CHAPTER VIII

SUMMARY
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The study of cost structure, volume of production and level of farm income is of significant importance to present day farm economy of our country, where every effort has being made to give remunerative prices to the farmers for increasing production. What the level of profit is and remunerative practices would be, are the questions that can be correctly answered by a systematic study of costs, returns and net profit per hectare in relation to given resource situations.

It is a matter of great satisfaction that at present the Government is trying to make overall improvement in agriculture in our country. For affecting improvements in agriculture, an analytical study of factors affecting costs and returns in farming is of paramount importance. This study would be very much helpful in providing basic informations for proper planning of agriculture in the region. Though, there had been several studies dealing with the estimation of costs, returns, net income and productivities of different resources in other regions, but regionwise such studies are almost lacking completely.

Therefore, the present study was undertaken to analyse the resource situation and enterprise combination of different farms, and to study the cost structure and level of income on different farm and to find out productivity of different farm resources.

This study relates to ten selected village of Mahewa and Ajitmal Block belonging to Bharthana and Auriya tehsils respectively in the central part of the Etawah district of Central
Uttar Pradesh and cover 100 cultivators and has a reference to the agricultural year 1st July'1983 to 30th June'1984.

The selection of sampling techniques relevant to the research problem was stratified random sampling used to select the villages as primary unit and cultivators of different size groups. The holdings were stratified into five size groups, viz. below 1 hectare, 1 - 2 hectare, 2 - 4 hectare, 4 - 6 hectare and 6 hectare and above 6 hectare. In all 10 villages (five from each blocks) selected from two adjacent blocks. The cultivators from each selected village (five cultivators having secured irrigation and five cultivators having insecure irrigation) were selected randomly for intensive study. Thus, the sample is comprised of 100 cultivators in all.

On analysis of the farm structure, it was observed that the total area under cultivation was 119.698 hectare of which 13.63, 16.48, 18.34, 18.80 and 32.75 per cent was under secured irrigated farms and 75.432 hectare of which 32.82, 10.79, 13.33, 17.93 and 25.08 per cent was under insecure irrigated farms, distributed among the various size groups in questions. The average size of farm measured was 2.393 hectare in case of secured irrigation as against to 1.508 hectare in case of insecure irrigated farms. The average size of farm in both categories increased with the increase in the size of farms. The difference in the average size of farms in both categories was mainly due to the difference in the average size of the largest size group.

The extent of fragmentation is higher on smaller size groups and there is no marked difference on both secured and insecure
irrigated farms. The system of fragmentation prevailed in the sample region need consolidation of holding. On the other hand, the extent of irrigation is higher on both small sized farms of secured and insecure conditions and thus it reflects the need for more irrigation facilities on medium and large sized farms of both the categories.

The extent of irrigation on irrigated farms is decreasing as size of farms is increasing with exception of few medium sized farms. But on insecure irrigated farms, it is increasing with the increase in the size of farms with exception of few farms of medium size groups. On an average, the total irrigated area being 78.98 hectares, canal, tubewells, wells, canal + tubewells and pumping sets occupied 29.268, 23.744, 19.714, 0.124 and 6.130 hectares respectively in case of secured irrigation as against to 47.096 hectare, of which canal constituted 32.112 and pumping sets 14.984 hectares in case of insecure irrigated farms. The total irrigated area was more in case of secured irrigated farms as compared to insecure irrigated farms. Wheat, pea, mustard and sugarcane covered the major portion of total irrigated area in both secured and insecure situations. The entire area under Bajra & Jowar+Arhar was unirrigated in both the situations.

So far as availability and utilization of human family labour is concerned, the study revealed, that the availability of family labour per farm indicated a decreasing trend with an increase in the size of holdings whereas utilization of family labour showed negative correlation with the size of holdings. The number of
farm workers engaged mainly in self cultivation on per farm basis worked out to 2.64 in case of secured irrigated as against to 2.19 in case of insecure irrigation on an overall basis. The number of farm workers per hectare was 1.14 in case of secured irrigation as against to 1.32 in case of insecure irrigated farms.

The average number of drought animals per farm worked out to be 2.47 in case of secured irrigation as against to 2.57 in case of insecure irrigation. Thus, it indicates that all small sized farms in both categories were having drought animals in surplus. The utilization of animal labour varies directly with the size of farms. The average cultivated area per pair of drought animals came to 2.842 hectare in case of secured irrigation as against to 2.481 hectare in case of insecure irrigation. Thus, on secured irrigated farms, the drought animals were observed to be utilized for little more than that of insecure irrigated farms.

