the items of non-recurring cost . It is, therefore, necessary to account for both recurring and non-recurring type of cost to work out cost per unit area and per unit of output. Now the question comes as to how the cost at any point of time is to be worked out where flow of costs (recurring costs) are involved over a life time of investments made during establishment and subsequent stages of development of a garden (non-recurring costs) . This type of problem is dealt with the help of principle of compounding or discounting which is generally used for analysis of any investment project. All future flows of recurring expenditure incurred over the average life time of initial non-recurring expenditure are converted into present values at the base period by discounting at an appropriate discount rate and by summing them with initial investment cost to obtain total cost for the entire life time with reference to base period point of time. This procedure of working out total cost can be expressed by notational form as in the following.

$$T_c = N_c + \sum_{t=1}^{n} \frac{R_t}{(1+r)^t}$$

Where , N_c = non-recurring cost ,

R_t = recurring cost at time t , (t = 1 , 2 , ..., n),

r = discounting rate , and

T_c = total cost.

Total cost thus obtained over the life time can again be converted into average annual cost by deflating with annuity factor $(1- V_n) / r$, where V_n = discount factor = $1 / (1 + r)^n$ = present worth of an amount of 1 at the end of life time. By deflating total average annual cost thus obtained by net cropped area or average annual production one can find out average total cost per unit area or per unit of output [3] . With the above conceptual background and calculating procedure one can find out cost incurred in producing green leaf per unit

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3. For clear understanding one may consult :

(i) Gittinger , J. P, *Economic Analysis of Agricultural Projects* , John & Hopkins University Press , Baltimore , USA , 1982

(ii) Gittinger , J. P (ed.) , Compounding and Discounting for Project Evaluation , EDI Teaching Material Series No1 , Industrial Development Bank of India , 1981 , pp. 128 - 142.

area and per unit of output in the farm sector,and the cost of manufacturing per unit volume of made tea and ultimately average total cost per unit of made tea.

9.2 Data Availability and Cost of Production Worked Out in the present study

From the above discussion it becomes evident that availability of some quantitative and qualitative data both in the farm and manufacturing sector are essential in calculating total average cost per unit area and per unit of output. In the farm sector initial investment during the period of garden establishment in the form of land development and the cost incurred on account of planting of tea and shade trees *inter alia* average life of plantation along with flow of recurring costs and yield per unit area over the life of plantation are the items to be reckoned into Expert opinion differs as to the exact duration of the 'economic life' of the tea plant . From available scientific evidences economic life of tea plant may plausibly be fixed between 50 and 70 years as discussed in **Chapter VII** . Yield data with respect to age of plantation over the entire life of plantation are also available from micro level section-wise data of the selected gardens. But section level money cost on various recurring items are not maintained by the individual gardens. Due to this data lacuna average total cost of leaf production considering the life time of plantation following the above discounting procedure could not be worked out. In the manufacturing sector reliable data under various heads of capital cost and their respective economic life are not available either from the garden level records or from the head offices of the respective gardens. Thus calculation of average total cost per unit of output was also not possible. Data on various components of recurring cost both in the farm and manufacturing sector are , however , available . Data on recurring expenditure in respect of 'common service'[4] have also been available . Calculation of annual total cost following the discounting procedure and finding out annual profit for an individual tea estate is the principal basis in understanding the internal economy of any tea estate in the long term perspective. In the short term perspective recurring cost itself, which may plausibly be considered as prime cost has, however, special relevance in understanding the internal economy of the individual enterprises and for the tea industry of Dooars as a whole. With this conceptual background average recurring cost of green leaf at farm level , manufacturing cost per unit of made tea at factory level and average total recurring cost per unit volume of made tea have been calculated

4. It includes office establishment; repair and maintenance of buildings, roads and vehicles; fuel for transport (excluding that part required for carrying the end product from production to sale point) etc.

at 1989 - 90 prices . Therefore , the term cost wherever arises in the subsequent discussion it would mean only the recurring cost at 1989 - 90 prices. On the basis of available cost data on various recurring items recurring cost per hectare and per kg of green leaf at 1989 - 90 prices for the selected gardens have been calculated.

