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A Report on the Economic Situation
of Established Family Farms,
during the years 1952/53 to 1957/58.

Y. Lowe
T. Gans
Y. Remer

December 1958

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THE JEWISH AGENCY
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JERUSALEM

„THE ECONOMIC SURVEY OF FAMILY FARMS“

WE HAVE GREAT PLEASURE IN PRESENTING THE RESULTS
OF OUR SURVEY AND SHALL BE PLEASED TO RECEIVE
ANY COMMENTS OR QUESTIONS YOU MAY HAVE.

Dr. Y. LOWE

MAY, 1959

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S u m m a r y

Chapter I: Description of Average Results.

1. Changes in the Farm Structure

In the period 1952/53 till 1957/58 the number of work days invested per farm have decreased by 60 days. This is due to the decline in vegetable production. The number of cows has gradually increased during the 5 years from 4.3 to 4.9, and in 1957/58 suddenly went up to 5.5. The number of calves for fattening has increased during the whole period from 0.2 to 2.4 head. The irrigated area for fodder increased from 20 dunams to 25 dunams and that for hay from 15 to 20 dunams. The poultry branch has increased by 120% approximately as can be proved by the feed consumption. The production has been extended with the help of new investments in the farm that amounted to 13,000 IL per farm during the 5 years.

2. Input and Output

Livestock has come to play an increasingly larger role in the farm structure. The poultry branch has contributed 49% of the output value and the dairy branch 44%. The purchased feed comprised 68% of the total input. Milk production has increased during 6 years from 16,600 liters to 25,100 liters; the number of cattle units for sale from 1.5 to 2.7; egg production from 43,600 to 100,800; poultry meat from 1.1 tons to 2.9 tons. On the other hand, vegetable and potatoe production has decreased from 14 tons to less than 5 tons.

Value of output has increased during the period 1952/53 to 1957/58 from IL 11,000 to IL 28,700. Value of input rose from IL 6,900 to IL 19,700 and the net income from IL 4,100 to IL 9,000. If normal depreciation and real value of money were taken into account, the net income would have increased only to IL 6,200.

The nominal income per labor-day has increased from IL 8.600 to IL 18.-, and the real income to IL 13.- .

3. Measures of Productivity

Labor productivity has increased by 29% as a result of the family labor and better use of the labor force on the developing farm.

The coefficient of land use of irrigated area has remained around 1.3 during most of the period. The employment factor expressed by the number of labour days in the irrigated fields including the dairy branch decreased from 19 to 15 labor days per dunam, because of the decrease of the labor-intensive crops.

The cultivated area for fodder growing per cow or per cattle-unit of young stock was in each year only about 3.5 dunams.

Due to the expansion of the dairy branch the farms have shifted from 60% to 53% roughage, out of which 55% were produced in the farm at the beginning of the period and only 46% at its end. The percentage of concentrated feed was increased correspondingly. The milk yield per cow went up from 3860 to 4560 liters.

From each ton of poultry fodder, 4000 standard eggs were produced (1 egg = 1; 1 kg poultry meat = 20 standard eggs). The share of poultry meat in the total production, expressed in standard eggs, varied between 35% and 45% according to the price relations.

Chapter II. Distribution of Farms according to Income Groups.

The average results do not reveal the huge variations among the farms with regard to each and every item. At the beginning of the period the net income ranged between IL 1.400 and IL 8.300 and at its end between IL 4.400 and IL 15.400. These figures refer to averages of groups of farms, including 25% of the total, and several farms deviate even further from these average results.

These variations can be explained as resulting from differences in the farm structure. For example: The number of labor days ranged from 400 to 970; the irrigated area between 16 and 38 dunams; the number of cattle units between 5.8 and 11.4; the size of the poultry branch on the large farms was two and a half times as large as on the smaller ones.

Chapter III. Analysis of Factors influencing the average results.