Now, turning to the pattern of investment, it was found out that level of investment per farm and per hectare came to Rs.245440.00 and Rs.50848.00 respectively in case of secured irrigation against Rs.175968.00 and Rs.47160.00 in case of insecure irrigation. Land was the main item of assets, accounting, on an average, for about 88.1 and 90.3 per cent on secured and insecure irrigation situations respectively of the total value of assets and showed positive correlation with the size of farm.

The cropping pattern on the farms of both the categories does not differ significantly. The distribution of crops shows the existence of subsistence nature of farming in the region on both the categories of farms. An other important feature emerging
out of the cropping pattern on the sample farms is that the proportionate area under all Rabi crops was higher on secured irrigated farms as compared to insecured irrigated farms whereas reverse trend was observed in case of Kharif crops.

The pattern of land use reveals that in Kharif season about 58 per cent was under secured irrigation and 63 per cent on insecured irrigated farms of the total cultivated area and in Rabi season, 42 per cent and 37 per cent was on secured and insecured irrigated farms respectively. In Kharif, bajra account for major portion of 39.89, 49.01 per cent on secured and insecured irrigated farms respectively of the total cultivated area. Other crops in order being paddy, sugarcane and Jowar+Arhar constituted 19.55, 15.60 and 15.64 per cent respectively in case of secured irrigation as against to 16.65, 12.56 and 11.87 per cent in case of insecured irrigation. In Rabi season wheat, pea, mustard and other crops occupied 36, 29.61, 21.52 and 12.85 per cent respectively in case of secured irrigation as against to 36.83, 27.31, 22.99 and 12.87 per cent respectively in case of insecured irrigated farms, the proportion of these crops did not differ significantly in different size groups. The preponderence of Kharif crops on both categories of farms accounting about 69.74 to 74.40 per cent of the total cropped area. The proportionate of area under all Rabi crops was higher on secured irrigated farms as compared to insecured irrigated farms.

Average intensity of cropping in case of secured irrigation worked out to about 171 per cent as against to 144 per cent in case of insecured irrigation and varied inversely with the size of farms.
On an average, the total food crops accounts for about 77 per cent of the total cultivated area and non-food crops for about 23 per cent in case of secured irrigation against 80 and 20 per cent food and non-food crops respectively in case of insecure irrigation. The Kharif crops accounted for about 54 per cent of the total cultivated area, of which about 42 and 12 per cent area occupied by food and non-food crops respectively, in case of secured irrigation as against to 52 per cent, of which 42 and 10 per cent occupied by food and non-food crops respectively in case of insecure irrigation. The Rabi crops accounted for 46 per cent of the total cultivated area, of which about 34 per cent was occupied by food crops and 12 per cent by non-food crops in case of secured irrigation as against to the same area of which about 37 and 9 per cent area was occupied by food and non-food crops respectively in case of insecure irrigated farms. Thus, the variation in both secured and insecure conditions is meagre. The major portion of the cultivated area was covered by food crops only. It proves that farming in this region is of subsistence nature.

The average total cost per farm being Rs.8536.00, Rs.7660.36 constituting 89.23 per cent were cash expenses and Rs.875.64 being 10.77 per cent was of kind expenses in case of secured irrigation as against to Rs.7304.00, Rs.760.32 (10.53 per cent) on account of kind expenses and Rs.6543.68 (89.47 per cent) on account of cash expenses in case of insecure irrigated farms.
The average yield of all crops was higher on secured irrigated farms in case of smaller size groups when compared to insecured irrigated farms. While reverse was the case of middle and large sized farms where yield of bajra, sugarcane, and pea was higher on insecured irrigated farms and paddy, wheat, and other crops was higher on secured irrigated farms. Thus, it can safely be concluded that the value of by-products for important crops on secured irrigated farms was more in comparison to insecured irrigated farms, and the value of main product was also higher on secured irrigated farms except in case of bajra in comparison to insecured irrigated farms.