Break - up of cost per hectare of green leaf and its weight structure for 33 selected gardens[5] are presented respectively in **Table 9.1** and **Table 9.2**. Human for labour, manure and fertilizers and plant protection chemicals are noted to be the major components of cost in the farm sector. Total cost per hectare of green leaf varies from Rs.10191 for Rahimpur to Rs. 18263 for Satali garden with a mean value of Rs. 13884. The magnitude of inter-garden variability in per hectare cost has been calculated by finding out the values of coefficient of variation which is noted 20.4 per cent . Out of per hectare total cost of green leaf of Rs. 13884 wage cost is recorded as Rs.10470 which accounts for about 76 per cent of total cost. Inter-garden wage cost per hectare varies from Rs.7712 for Rahimpur to Rs.14151 for Nedam garden with 14.4 per cent coefficient of variation. Average cost per hectare on manure and fertilizers and plant protection chemicals is found respectively Rs.1525 and Rs.1663 with their respective share to total cost as 11 per cent and 11.7 per cent. Inter-garden cost variability of these two components is noted relatively higher as compared to that of labour as revealed by their respective coefficient of variations (C.V. **Table 9.1**). In comparing cost per hectare with yield it is observed that cost per hectare is highly correlated with yield. The zero order correlation coefficient between cost per hectare and yield is worked to be as high as 0.59 which is statistically significant at 1 per cent probability level. The value of correlation coefficient between yield and material cost (cost of manure and fertilizers plus plant protection chemicals) is found even higher as 0.68 while that between yield and wage cost is recorded relatively low as 0.36 but statistically significant at 5 per cent probability level. With reported inter-garden invariance in prices of these inputs and wage rate one can come to the contention that higher recurring cost accompanied with higher yield and it is the material inputs comprising of manure and fertilizers and plant protection chemicals that have contributed largely in augmenting yield of green leaf. The labour also has similar contribution to yield variability but to a smaller extent.

Average cost per kg of green leaf is recorded as Rs. 1.46 with a range of Rs.1.16 to Rs.2.35 at 1989 - 90 prices. Relatively less inter-garden variability in unit cost of green leaf is noted as

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5. Due to non-availability of all relevant data on cost of production 4 out of 37 selected gardens have been excluded in calculating cost of production.

compared to the cost per unit area as revealed by comparing their respective C.V. values. To find out the relationship between unit cost of green leaf and wage cost or cost of material inputs per hectare the respective correlation coefficient has been calculated to be 0.35 (significant at 5 per cent level) and -0.28 (not significant even at 10 per cent level). Considering the earlier finding of direct association of intensity of labour or intensity of material inputs (as reflected by their respective money cost) with yield *inter alia* the relationship of these two factors separately with unit cost noted above one may reasonably arrive to the contention that an increase in labour cost per unit area through increasing intensity of labour use would lead to enhancement of yield but the effect of wage increase on yield is overshadowed when one evaluates it in terms of cost to be incurred per unit of output. Contrary effect of material inputs on unit cost is, however, visualized by negative correlation coefficient though not founded statistically. On the basis of the above observations one may conclude that an increase in the cost of labour would lead to increase in unit cost of green leaf while that for material inputs tend to decline unit cost through yield augmentation relatively at higher rate. This conclusion is refuted when one argue that the engagement of labour and the material inputs are not independent rather they are highly associated directly . And hence the relationship between unit cost and these two types of factors costs separately will lead to misleading conclusion. The correlation coefficient between wage cost and material cost is found to be as high as 0.91. Thus the joint effect of these two production factors needs to be accounted for in order to make the comparison meaningful. Here yield may reasonably be considered as joint effects of these two factors . The correlation coefficient between unit cost and yield of green leaf is worked out to be -0.68 which is highly statistically significant at 1 per cent probability level. This relationship is demonstrated in **Fig. 9.1.** The observed significant inverse relation between yield and unit cost of green leaf indicate that efforts towards yield augmentation by increasing input intensities as elicited in **Chapter VI** through physical input-output relation is also meaningful from economic point of view under present state of technology and price structure.

