CHAPTER FOUR

MAIN FINDINGS AND CONCLUSIONS

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4.1 INTRODUCTION

In this chapter we shall discuss the main findings and conclusions of the present study.

The relationship between size of farm and agricultural productivity was to be assertained through the sample survey of the farmers. The design of the sample was as follows.

4.2 SELECTION OF SAMPLE

As already mentioned in chapter II the selection of sample was made by following a multi-stage sampling.

At the first stage out of 115 villages of Madha taluka, 10% i.e. 12 villages were selected by following the Grid System on the basis of the map of Madha Taluka.

At the second stage, 10 farmers from each of the villages were selected by simple randam sampling.

All such 120 farmers who constituted the sample were contacted personally for obtaining the information relating to their land, land use and production activities.

For this a structured schedule was administered to them. The results of this sample survey and the main findings there from are given below.

4.3 SIZE GROUPWISE CLASSIFICATION

The land ownership of the sample farmer varied between 1 acre to 140 acres of land . Majority of the farmers in the sample belonged to lower levels of land holding. For classifying the information suitably the 120 farmers were grouped into 8 different groups. These groups and the number of farmers in the sample belonging to these 8 groups are shown in the following table.

TABLE NO. 4.1

SIZE GROUPWISE CLASSIFICATION OF SAMPLE FARMERS

Size Group	No. of sample Farmers	% to total
1 to 10 acre	33	83.33
11 to 20 acre	31	25.33
21 to 30 acre	21	17.5
31 to 41 acre	17	14.16
41 to 50 acre	11	9.16
51 to 60 acre	4	3.33
61 to 70 acre	2	1.66
Above 140 acre	1	-

It can be seen from the above table that most of the farmers belonged to the first group of 1 to 10 acres of land holding. To be precise 64 out of 120 i.e. more than 50% of the farmers belonged to first two groups of 1 to 10 acres and 11 to 20 acres of land holding. There was only one farmer in the sample having more than 140 acre of land.

4.4 PRODUCTIVITY RANGE

In case of all the 120 farmers the revenue productivity has been calculated on the basis of their output figures of different crops and the prices of the concerned crops for the five years from 1981-82 to 1985-86. The agricultural income of all these farmers belonging to various size groups were collected together in order to arrive at the productivity range of the average farmer of each group. The variations as reflected in the sense average income data are significant in the sense that except a few cases the average income of the smaller farmers is very much comparable with that of larger farmers. In certain cases the smaller farmers have earned more than the larger farmers. The total average income per acre of land belonging to different categories of farmers was calculated by first getting a total of the agricultural income of all the farmers dividing it by the total land of the farmers belonging to each of the categories. The relevant data are presented in the following table. 4.2 (Appended)

It can be seen from the above table that there are wide fluctuations in the average income per acre of the farmers of various categories. The lowest per acre income belong to the last size group of farm i.e. farmer having more than 140 acres of land. In contrast, the smallest farmers on an average enjoyed reasonably higher income in almost all the five years.

4.5 TIME SERIES RESULTS OF INCOME

Since the data obtained from the 120 farmers were for period of 5 years. We ~~g~~hrought it worth while to observe the trends in the average or per acre incomes of different size groups. Since the trend was not identifiable from the data, it was processed to get the two yearly moving average for all the size groups. The relevant data of the moving averages are presented in the following table.

TABLE NO. 4.3 (Appended)

It can be seen from the ~~above~~ table that the per acre agricultural income of all the categories except category 'G' i.e. of 61 to 70 acres land holding show a declining trend. That exception can also not be considered

as very significant since the sample of only two farmers belonged to that category. On the whole therefore, it can be mentioned that the average agricultural income has declined.

4.6 CO-EFFICIENTS OF CORRELATION

For understanding the relation between size of farm and revenue productivity the 'r' values i.e. the co-efficients of correlation were calculated for the first four categories of farmers belonging to the size groups of 1-10 acres, 11-20 acres, 21-30 acres and 31-40 acres of land holding. The 'r' values were calculated by adopting the following formula.

$$r = \frac{\Sigma x\, y}{\sqrt{\Sigma x^2 \times \Sigma y^2}}$$

The results of these calculations are presented in the following table no. 4.4.