The analysis of cost concept revealed that the average cost $A_1$ and $A_2$ per farm, per hectare, and per cropped hectare came to Rs. 6740.00, Rs. 1700.00 and Rs. 1844.00 respectively in case of secured irrigation as against to Rs. 5800.00, Rs. 1684.00 and Rs. 1456.00 in case of insecured irrigation, as both the cost are same because of no leased land was found on the sample farms. The per farm, per hectare, and per hectare of cropped area, cost B came to Rs. 8072.00, Rs. 2048.00, and Rs. 1788.00 respectively in case of secured irrigation as against to Rs. 6856.00, Rs. 2012.00, and Rs. 1736.00 respectively in case of insecured irrigation and cost C Rs. 8536.00, Rs. 2284.00, and Rs. 1992.00 respectively in case of secured irrigation as against to Rs. 7304.00, Rs. 2256.00, and Rs. 1944.00 respectively in case of insecured irrigation. The average cost per farm came to Rs. 8536.00 varying from Rs. 2380.00 in size group I to Rs. 22316.00 in size group V in case of secured irrigation as against to Rs. 7304.00 varying from Rs. 1844.00 in size group I to Rs. 15208.00 in size group V in case
of insecured irrigation. Human labour, bullock labour and rental value of land accounted for major portion of the value of inputs in both the situations. But total value of input per farm on small, medium and large sized secured irrigated farms, was observed to be higher in comparison to insecured irrigated farms. The value of hired human labour was found to be increasing with the increase in the size of farms in both the situations. In terms of percentage, it clearly reveals that on an average, the total human labour accounted for highest percentage i.e. 29.31 to the total cost followed by rental value of land, being 22.53 per cent, bullock labour 14.71 per cent, manure and fertilizer 16.60 per cent, seed 8.29 per cent and irrigation 3.94 per cent in case of secured irrigation. The average cost per cultivated hectare came to Rs.2284.00 which varied from Rs.3069.00 in size group I to Rs.1680.00 in size group V in case of secured irrigation as against to Rs.2256.00 varying from Rs.2676.00 in size group I to Rs.1608.00 in size group V in case of insecured irrigated farms and inverse relationship was observed with the size of farms in both situations. The rental value of land accounted for the highest percentage i.e. 26.95 to the total cost followed by human labour, bullock labour, manure and fertilizer, seeds and irrigation being 22.73, 22.99, 8.54, 7.48 and 5.78 per cent respectively in case of insecured irrigation as against to rental value of land accounts for the highest percentage i.e. 25.84 to total cost followed by human labour, bullock labour, manure and fertilizer, seed and irrigation 25.66, 19.84, 8.64, 8.00 and 6.75 per cent respectively in case of insecured irrigation area. The cost of human labour per cultivated hectare decreases with the increase in the size of farms. On secured irrigated farms of all size groups, the value of inputs was
higher in comparison to insecure irrigated farms. The value of human labour was found to be increasing with the increase in the size of farms in both the situations, indicating thereby that large sized farmers do not work by their own hands and they invest more for hiring human labourers in comparison to small farmers.

The average total cost of input factors per farm in bajra, paddy, sugarcane, wheat, mustard, pea, jowar+arhar and others constituted to 19.72, 8.00, 18.97, 16.00, 13.00, 11.00, 10.00 and 4.00 per cent of the total input cost of the farm as a whole respectively in case of secured irrigation as against to bajra, paddy, sugarcane, wheat, mustard, pea, jowar+arhar and others for 23.00, 7.00, 19.00, 18.00, 9.00, 11.00, 6.00 and 6.00 per cent in case of insecure irrigations. On an average, bajra, sugarcane and wheat accounted the major portion of the value of inputs on both the situations.

The analysis of output revealed that the average per farm came to ₹.13572.00, varying from ₹.4176.00 in size group I to ₹.34736.00 in size group V in case of secured irrigation as against to ₹.11176.00, varying from ₹.3340.00 in size group I to ₹.21408.00 in size group V in case of insecure irrigated area. The average output per cultivated hectare came to ₹.3820.00, varying from ₹.5372.00 in size group I to ₹.3008.00 in size group V in case of secured irrigated area as against to ₹.3796.00, varying from ₹.4828.00 in size group I to ₹.2904.00 in size group V in case of insecure irrigated farms. The average output per hectare of cropped area was observed to be ₹.3332.00, varying from ₹.4416.00
in size group I to Rs. 2684.00 in size group V in case of secured irrigated situations as against to Rs. 2568.00 in case of insecured situations. It was also observed that the output per farm was increasing with the increase in the size of farms whereas per hectare of cultivated area it was decreasing with the increase in the size of farms on both secured and inseured irrigated farms.