About 99 per cent of cost in producing green leaf is attributable to labour , manure and fertilizers and plant protection chemicals as demonstrated by **Table 9.2** in which labour singularly accounts for 76 per cent while the respective figures for manure & fertilizers and plant protection chemicals is 11 and 11.7 per cent. Inter-garden variability in the proportional share of the above three cost components shows that the variability in the share of wage to total cost is remarkably low (C.V = 5.6 per cent) in comparison with that for manure and fertilizers (C.V = 22.1 pert cent) and plant protection chemicals (C.V.= 22.9 per cent). The

observed relative stickiness of wage components to total cost structure leads to the implication that a minimum ratio of wages to total cost needs to be maintained for running and maintenance of farm operation and that ratio is around 75 per cent. Remarkably higher proportion of wages to total cost also indicates that an increase in wage rate will affect the cost situation more adversely as compared to that of equal rise in prices of material inputs like manure and fertilizers and plant protection chemicals. Thus in the question of cost minimization management of labour appears to be the most important in the farm sector.

Break- up of cost per hectare, cost per kg, and the cost structure by ownership type and size-class are cited respectively in **Table 9.3** and **Table 9.4**. Cost per hectare is recorded highest for the gardens belonging to the category of Public Ltd. ownership and for lowest size group. And in both cases it is attributable principally to wage component. By and large some revelation is also true in case of lowest per hectare cost recorded for Govt. Undertaking and for size category of 401- 600 hectare. Variation in cost per hectare by ownership is noticed higher as compared to its variation by size- class. No significant variation in cost structure either by ownership type or size - class is, however, discerned . No clear cut correspondence between cost per hectare and cost per kg of green leaf is also observed. But inverse relation between unit cost of green leaf and size of garden has been conspicuous from **Table 9.4**. Cost per kg of green leaf for largest size group is found as low as Rs.1.41 as against Rs.1.82 for lowest size-class. The gardens under Agency House are relatively of big sized which has been highlighted in **Chapter V**. Therefore , lowest cost recorded for the gardens under Agency House is quite natural. But the cost per kg of Rs.1.36 observed for Agency House lower than that for biggest size-class of gardens carries somewhat different meaning. One may reasonably attribute this cost difference to the ownership factor.

Break- up of cost of manufacturing per kg of made tea and the total cost per kg of made tea for selected gardens at 1989-90 prices are shown in **Table 9.5**. In manufacturing sector labour , fuel ,and maintenance of machinery are the components of cost wherein fuel accounts for 54.5 per cent of manufacturing cost followed by labour and machinery maintenance occupying respectively 28.2 and 17.3 per cent. A glaring inter-garden cost variability in each of the manufacturing components is revealed from **Table 9.5**. Average manufacturing cost per kg of made tea is worked out as Rs.3.47. Direct operational cost involved both in the farm and manufacturing sector of selected tea estates have been examined so far. There are other recurring cost of indirect nature which are to be incurred by the producers. These include office establishment , repair and maintenance of buildings , roads and vehicles , fuel for

Table 9.1: Break - up of recurring cost of production per ha of green leaf for the selected tea gardens at 1989 - 90 prices (in Rs.)