The analysis of the effect of the changes in prices and in the quantitative increase of production on the output and input in each farm, reveals the following results : Due to the price effect the value of output during the 5 years 1953/54 - 1957/58 would have increased by 26% and the value of input by 37%. As a result the nominal net income would have increased from IL 5.700 to IL 6100 or by 7%, and would have decreased to IL 5000 in real terms when the decrease in the money value is taken into account. In contrast to the above, the quantitative increase in production caused the value of output to rise by 50% and the value of input by 52%. As a result the nominal net income would have increased from IL 5700 to IL 8400 or by 47% and in real terms would have risen to IL 6900. Consequently the actual increase in net income from IL 5700 to IL 9000, or by 57%, has to be attributed mainly

to the increase in production. This increase in production has been facilitated by large new investments which amounted to an annual average of IL 2000 - 3000. Without such a noticeable increase in the means of production the farms could not have maintained their profitability.

We shall try to give a detailed description of the effect of the variations in prices and quantities on the net income in each year, compared to the previous year. The increase in output was due more to increase in scale of operations than to any price increases. This was true for all the years except for 1956/57. The effect of the prices was stronger on the input, except during 1957/58. The net income did not increase in 1954/55 as the opposite influence of price and scale (the increase due to the extended quantity and decrease due to the negative change in prices) cancelled each other out.

In 1955/56 the net income increased by IL 700 due to increase of production, in spite of the negative effect of the prices.

In 1956/57 there was a different development: The scope of production decreased but the prices improved and as a result net income increased by IL 1000.

In 1957/58 the net income has further increased by IL 1200, in spite of a slight negative effect of the prices, due to a noticeable extension of the quantities produced.

During the whole period the nominal net income has increased at one time due to the price effect and at another time due to the quantity effect. The changes are mainly due to the poultry branch which is the main branch on these farms.

A detailed analysis of the value of production of the poultry branch reveals: In 1954/55 the value of production increased and was equally effected by the increase in eggs and poultry production and only slightly effected by the prices. In 1955/56 the quantities of poultry increased and the prices decreased noticeably, while the quantities of eggs decreased and the prices went up. During these two years the farms have reflected supply and demand relationships that existed in the whole country. In 1957/58 there was again a big increase in eggs and poultry meat production as a result of the "Eggs Agreement" and a slight decrease of the prices.

As opposed to the poultry branch, in the dairy branch there has been a steady and more balanced increase in the value of output. In general the effect of the increase of the quantity of milk was stronger than the effect of the increase in its price. From 1954/55 to 1956/57 the production of beef has contributed to the increase in value of output in the dairy branch more than milk production. Only in the last year was there a noticeable change in the number of milk cows which caused a marked increase in the quantity of milk produced. During the last two years

the rise in the prices of beef has had a much greater effect on the increased production than the price of milk.

On the input side the results of the farms have been influenced mostly by the increase in the quantity and price of the purchased feed, especially for the poultry branch. The price per ton of feed for poultry has gone up much more than the price per ton of purchased feed for the dairy herd.

Introduction

As in previous years, this year too we present a report on the economic situation of the 70 established family-farms in veteran settlements, that were included in the survey sample. This sample represents, as described in the previous reports, farms with not less than 250 standard labor days per annum. The results are not significant for all farms in the veteran settlements and certainly not for younger farms or other types of settlements. This report describes the changes that have occurred in the 70 farms during six subsequent years, and we are happy that the method of analysis has enabled us to present this report only a short time after the termination of the last agricultural year (30th September 1958).

The last report forwarded in Feb. 1958 together with "Summary-tables" included the results of the farm-survey for the years 1952/53 till 1955/56. As for the year 1956/57, no report was published and the results for that year are included in the present one.

While in the previous reports the results have been described according to farm types, this time we have abandoned this form and concentrated on the description of all the farms according to average results, and have emphasized for all of them the effects of variations in prices and quantities on the one hand and of the quantitative changes in the output and input on the other hand.

Till the year 1956/57 the results are based on a detailed survey of all output and input items. In 1957/58 it became possible to reach a general and quick summary by using a method of reliable estimates. The collection of the data started a month before the end of the agricultural year, and in some cases we had to estimate the value of output of several branches for the last month. For the input we have had accurate data for the most important items comprising over 80% of the total value of input. The remaining 20% had to be estimated according to our experience. This was the only way available for summarizing the results such a short time after the end of the year. We prefer this form of calculation - which approximates reality closely - to waiting another 6 months until the detailed accounts can be obtained from the cooperatives after the closing of their balance sheets.