The contribution of food crops being 59.15 and 40.85 per cent to total value of output of the farm was higher as compared to respective values being 63 and 37 per cent of non-food crops of secured and inseured irrigated farms. The average contribution of non-food crops was increasing with the increase in the size of farm under secured irrigation. The contribution of output of bajra, paddy, wheat, pea, jowar+arhar and others, sugarcane and mustard was observed to 9, 11, 16, 9, 9, 6, 16 and 22 per cent respectively in case of secured irrigation as against to respective share being 8, 10, 19, 14, 8, 5, 18 and 16 per cent in case of inseured irrigated farms. Thus, it is obvious that bajra, paddy, wheat, mustard and sugarcane are produced more on both categories of farms in the region as a whole. The contribution of main product in case of paddy, pea and jowar+arhar was higher in comparison to other crops. The contribution of by-product in case of sugarcane, wheat and bajra was higher in comparison to other crops on both the categories being slightly higher on secured irrigated farms in case of paddy and wheat. Thus, it can be concluded that the value of by-products for important crops on irrigated farms was significantly higher in comparison to inseured irrigated farms, and the value of main product was also greater on
secured irrigated farms except in case of bajra in comparison to insecure irrigated farms.

The net income on an average per farm came to Rs.5068.00, varying from Rs.1796.00 in size group I to Rs.12420.00 in size group V in case of secured irrigated farms as against to Rs.3864.00 varying from Rs.1496.00 in size group I to Rs.6200.00 in size group V in case of insecure irrigation. The average net income per hectare of cultivated area came to Rs.1536.00, varying from Rs.2312.00 in size group I to Rs.1172.00 in size group IV in case of secured irrigated area as against to Rs.1640.00 varying from Rs.974.00 in size group II to Rs.2152.00 in size group I in case of insecure irrigation. The average net income per hectare of cropped area was observed to be Rs.1340.00 varying from Rs.1900.00 in size group I to Rs.1044.00 in size group III in case of secured irrigation as against to Rs.820.00 in size group II to Rs.1788.00 in size group III in case of insecure irrigation. The net income per farm was found to be higher on secured irrigated farms in comparison to insecure counterpart, and was increasing with the increase in the size of farms on both categories of farms. But on the basis of cultivated and cropped hectare, the net income was higher on small sized secured irrigated farms in comparison to insecure irrigated farms. On medium sized farms, it was higher on insecure irrigated farms as compared to secured irrigated farms. On large sized farms, the net income was slightly higher on secured irrigated farms in comparison to insecure irrigated farms.

The analysis of farm business income revealed that farm
business income on an average, of per farm came to Rs.7780.00 varying from Rs.2548.00 in size group I to Rs.22164.00 in size group V in case of secured irrigated area as against to Rs.6720.00 varying from Rs.2048.00 in size group I to Rs.14520.00 in size group V in case of insecured irrigated farms. The farm business income per hectare of cultivated area worked out to Rs.3276.00, Rs.2544.00, Rs.1672.00, Rs.1496.00 and Rs.1620.00 in size group I, II, III, IV and V respectively in case of secured irrigation as against to Rs.2976.00, Rs.1692.00, Rs.2680.00, Rs.1672.00, and Rs.1536.00 in respective size groups in case of insecured irrigated farms, whereas average farm business income per hectare of cropped area came to Rs.1844.00 varying from Rs.2692.00 in size group I to Rs.1360.00 in size group IV in case of secured irrigation as against to Rs.1820.00 varying from Rs.2464.00 in size group I to Rs.1356.00 in size group V in case of insecured irrigated farms. The farm business income per farm was increasing with the increase in the size of farms. On per hectare cultivated area and per hectare of cropped area also, it was higher on secured irrigated farms in comparison to insecured irrigated farms. On the other hand, on small as well as on large sized farms, it was higher on secured irrigation as compared to insecured irrigation. But on medium sized farms, it was higher on insecured irrigation as compared to its counterparts.

The family labour income per farm worked out to Rs.2336.00, Rs.1876.00, Rs.1108.00, Rs.1200.00 and Rs.1192.00 in size group I, II, III, IV and V respectively on secured irrigation as against to Rs.2204.00, Rs.1124.00, Rs.1992.00, Rs.1200.00 and Rs.1168.00 in size...
group I, II, III, IV and V respectively in case of insecured irrigation. The family labour income on an average per hectare of cultivated area in case of secured and insecured irrigation came to ₹.1772.00 and ₹.1784.00 respectively. The average family labour income per hectare of cropped area came to ₹.1544.00 varying from ₹.2336.00 in size group I to ₹.1108.00 in size group III on secured irrigated farms as against to ₹.1536.00 varying from ₹.2204.00 in size group I to ₹.1124.00 in size group II in case of insecured irrigated farms. The average family labour income per farm was higher on secured irrigated farms in comparison to insecured irrigated farms. On the other hand, on small as well as on large sized secured irrigated farms, it was higher in comparison to insecured irrigated farms; whereas on medium sized farms, it was higher on insecured irrigated farms in comparison to secured irrigated farms.