Gardens	Wage	Value of manure & fertilizers	Value of plant protection chemicals	Total material cost	Cost on petty items	Total cost	Yield / ha (Kg)	Cost / kg of green leaf
1	2	3	4	5 (col.3+ col.4)	6	7 (col.2+col.5+col.6)	8	9
Banarhat	9682.64	1507.72	1058.73	2566.45	138.49	12387.58	8499	1.46
Torsa	10342.19	1284.46	1367.97	2652.43	255.90	13250.52	7066	1.87
Satali	12143.11	2567.96	3288.71	5856.69	263.04	18262.84	11294	1.62
Nimtijhora	9715.38	896.36	1721.23	2617.59	130.16	12463.13	8299	1.50
Chengmari	9711.80	1357.94	1472.83	2830.77	194.74	12737.31	9909	1.28
Birpara	9937.30	1559.35	1697.05	3256.40	201.54	13395.24	9574	1.40
Bagracote	12898.03	1903.96	2210.81	4114.77	623.56	17636.36	13380	1.32
Phaskowa	11020.29	1607.69	1171.64	2779.33	343.53	14143.20	8873	1.59
Looksan	9086.17	1115.36	1012.19	2127.55	158.43	11372.20	7400	1.54
Rahimabad	11125.86	1599.39	2004.88	3604.27	N.A.	14730.13	8934	1.65
Kataiguri	12364.40	1430.56	1679.14	3109.70	168.48	15642.58	10534	1.48
Makrapara	12458.95	1192.81	1438.79	2631.60	726.21	15816.76	6735	2.35
New Dooars	9966.50	1473.47	1458.64	2932.11	190.87	13089.48	9169	1.42
Kalabari	9582.97	1224.20	1023.78	2247.98	48.37	11879.32	8213	1.44
Subhasini	13564.20	1132.79	1541.63	2674.42	211.72	16450.84	10279	1.60
Sankos	9831.41	1488.28	1556.78	3045.06	46.98	12923.45	9507	1.23
Nowera Nuddy	10546.73	1131.64	1242.07	2373.71	595.57	13516.01	11301	1.19
Jayanti	12839.35	1488.55	1258.45	2747.00	278.13	15864.48	10204	1.55
Diana	9323.86	1530.03	1822.28	3352.31	355.73	13053.90	8812	1.45
Batabari	10488.16	1355.05	1447.12	2802.17	814.67	14105.00	7916	1.77
Engo	12016.44	2991.55	2405.42	5396.97	216.41	17629.82	12470	1.41
Dhowlajhora	11716.94	1446.35	2296.79	3743.14	111.07	15571.15	10606	1.46
Rahimpur	7711.61	1392.49	1086.73	2479.22	N.A.	10190.83	4847	2.10
Bhatkawa	10773.69	1802.16	2180.58	3982.74	284.29	15040.72	11055	1.35
Kumargram	10150.64	1464.34	1468.21	2932.55	47.32	13130.51	9272	1.41
Dalgaon	9390.06	1059.04	1342.80	2401.89	182.80	11974.70	7953	1.51
Baradighi	7813.39	1105.41	1613.54	2718.95	384.34	10880.68	8817	1.22
Nedam	14151.12	1307.88	884.15	2192.03	97.65	16440.80	7564	2.17
Dalsingpara	9615.39	2209.39	1879.50	4088.89	151.67	13855.95	11227	1.23
Kailashpur	9997.60	1842.62	1461.00	3303.62	201.68	13502.90	11576	1.16
Indong	9940.56	1282.46	1339.06	2621.52	239.62	12801.70	8147	1.58
Meteli	9299.01	1537.21	1722.53	3259.74	232.20	12790.95	8485	1.50
Singhania	12265.56	984.52	1136.08	2120.60	124.17	14510.33	7534	1.92
Mean	10469.96	1525.31	1662.58	3187.89	226.15	13884.00	9512.26	1.46
C.V (%)	14.40	28.60	30.50	27.30	72.60	20.40	19.00	17.70

Petty items include hesian cloth, plucking basket and other miscellaneous contingent items.

Table 9.2 : Recuring cost structure of green leaf (in per cent) at 1989 - 90 prices.

Garden	Wage & salary	Manure & fertilizers	Plant protection chemicals	Total material input cost	Other recurring cost on petty items	Total recurring cost
1	2	3	4	5(col.3+col4)	6	7(col2+col5+col6)
Banarhat	78.16	12.17	8.55	20.72	1.12	100.00
Torsa	78.05	9.69	10.33	20.02	1.93	100.00
Satali	66.49	14.06	18.01	32.07	1.44	100.00
Nimtijhora	77.95	7.19	13.81	21.00	1.05	100.00
Chengmari	76.25	10.66	11.56	22.22	1.53	100.00
Birpara	74.19	11.64	12.67	24.31	1.50	100.00
Bagracote	73.13	10.80	12.54	23.34	3.53	100.00
Phasakowa	77.92	11.37	8.28	19.65	2.43	100.00
Lookaan	79.90	9.81	8.90	18.71	1.39	100.00
Rahimabad	75.53	10.86	13.61	24.47	-	100.00
Katalguri	79.04	9.15	10.73	19.88	1.08	100.00
Makrapara	78.77	7.54	9.10	16.64	4.59	100.00
New Dooars	76.14	11.26	11.14	22.40	1.46	100.00
Kalabari	80.67	10.30	8.62	18.92	0.41	100.00
Subhasini	82.46	6.89	9.37	16.26	1.28	100.00
Sankos	76.07	11.52	12.05	23.57	0.36	100.00
Nowera Nuddy	78.03	8.37	9.19	17.56	4.41	100.00
Jayanti	80.93	9.38	7.93	17.31	1.76	100.00
Diana	71.43	11.72	13.96	25.68	2.89	100.00
Batabari	74.36	9.61	10.26	19.87	5.77	100.00
Engo	68.16	16.97	13.64	30.61	1.23	100.00
Dhowlajhora	75.25	9.29	14.75	24.04	0.71	100.00
Rahimpur	75.67	13.66	10.67	24.33	-	100.00
Bhatkawa	71.63	11.98	14.50	26.48	1.89	100.00
Kumargram	77.31	11.15	11.18	22.33	0.36	100.00
Dalgaon	78.42	8.84	12.21	21.05	1.53	100.00
Baradighi	71.81	10.16	14.83	24.99	3.20	100.00
Nedam	86.07	7.96	5.38	13.34	0.59	100.00
Dalsingpara	69.41	15.95	13.57	29.52	1.07	100.00
Kailashpur	74.04	13.64	10.83	24.46	1.50	100.00
Indong	77.65	10.02	10.46	20.48	1.87	100.00
Meteli	72.70	12.02	13.46	25.48	1.82	100.00
Singhania	84.53	6.78	7.83	14.61	0.86	100.00
Mean	75.87	11.03	11.72	22.75	1.38	100.00
C.V. (%)	5.60	22.17	22.90	19.30	69.70	