Chapter I : Description of Average Results

1. Changes in Factors of Production and in Farm Structure
(See Table 1 in the Appendix)

On all farms the average actual labor days dropped from 635-640 at the beginning of the period to 548 in 1956/57 and increased again a little during the last year. This decrease can be attributed to hired labor which dropped from about 120 to 60 days, mainly due to the decrease of vegetable production which has occupied most of the hired laborers. During the last three years the family work comprised about 90% of total labor on the farm compared to 80% at the beginning of the period. It is apparent that the average family has invested about 500 labor days each and every year.

The labor distribution among the various farm branches can be observed only by estimating labor requirements in terms of "standard labor days" as there are no accounts of the actual labor input. With the help of this calculation we conclude that vegetables and potatoe-growing which had previously engaged about 25% of all laborers, dropped to 8%. On the other hand employment in the poultry branch has increased from 25% to 33% and in the dairy branch (fodder growing included) from 47% to 53%.

The total farm area remained rather stable during the period, and averaged about 50 dunams. But there has been a shifting within the area by bringing under irrigation land formerly unirrigated, so that the irrigated area has increased from 24 to 27.5 dunams and the unirrigated area decreased accordingly from 27 to 22 dunams.

In land use there have occurred typical changes by decreasing the area allotted to grains from 12 to 5 dunams and increasing the area under hay from 16 to 20 dunams and the irrigated fodder area from 20 to about 25 dunams. The area under vegetables has decreased from 8 to 2.5 dunams, but fruit plantations increased from 2 to 4 dunams.

The number of cows has gradually increased from 4,3 to 4,9 during the period 1952/53 to 1956/57, and only in the last year there has been a steep rise to 5.5 heads. In the last three years the number of heifers and calves was equal to the number of cows, while before that their number was smaller. This shows that lately every new born calf is kept to increase the herd instead of selling it.

The number of bull calves has increased rapidly, from 0.2 to 2 - 4 heads, during the period under survey. As we have only the annual average figure, we have to conclude that in the last two years the number of feeder-calves is greater than those born on the farm, e.g. that the farms have purchased calves for fattening.

As regards the poultry branch, the exact number of layers was not available. The economic scope of this branch cannot be measured without taking into account the broiler meat production, and even the number of chicks bought is not a correct indicator of its scope because of purchases of sexed and unsexed chicks. We have preferred the method of expressing the scope of the poultry branch by the quantity of feed it consumes as this figure expresses its scope for all purposes. From the table it can be seen that the quantity of feed consumed by the poultry branch has increased from 17,700 kg to 38,800 kg per year, an increase of 120% within 6 years ! It should be stated that the phenomenon of the temporary decrease in the development of this branch, in 1956/57 after the "Sinai Campaign", and the steep increase in the last year, have been reflected in this survey.

As for the value of property we have details for two items - cattle and poultry - according to their real value at the end of each year (except for the last year in which the value of the cows has been calculated according to prices that prevailed in the previous year). The total farm property - excepting cattle and poultry - was estimated in 1953/54 prices for the whole period, so that the calculation of own capital is not very significant. The direct debts of the farm owners increased from IL 1300 in 1952/53 to IL 4650 in 1956/57. This does not include their share in the cooperative debt. The new productive investments have amounted to about IL 3000 per annum during two years and to about IL 2300 per annum during three years.

During a period of 5 years these farms have invested on the average IL 13,000 each. These sums have helped the farms to increase their scale of production considerably. Part of these sums originated from reparations payments and parts from loans, even short term loans, but most of them came out of profits from the farm.

2. Incomes and Value of Output *)

Cash incomes have increased from IL 10,000 to IL 25,600, of which 84% - 90% originated from sales through the cooperative. The share of income from private sales has increased from 10% to 16% mainly because of increased cattle sales, which have generally been private.

Table 2 in the Appendix, shows the formation of the value of output, that reached IL 11,000 in 1952/53 and increased every year till it amounted to IL 28,700 in 1957/58 e.g. an increase of 161%. The growth was most rapid in the last year. It is of interest to point out the fact that the rate of increase in output has matched exactly the rate of increase in investments, during the last 5 years.