The average farm investment income per farm, per hectare of cultivated and cropped area worked out to ₹.7120.00, ₹.1816.00 and ₹.1580.00 respectively on secured irrigation as against to ₹.6280.00, ₹.1872.00 and ₹.1616.00 respectively in case of insecured irrigation. The farm investment income per farm was higher on secured irrigated farms as compared to insecured counterpart on an average. But per hectare cultivated area as well as cropped area, it was higher on insecured irrigated farms in comparison to secured irrigated farms.

The average output-input ratio at cost $A_1/A_2$, B and C came to 2.22/2.22, 1.89 and 1.81 respectively on secured irrigation.
as against to 2.23/2.23, 1.82 and 1.68 respectively in case of insecured irrigation. The average output-input ratio was higher on secured irrigation against to insecured irrigated farms.

The average capital turnover came to about 7.6 per cent varying from about 6 per cent to 10 per cent in different size groups on secured irrigated farms as against to 8.11 per cent varying from 6.44 per cent in size group IV to 10.01 per cent in size group I in case of insecured irrigation. The average capital output ratio came to 0.07 on secured irrigation as against to ₹0.08 in case of insecured irrigation. Thus, on an average, the capital turnover was higher on insecured irrigated farms in comparison to secured irrigated areas.

Total human labour used per farm worked out to 199 mandays, of which 48 per cent was account by family labour and 52 per cent by hired labour in case of secured irrigation as against to 166 mandays in case of insecured irrigation and the contribution of family and hired labour was similar. The proportion of family labour varied inversely while that of hired labour directly with the size of farms on both categories. On large sized farms, the family labour mandays were almost low because farmers belong to higher class.

The average utilization of animal labour per farms came to 76 pair days on secured irrigated farms and 71 pair days on insecured irrigated farms and varied directly with the size of farms. The average utilization of animal labour per hectare of cultivated and cropped area came to 24 pair days and 21 pair days respectively on secured irrigation as against to 21 pair days and
18 pair days respectively in case of insecure irrigated farms.

The results of regression analysis of the sample farms of secured irrigation under various size groups and farm as a whole of insecure irrigation condition clearly indicated that the significant input variables particularly manure-fertilizer and irrigation accounted for about 84 per cent, 86 per cent, 89 per cent, 85 per cent, 89 per cent and 88 per cent of the total observed variation in the value of gross return on the farms of below 1 hectare, 1 - 2 hectare, 2 - 4 hectare, 4 - 6 hectare, 6 hectare and above 6 hectare and the farm as a whole (all farms) of secured irrigation condition respectively, while about 86 per cent variation in the gross output was observed in case of insecure irrigated farms as a whole (all crops).

The elasticities of production of all individual input variables on the sample farms in almost all the size groups and farm as a whole of both secured and insecure irrigation condition were observed to be positive and less than one, indicating thereby, diminishing return to each individual input variable. Among the significant variable inputs, manures and fertilizer and irrigation indicated higher elasticity of production on the farms in almost all the size groups and the farm as a whole under irrigation condition and manure-fertilizer in insecure irrigation condition in comparison to the human, bullock labour and seed.

The marginal value productivities of manure-fertilizer being Rs.7.32, Rs.7.48, Rs.4.80, Rs.6.35, Rs.6.51 and Rs.6.51 and those of irrigation being Rs.7.72, Rs.6.72, Rs.4.38, Rs.5.99, Rs.6.95 and Rs.6.27 on the farms, below 1 hectare, 1 - 2 hectare, 2 - 4 hectare, 4 - 6 hectare, 6 hectare and above 6 hectare on the farm as a
whole (all farms) of secured irrigation were significantly higher as compared to human labour being Rs.1.63, Rs.2.67, Rs.1.96, Rs.2.30, Rs.2.32 and Rs.2.10, bullock labour being Rs.1.54, Rs.2.60, Rs.1.83, Rs.1.99, Rs.1.96 and Rs.1.99 and seed being Rs.2.13, Rs.3.02, Rs.2.09, Rs.3.13, Rs.3.20 and Rs.2.61 respectively. On the other hand, the marginal productivity of manure-fertilizer being Rs.5.68 was observed to be significantly higher as compared to human labour, bullock labour and seed being Rs.2.33, Rs.2.25 and Rs.2.67 respectively. The production elasticity of irrigation in case of insecured irrigated farms was found to be non-significant. This indicated that there is much scope of getting higher returns by increasing the level of manure and fertilizer and irrigation on the farms of various size group and farm as a whole of both secured and insecured irrigation situation.