Table 9.3 : Break-up of recurring cost per ha and per kg of green leaf (in Rs.), and the cost structure by ownership status at 1989 - 90 prices.

Ownership Status	No. of gardens	Wage	Manure & fertilisers	Plant protection chemicals	Total material input cost	Other petty cost	Total cost/ha.	Total cost per kg
1	2	3	4	5	6	7	8	9
Agency House	9	10152 (74.40)	1586 (11.62)	1666 (12.21)	3252 (23.83)	242 (1.77)	13646 (100.00)	1.36
Public Ltd.	16	11007 (75.09)	1571 (10.72)	1851 (12.63)	3422 (23.35)	230 (1.56)	14659 (100.00)	1.53
Private Ltd.	5	10296 (77.91)	1286 (9.73)	1390 (10.52)	2676 (20.25)	242 (1.84)	13216 (100.00)	1.57
Govt. Undertaking	3	9674 (77.58)	1405 (11.27)	1225 (9.82)	2630 (21.09)	167 (1.33)	12471 (100.00)	1.46
Overall	33	10470 (75.39)	1525 (10.98)	1663 (11.98)	3188 (22.96)	226 (1.65)	13884 (100.00)	1.46

Fig. in the parenthesis indicates the percentage of the respective total.

Table 9.4 : Break - up of recurring cost per ha and per kg of green leaf (in Rs), and the cost structure by size - class at 1989 - 90 prices.

Size - class (ha)	No. of gardens	Wage	Manure & fertilizers	Plant protection chemicals	Total material input cost	Other petty cost	Total cost per ha.	Total cost per kg
1	2	3	4	5	6	7	8	9
Below 200	4	11111 (75.68)	1686 (11.48)	1491 (10.16)	3176 (21.64)	394 (2.68)	14681 (100.00)	1.82
200 - 400	11	11019 (78.09)	1306 (9.25)	1541 (10.92)	2847 (20.17)	244 (1.74)	14110 (100.00)	1.53
401 - 600	9	10303 (76.18)	1425 (10.54)	1520 (11.24)	2945 (21.78)	276 (2.04)	13524 (100.00)	1.45
Above 600 ha	9	10258 (73.46)	1695 (12.14)	1835 (13.14)	3530 (25.28)	177 (1.26)	13965 (100.00)	1.41
Overall	33	104.70 (75.39)	1525 (10.98)	1663 (11.98)	3188 (22.96)	226 (1.65)	13884 (100.00)	1.46

Fig. in the parenthesis indicates the percentage of the respective total.

Table 9.5 : Break -up of manufacturing cost per kg of made tea and total recurring cost per kg (in Rs.) for the selected gardens at 1989 - 90 prices.