*) Value of output includes: Incomes from sale of produce, livestock increase during the year, family consumption of the farm produce.

The composition of output has greatly changed during the period of analysis.

	<u>1952/53</u>	<u>1957/58</u>
Percentage of Output in Poultry	40%	49%
" " " " Dairy	39%	44%
" " " " Vegetables	15%	3%
" " " " All the other farm branches	5%	4%

The farms that already in 1952/53 relied to a great extent on the dairy and poultry branches have become almost absolute livestock farms in 1957/58. The importance of the poultry branch which at the beginning of the period equalled the dairy branch has greatly increased. The vegetable branch has almost lost its significance on these farms.

3. Value of Input **) (See table 3 in Appendix)

Value of input has increased from IL 6900 in 1952/53 to IL 19,700 in 1957/58, and its composition changed as follows:

	<u>1952/53</u>	<u>1957/58</u>
Purchased feed for Poultry	33%	49%
Purchased feed for cattle	17%	19%
Wages paid to hired workers	6%	2%
All the rest	44%	30%

At the beginning of the period the main input item - purchased feed - took up 50% and at its end no less than 68% of the total. The main development has occurred in feed for poultry that corresponded to the increase of the output, and now this item comprises 49% of total input. More details will be given in the discussion on the effect of the variations in prices and quantities and scale of operation on the farm results.

The importance of the item "wages for hired labor" has greatly diminished as explained above.

The item "miscellaneous", the details of which can be seen in the appendix, is composed of many small items none weighing heavily.

* *) Value of input includes: Current cash expenses for production materials and services, interest, wages for hired labor, and depreciation on the farm property calculated on the basis of value in 1953/54 prices.

4. Net Income (See Table 4 in Appendix)

When setting the value of output against the value of input, we can observe the following:

Table 1

Output, Input and Net Income
in the years 1952/53 till
1957/58

Year	Output	Input		Net Income		Cost of living	Real Net Income	
	'000 IL	'000 IL	In % of Output	'000 IL	After Real Depreciation	Index 52/53 100 =	'000 IL	1952/53 100=
1952/53	11.0	6.9	63%	4.1	4.1	100	4.1	100
1953/54	15.2	9.5	63%	5.7	5.6	112	5.1	124
1954/55	17.7	11.8	67%	5.9	5.7	119	4.8	117
1955/56	20.4	13.7	67%	6.7	6.4	127	5.0	122
1956/57	23.7	16.0	67.5%	7.7	7.3	135	5.4	132
1957/58	28.7	19.7	68.5%	9.0	8.5	138	6.2	151

Without going into a detailed discussion of the value of output compared to the value of input (which will be discussed below), we can here say that the relative share of input has increased (mainly because of the trend away from vegetable towards poultry) from 63% to 68.5%. In spite of this there was a considerable rise in the net income from IL 4100 to IL 9000 during the period. The calculation of depreciation is based in our analysis in estimates of the assets (except for livestock) in 1953/54 prices, as we could not estimate the value of the whole property each year in current prices. But in order to bring the amount of depreciation closer to real terms we have inflated it in the above table according to the Cost of Building Index, whereby the net income would have decreased by IL 300 -500 during the last years.

If we take into account the decline in the purchasing power of money, measured by the Cost of Living Index (which in the opinion of many does not express it in full), we find that the real net income has increased from IL 4100 in 1952/53 to IL 6200 in 1957/58.

It is important to stress again that the net income does not coincide with the cash surplus but includes the increase of value of productive assets and the use of farm produce for household consumption. The cash surplus increased from IL 3700 in 1952/53 to IL 6800 in 1957/58, and when using again the Cost of Living Index as a yardstick for measuring the purchasing power, we find that it increased as follows:

Real Surplus in Cash

1952/53	IL	3700	=	100
1953/54	"	4100	=	111
1954/55	"	4370	=	118
1955/56	"	4250	=	115
1956/57	"	4500	=	122
1957/58	"	4900	=	132

5. Income per Labor Day

In order to arrive at the "income per labor day" we have first to define the labor-day that served as a basis for calculations. For this purpose we have changed the labor days contributed by women and children into man labor days. A woman's labor day equals 80% of the man's labor day, and that of the child 60%. We have not entered the question of comparing the labor day in a Moshav to that in the Kibbutz, and we cannot give an accurate definition of the length of the labor day. It is common knowledge that the labor day in the Moshav is longer than in the Kibbutz, but due to lack of records measuring it we cannot give exact details.