TABLE NO.4.4

CO-EFFICIENTS OF CORRELATION RESULTS

No. of Sample	Size Group	1981-82	1982-83	1983-84	1984-85	1985-86
33	1 to 10 acre	0.82	0.49	0.51	0.06	0.36
31	11 to 20 acre	-0.43	-0.61	-0.48	-0.54	-0.31
21	21 to 30 acre	-0.01	+0.55	-0.07	-0.40	-0.30
17	31 to 40 acre	0.96	0.07	0.07	0.59	-0.35

(The basic tables of estimation of 'r' values are appended to this chapter).

The data given above lead us to the following important conclusions.

1. There is no perfect positive or perfect negative correlation found in case of any of the categories.
2. Positive 'r' values lesser than one are found in case of the smallest farmers. It implies that among the smallest farmers, as the land holding increased the revenue productivity also increased.

3. In case of the medium farmers having 11 to 30 acres of land the 'r' values are negative. This implies that for such farmers a rise in their land holding resulted in a fall in their revenue productivity.

4. It is surprising to note that for the large farmers having land holding of 31 to 40 acres, the 'r' value are positive. The only explanation for this disturbing results could be that the size of sample for this category has been relatively small.

The above findings when considered together disprove our original hypothesis that larger the size of the farm, larger is the revenue productivity. It is found that the smaller farms have resulted in better productivity. This only confirms the results of some of the earlier studies on the subject which have been reviewed in the first chapter.

4.7 IMPLICATIONS

The findings of this study have certain important policy implications. The main problem of Indian Agriculture has been that of lower productivity.

As it is found that the smaller farmers are better managed and more productive, all efforts at the various levels of government for implementing various schemes need to be directed towards the smaller farmers. If this is done with a proper emphasis on certain aspects and a thorough thinking in the problem would help solving the major problems of Indian agriculture.

TABLE NO. 4.3

Year	A		B		C		D		E	
	Average Agri. Income	2 Yearly moving Average	Average Agri. Income	2 Yearly moving Average	Average Agri Income	2Yearly moving Average	Average Agri. Income	2 Yearly moving average	Average Agri Income	2 Yearly moving Average
1981-82	1072.53		803.64		727.00		873.73		899.61	813.60
1982-83	864.81	968.67	735.76	769.70	580.97	653.98	655.89	764.81	727.60	739.00
1983.84	647.81	656.31	610.27	673.01	543.86	562.41	617.24	636.56	150.40	703.67
1984-85	639.43	643.62	646.38	628.32	560.20	552.06	498.31	557.77	656.95	567.88
1985-86	536.22	588.32	688.38	667.38	947.25	753.75	442.66	470.48	478.82	-

Year	F		G		H	
	Average Agri.Income	2 Yearly moving Ave.	Average Agri.Income	Two Yearly Moving Ave.	Average Agri.Income	2 Yearly Moving Ave.
1981-82	1026.26		829.81		810.00	
1982-83	819.84	923.05	910.40	870.10	355.00	582.50
1983-84	955.58	887.71	1062.25	986.32	383.00	369.00
1984-85	837.95	896.76	1217.10	1139.67	399.00	391.00
1985-86	738.19	788.07	1034.40	1125.75	378.00	388.50

A	1 to 10 acre	E -	41 to 50 acre
B	11 to 20 acre	F -	51 to 60 acre
C	21 to 30 acre	G -	61 to 70
D	31 to 40 acre	H -	Above 71

TOTAL AVERAGE INCOME FOR SAMPLE FARMERS

Name of sample farmar	Size group	Total Land	1981-82 Total Income R	1981-82 Average Income R	1982-83 Total Income R	1982-83 Average Income R	198384 Total Income R	198384 Average Income R	1984-85 Total Income R	1984-85 Average Income R	1985-86 Total Income R	1985-86 Average Income RZ
33	1 - 10	216	231667	1072.53	186801	864.81	139927	647.81	138118	639.43	116041	537.22
31	11 - 20	486	390571	803.64	357582	735.76	296595	610.27	314142	646.38	334554	688.38
21	21 - 30	549	399162	727.00	318955	580.97	298582	543.86	307585	560.26	520041	947.25
17	31 - 40	589	514631	873.73	386324	655.89	363559	617.24	293506	498.31	260828	442.66
11	41 - 50	524	471397	889.61	381267	727.60	393210	750.40	344243	656.95	250902	478.82
4	51 - 60	230	236040	1026.26	188565	819.84	219785	955.58	192730	837.95	169785	738.19
2	61 - 70	135	112025	829.81	122905	910.40	143440	1062.25	164309	1217.10	139655	1034.40
1	above 100 140	140	112160	810.00	49710	355	53650	383.00	55870	399.00	52982	378.00