Gardens	Manufacturing Cost per kg of Made Tea				Cost on common service, benefits and taxes	Total cost per kg of made tea
	Wage	Fuel	Repair and maintenance of machinery	Total		
1	2	3	4	5 (col.2+col.4)	6	7
Banarhat	0.89	1.58	0.71	3.18	7.68	17.40
Torsa	1.58	2.06	0.80	4.44	7.64	19.98
Satali	0.94	1.87	0.37	3.18	7.25	17.77
Nimtijhora	1.02	2.12	1.09	2.63	7.20	18.48
Chengmari	0.88	2.16	0.80	3.84	8.14	18.90
Birpara	0.93	1.68	0.51	3.12	6.56	16.07
Bagracote	0.83	1.67	0.59	3.09	6.10	15.10
Phaskowa	1.88	2.58	0.91	5.37	8.20	19.70
Looksan	1.44	2.40	0.28	4.12	8.28	19.10
Rahimabad	1.30	2.12	0.06	3.48	9.36	18.84
Kataiguri	1.24	2.42	0.79	3.45	8.17	19.60
Makrapara	1.43	2.32	0.66	4.41	9.31	24.05
New Dooars	0.88	1.67	0.50	3.05	7.85	17.27
Kalabari	1.19	2.36	0.14	3.69	7.32	17.62
Subhasini	1.49	2.13	0.36	3.98	7.38	18.24
Sankos	0.66	1.96	0.42	3.04	7.00	15.81
Nowera Nuddy	0.66	1.45	0.67	2.78	7.47	15.75
Jayanti	0.62	1.40	0.89	2.91	6.65	15.68
Diana	0.75	1.93	0.62	3.30	9.22	19.12
Batabari	0.87	1.97	1.22	4.06	8.33	19.35
Engo	0.89	1.84	0.89	3.62	9.50	19.04
Dhowlajhora	1.37	2.32	0.31	4.00	6.97	18.00
Rahimpur	2.37	2.89	0.34	5.60	11.86	26.39
Bhatkawa	1.16	1.86	0.53	3.55	6.48	17.05
Kumargram	0.95	1.55	0.36	2.86	7.74	17.03
Dalgaon	1.03	2.13	0.49	3.65	8.18	18.54
Baradighi	0.85	1.63	1.08	3.56	8.24	17.24
Nedam	0.85	2.23	0.39	3.47	9.72	23.19
Dalsingpara	0.78	1.42	0.67	2.87	7.69	16.08
Kailashpur	0.86	2.56	0.72	4.14	8.63	20.15
Indong	1.35	2.18	0.83	4.36	8.51	19.75
Meteli	0.69	1.49	0.57	2.75	7.18	16.27
Singhania	1.29	2.78	0.62	4.69	9.67	22.32
Overall	0.98(28.24) (5.56)	1.89(54.47) (10.71)	0.60(17.29) (3.40)	3.47(100.00) (19.67)	7.60 (43.08)	17.64 (100.00)

Fig. in the parenthesis indicates the percentage of respective total.

Table 9.6 : Break - up of manufacturing cost per kg of made tea and total recurring cost per kg (in Rs.) by ownership category at 1989 - 90 prices.

Ownership Category	Wage	Fuel	Repair and maintenance of machinery	Total manufacturing cost	Cost on common service, benefits and taxes	Total recurring cost
1	2	3	4	5(Col. 2 to Col.4)	6	7
Agency House	0.79	1.59	0.62	3.00	7.08	**16.09**
Public Ltd.	1.12	2.11	0.57	3.80	7.81	**18.49**
Private Ltd.	1.18	2.25	0.75	4.18	8.43	**20.22**
Govt. Undertaking	1.00	1.78	0.52	3.30	7.89	**17.68**
Overall	**0.98**	**1.89**	**0.60**	**3.47**	**7.60**	**17.64**

Table 9.7 : Break - up of manufacturing cost per kg of made tea and total recurring cost per kg (in Rs.) by size - class at 1989 - 90 prices.

Size - class (ha)	Wage	Fuel	Repair and maintenance of machinery	Total manufacturing cost	Cost on common service, benefits and taxes	Total recurring cost
1	2	3	4	5(Col. 2 to Col.4)	6	7
Below 200	1.51	2.32	0.77	4.60	9.32	**21.49**
200 - 400	1.07	2.14	0.57	3.78	8.22	**19.03**
401 - 600	1.05	1.86	0.71	3.64	7.23	**17.17**
Above 600	0.85	1.76	0.51	3.12	7.44	**17.03**
Overall	**0.98**	**1.89**	**0.60**	**3.47**	**7.60**	**17.64**

Fig : 9.1 Relationship between yield/ha of green leaf (in kg) & cost/kg of green leaf (in Rs.)