The income per labor day, in the various years was as follows:

Table 2

	<u>Income per Labor Day</u>					
	<u>1952/53</u>	<u>53/54</u>	<u>54/55</u>	<u>55/56</u>	<u>56/57</u>	<u>57/58</u>
Net income, '000 IL	4.1	5.7	5.7	6.4	7.3	8.5
Full Labor days, number	476	489	458	457	448	473
Income per labor day, IL	8.600	11.650	12.450	14.-	16.300	18.-
The above divided by Cost of Living Index	8.600	10.400	10.450	11.-	12.100	13.-
1952/53 = 100	100	121	122	128	141	151

The income per labor-day has gradually increased from IL 8.600 to IL. 18.-, but by taking into account the decline of the value of money the income rose to IL 13.- only.

We wish to stress that part of the increase in the income per labor-day has to be attributed to the improvement in labor productivity, a subject to be discussed in more detail further on.

6. Measures of Productivity¹⁾ (see Table 5 in Appendix)

a) Labor Productivity

By comparing the actual labor days invested with the standard labor days - according to norms fixed in 1952/53²⁾ - we get the following picture:

Table 3

Labor Productivity

	<u>1952/53</u>	<u>1953/54</u>	<u>1954/55</u>	<u>1955/56</u>	<u>1956/57</u>	<u>1957/58</u>
Actual labor days	635	640	597	565	548	575
Standard work days	565	624	612	585	624	696
Actual labor days as % of standard Labor Days	112	103	98	97	88	83

At the beginning of the period 12% more labor days were invested than were prescribed by the norms, while at the end of the period it was 17% less. This serves as evidence for the steady improvement in labor productivity. It can be explained, on the one hand, by the decrease in employment of hired workers, especially in vegetable growing, whose efficiency was less than that of the family labor, and on the other hand, by the increase in scale, especially in the poultry branch, through which the labor of the housewife could be more effectively utilized.

It was noted before that the real income per labor day has increased during the period from IL 8,600 to IL 13.--. But if not for the improvement in the productivity of labor during the same period, the income per labor-day at the end of the period would have reached IL 10,100 instead of IL 13.--. Thus the real income per labor would have increased during this period only by 17%.

b) Land Use

From the point of view of land use, no significant changes have occurred during the period:

1) In the calculation of the measures of productivity weighted averages have been used, while in the attached tables the arithmetic averages are given.

2) We have introduced several changes in the calculations of labor norms, but in order not to disturb the comparison among the years we did not take them into account here. In the attached tables the corrected standard labor days appear for the last years.

Table 4

Coefficient of Irrigated Land Use

	<u>1953/54</u>	<u>1954/55</u>	<u>1955/56</u>	<u>1956/57</u>	<u>1957/58</u>
Physical Irrigated Area in Rotation, Dunams #)	22.0	23.0	22.5	23.0	23.5
Cultivated Irrigated Area, Dunams	28.5	29.5	29.0	29.5	28.0
Coefficient of Use of Land in Rotation	1.29	1.26	1.29	1.28	1.19

#) All irrigated area less plantations

The coefficient of land use remained stable, about 1.3, during four years and only in the last year it has slightly decreased. We attach greater importance to the land use from the point of view of employment. This is measured by calculating standard labor days invested in all irrigated crops, including plantations, and in the dairy-branch related to the total physical irrigated area (Labor days in the poultry branch are excluded, as this branch is independent of the physical area).