The regression coefficient of seed on the farms below 1 hectare, 1 - 2 hectare and 2 - 4 hectare size group was found to be non-significant whereas regression coefficient of bullock labour on the farms below 1 hectare, 6 hectare and above 6 hectare size group was observed to be significant on 10 per cent level. This shows that seed and bullock labour had no effect on the returns of the farms of concerned size groups. On the other hand, cost of human labour, bullock labour and seed should be reduced to that level where their respective marginal productivity equal to their respective prices and the funds thus, available should be diverted towards manure-fertilizer and irrigation under capital constraint.
Thus, under capital constraint, the maximum return on the farms could be attained by allocating the limited capital among various competing uses in such a way that the marginal value product per unit of money invested on each input variable becomes equal.

Now, focusing on the optimum and existing levels of various variable inputs on the farms of various size groups and farm as a whole of secured irrigation condition and farm as a whole of insecured irrigation situation, the study highlighted the facts that optimum levels of manure-fertilizer and irrigation on the farms of almost all size groups and farm as a whole of secured irrigation were significantly higher being Rs. 591.33, Rs. 476.31, Rs. 442.30, Rs. 288.89, Rs. 277.84 and Rs. 415.32 for manure-fertilizer and Rs. 480.45, Rs. 324.12, Rs. 317.23, Rs. 211.93, Rs. 222.52 and Rs. 312.45 for irrigation on the farms below 1 hectare, 1 - 2 hectare, 2 - 4 hectare, 4 - 6 hectare, 6 hectare and above 6 hectare and farm as a whole respectively of secured irrigation as compared to their respective existing levels of Rs. 223.07, Rs. 238.09, Rs. 243.30, Rs. 143.64, Rs. 136.64 and Rs. 197.33 for manure-fertilizer and Rs. 171.97, Rs. 180.28, Rs. 191.27, Rs. 111.38, Rs. 102.48 and Rs. 154.17 for irrigation. Similarly, the optimum level of manure and fertilizer on the farm as a whole of insecured irrigated farms was observed to be significantly higher being Rs. 390.76 as compared to its existing level of Rs. 192.66. On the contrary, the existing levels of human labour, bullock labour and seed on the farms of almost all size group and the farm as a whole under both conditions of secured and insecured irrigation were found to be significantly higher as compared to their optimum levels.
An examination of the regression equations developed at optimum levels of resource inputs revealed that the value of output in rupees per hectare on the farms below 1 hectare, 1 - 2 hectare, 2 - 4 hectare, 4 - 6 hectare and 6 hectare and above 6 hectare and farm as a whole (all crops) of secured irrigation condition can be maximised to \( \text{Rs.} 7153.00, \text{Rs.} 6315.39, \text{Rs.} 5611.77, \text{Rs.} 3854.78, \text{Rs.} 4057.89 \) and \( \text{Rs.} 5513.15 \) respectively as against to their respective existing value of output of \( \text{Rs.} 5372.00, \text{Rs.} 4344.00, \text{Rs.} 3528.00, \text{Rs.} 2852.00, \text{Rs.} 3008.00 \) and \( \text{Rs.} 3820.00 \), resulting thereby an additional net profit of 31.29 per cent, 45.38 per cent, 59.06 per cent, 38.66 per cent, 34.90 per cent and 44.35 per cent over the original level of output on the farms of various size groups in question and farm as a whole. Similarly, return on the farm as a whole under insecure irrigation condition can be maximised to \( \text{Rs.} 4536.28 \) as against to its original value of \( \text{Rs.} 3796.00 \). This resulted an additional return to \( \text{Rs.} 740.28 \) per hectare whereas the additional return in case of secured irrigated farm as a whole was observed to \( \text{Rs.} 1693.15 \). The significant difference in the level of output which can be maximised under capital constraint between the farms of secured and insecure irrigation was due to ineffective affect of irrigation in the later case.

Thus, it can be concluded from the above discussion that from optimization and reallocation of farm resources, the farm returns can significantly be increased from their existing levels of output on the farms of almost all the size groups and farm as a whole.