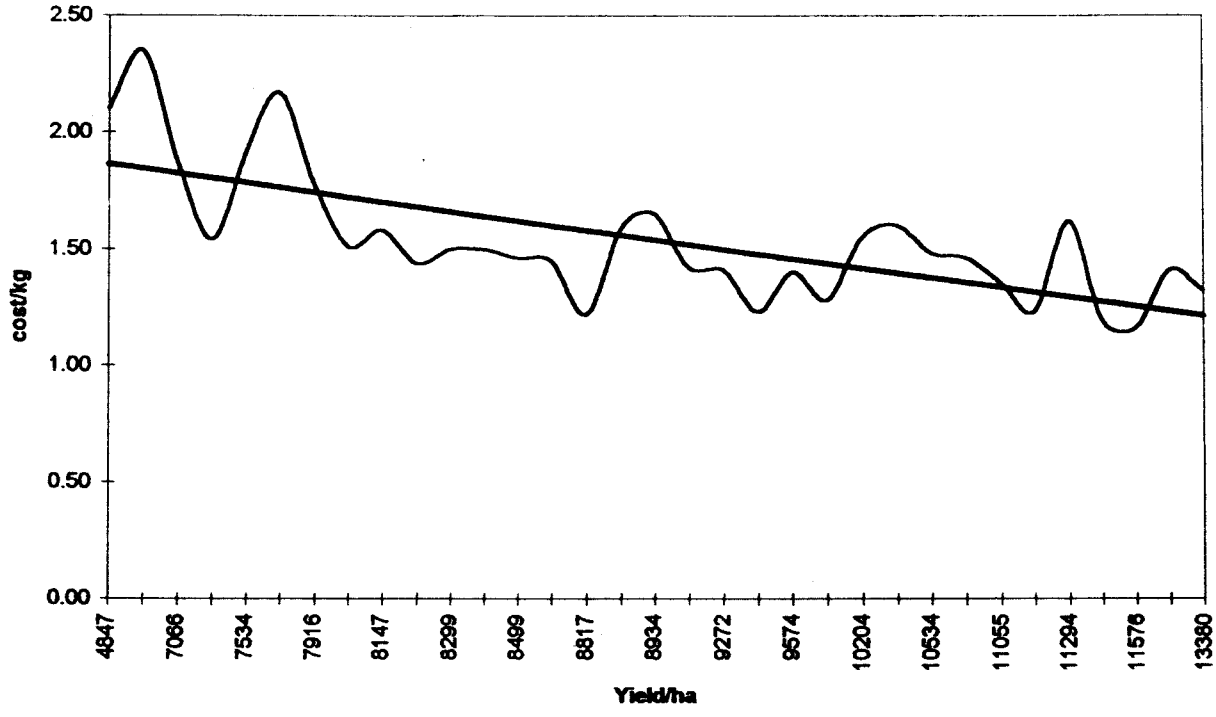
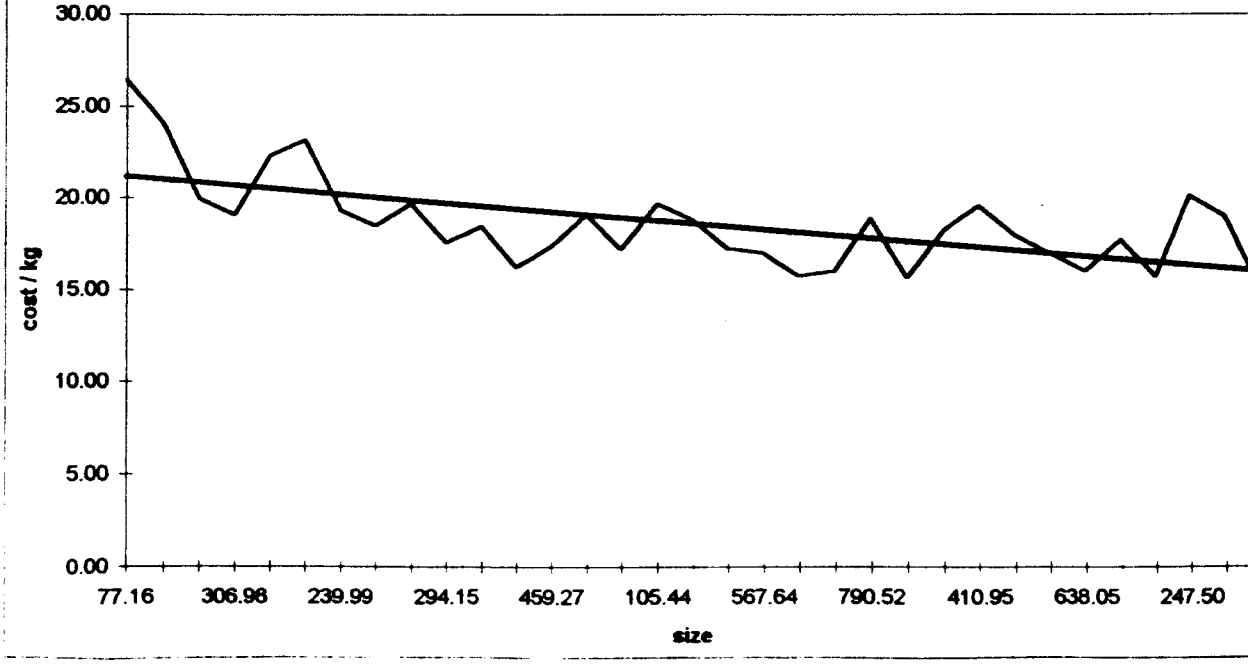