The calculation shows the following:

Table 5

Employment in the Irrigated Area and in the Dairy Branch per Dunam

	<u>1953/54</u>	<u>54/55</u>	<u>55/56</u>	<u>56/57</u>	<u>57/58</u>
Standard Labor Days in the Irrigated Area and in the Dairy Branch	456	423	403	370	407
Physical Irrigated Area, Dunams	24.0	25.0	25.5	27.0	27.5
Work days per irrigated dunam	19.0	16.9	15.8	13.7	14.8

The employment per irrigated dunam has steadily decreased, and only in the last year has slightly increased. The decrease was caused by the fact that vegetable growing demanded more labor per land-unit than fodder growing which took its place. In the last year the effect of the expansion of the dairy branch made itself noticeable. From an economic point of view the degree of employment is much more important than the coefficient of land use, because with the same coefficient of land use we can arrive at great differences in employment due to the composition of crops, and in this respect significant changes have occurred in the farms during the period under study. The allotted area served as a decreasing source of employment though this does not mean that general

employment has decreased, as the poultry branch which did not enter this calculation reversed the trend. If it had not been for the relatively good profitability of meat production in the dairy and poultry branches, based on purchased feed, it is doubtful if the farms could have afforded to give up the additional employment provided by more intensive use of the land.

c) Indices of Productivity in the Dairy Branch

In the light of the special importance attached to the problem of how to feed the cows in connection with the discussions on the future of the dairy branch in the country, we shall list in detail the feeding basis of the cattle on the surveyed farms.

Table 6

Feed Area and Quantity of Rough Fodder per Cattle Unit

	<u>1953/54</u>	<u>54/55</u>	<u>55/56</u>	<u>56/57</u>	<u>57/58</u>
Area of Irrigated Green Fodder, dunams	20.0	18.5	19.0	23.0	25.5
Area of Unirrigated Hay	14.5	16.5	19.0	21.0	18.5
Area of "Irrigated" Fodder ¹⁾	23.5	22.5	24.0	28.0	30.0
Quantity of Feed Produced on the Farm, Feed Units ²⁾	11.750	11.250	12.000	14.000	15.000
Number of cattle units ³⁾	6.6	6.7	6.9	7.5	8.5
Area of "Irrigated" Fodder per Cattle Units, Dunams	3.6	3.4	3.5	3.7	3.5
Quantity of Fodder Produced on the Farm per Cattle Units, F.U.	1780	1680	1740	1870	1770

The quantity of roughage produced on the farm for the dairy branch increased from 11,000 to 15,000 feed units. This increase has enabled the farms to supply almost the same quantity of roughage for each cattle-unit during all the years, in spite of the growing number of heads. The fodder area expressed as "irrigated fodder" was about the same during the whole period, around 3,5 dunams per cattle-unit, e.g. per milk cow !

1) Area of "Irrigated" fodder equals 1 cultivated dunam of irrigated green fodder or 4 dunams under unirrigated hay.

2) The quantity of fodder from one "irrigated" dunam was assumed to be 500 feed units.

3) One cattle unit equals 1 cow, 0.5 heifer or 0.3 calves..

For a detailed description of the use of the fodder area we have summarized the data from all the farms which engage in dairy (about 60). The average results are as follows:

Table 7.

	<u>1953/54</u>		<u>1957/58</u>	
	Dunams	%	Dunams	%
Total Area	22.7	100	33.5	100
Perennial Fodder	4.1	18	5.8	17
Clover	4.1	18	5.3	16
Seasonal Winter Fodder	2.6	11	3.6	11
Fodderbeets	1.1	5	1.8	5
Wintersome	1.3	6	1.4	4
Seasonal Summer Fodder	5.8	26	9.3	28
H a y	3.7	16	6.3	19

Though the area has increased by 50% during the period, the relative importance of the various crops has hardly changed. An examination of the annual changes showed that there have been no changes in the composition of crops from one year to another.

But the feed requirement per cattle unit has grown because of the steady increase in the milk yields per cow and the shorter periods necessary for fattening in the last years. Thus the ratio between feed produced on the farm and purchased feed has changed, as can be seen from the following table:

Table 8

Composition of Feed for the Dairy Branch

	<u>1953/54</u>	<u>54/55</u>	<u>55/56</u>	<u>56/57</u>	<u>57/58</u>
Total quantity of feed per cattle unit, F.U.	3200	3200	3400	3800	3800
Thereof: Quantity of feed produced on the farm, %	55	52	51	49	46
Purchased concentrated feed, %	40	42	42	44	47
Purchased Hay %	5	6	7	7	7

The table reveals that the farms were able to increase the dairy branch in spite of the restricted area, because each year they have shifted to a lower percentage of feed produced on the farm and to larger purchases of hay and especially of concentrated feed.