Fig:-9.2 Relationship between size of the garden (in ha) & cost / kg of made tea (in Rs.)



transport (excluding that part required for carrying the end products from production to sale point), food subsidy and fuel to workers , liveries and other perquisites , bonus , leave salary , medical care, insurance , cesses , rent , taxes , excise duties and other miscellaneous items. All these items have been considered under a broad category as 'common service , benefit and taxes'. Total cost per kg of made tea has been worked out by summing over cost of equivalent quantity of green leaf required in producing one kg of made tea , cost of manufacturing per kg of made tea and cost attributable to common service, benefits and taxes. It is seen from **Table 9.5** that the cost per kg of made tea on account of these items constituting 'common service, benefit and taxes' is as high as Rs.7.60 occupying 43.1 per cent of total cost while the respective cost share of green leaf and manufacturing are being 37.3 and 19.7 per cent respectively. Cost per kg of made tea is found Rs.17.64. A comparison of manufacturing cost and total cost per kg of made tea by ownership and size-class is made respectively in **Table 9.6** and **Table 9.7.** The revelation as elicited in the farm sector in respect of cost situation by ownership and size-class is also valid for manufacturing sector. Here also supremacy of Agency House and biggest size groups over others in minimizing almost all components of manufacturing cost and total manufacturing cost is founded. By and large it is corroborative for common cost also. And hence lowest cost per kg of made tea is noted for the tea estates belonging to the Agency House followed by those under Govt. Undertaking. In case of size-wise comparison a clear cut inverse relation between size of garden and cost per kg of made tea is discerned (**Table 9.7**). It is also visualized that a garden above 400 hectare in size has its cost per kg of made tea below the mean level. The implication is that under the present leaf production and tea manufacturing technology size of a tea garden in Dooars exceeding 400 hectares is able to enjoy internal economy by better utilization of capital resources and thereby minimize the unit cost. This finding corroborates with the earlier observation under **Section 5.3** that the gardens belonging to larger size groups are maintaining relatively improved types of manufacturing machinery and appliances and thereby increasing their operational efficiency. Similar observation is also recorded for Agency House. In respect of operational efficiency of manufacturing unit the position of gardens under Govt. Undertaking coming next to those under Agency House has also elicited in **Section 5.3**. Thus the cost situation of the gardens by ownership type as noted above also conforms to the earlier findings on opreration efficiency. The cost situation according to size of garden is depicted in **Fig. 9.2**. The correlation coefficient between size of garden and unit cost of made tea is noted negetive and as high as –0.61 which is highly significant at 1 per cent probability level.