While at the beginning of the period the roughage comprised 60% of the diet, out of this 55% were produced on the farm, today 53% is roughage and of this only 46% are produced on the farm, while the percentage of the concentrated feed climbed from 40% to 47%.

According to the above facts we can state that these farms have already put into practice the recommendations by the Ministry of Agriculture as a solution to the feeding problem in the dairy branch, in light of the existing water shortage in the country.

By comparing the total feed consumption of the herd with the normal requirements we get the following picture:

Table 9

Quantity of Feed per Cow for Production of 1 Liter of Milk

	<u>1953/54</u>	<u>1954/55</u>	<u>55/56</u>	<u>56/57</u>	<u>57/58</u>
Total quantity of feed, '000 F.U.	21.2	21.6	23.4	28.6	32.4
Thereof: Quantity of feed for calves ¹⁾ Feed Units	6.9	6.9	7.2	8.6	9.6
Quantity of feed for milk cows, F.U.	14.3	14.7	16.2	20.0	22.8
Total quantity of milk '000 liters	18.0	18.9	20.3	21.7	25.1
Quantity of feed per cow per liter of milk F.U.	0.79	0.77	0.79	0.92	0.91

¹⁾ According to 3200 feed units per cattle unit (2-3 calves)

During the first three years there has been no change in the quantity of feed per cow per liter of milk (about 0.8 feed units). In the last two years the coefficient of use was slightly worse (about 0.9 feed units).

This can be explained by the fact that in these years there have been changes in the composition of the herd, due to the increase of beef production, but we lack accurate statistical data to be able to investigate the actual consumption in detail. It can be assumed that the quantity of feed fed to the calves for fattening was larger than expected according to the accepted norms.

Average milk yields per cow have steadily increased:

1952/53	3860 liter
1953/54	4000 "
1954/55	4110 "
1955/56	4320 "
1956/57	4430 "
1957/58	4560 "

d) Indices of Productivity in the Poultry Branch

The best productivity index in the poultry branch is the ratio between the quantity of feed and the production of eggs and poultry-meat together. For this purpose we have brought both products under a common denomination called "Standard Eggs". Each egg equals one "standard egg" and every kg of meat equals 20 "standard eggs". By comparing the quantity of feed and the number of standard eggs for each year we get the following picture:

Table 10

Feed Consumption in the Poultry Branch for the production of
"Standard Eggs"

	<u>1953/54</u>	<u>54/55</u>	<u>55/56</u>	<u>56/57</u>	<u>57/58</u>
Total production of poultry meat, tons	1,6	2.1	2.9	2.1	2.9
Poultry meat as "Standard Eggs" '000	32,0	42,0	58,0	42,0	58,0
Total egg production, '000	56.3	72.4	70.6	78.5	100.8
Total "Standard Eggs" '000	88.3	114.4	128.6	120.5	158.8
Poultry meat as % of Standard Eggs	36%	37%	45%	35%	37%
Quantity of feed for the poultry branch, tons	22.4	28.4	31.7	29.7	38.8
Standard eggs per ton of feed	3940	4030	4060	4060	4090

The ratio between the quantities of produce and feed has hardly changed in any of the years in spite of the sizeable expansion of this branch. The improvement during this period has been very slight and is expressed by the fact that from each ton of feed between 3940 and 4090 standard eggs were produced. It becomes clear that when the ratio between eggs and meat changes it does not change the coefficient of feed conversion within the existing limits, even when the meat produced changes from 35% to 45% of the total quantity in terms of "standard eggs". Even farms that keep only laying hens and buy only sexed chicks are bound to produce poultry meat in a ratio of about 30% - 35% of all "standard eggs". It is important to point out that even the general variations among the single farms remain between 3500 and 4500 standard eggs per ton of feed, figures which show the reliability of this index. A detailed research by I. Remer on this subject is to appear shortly. It deals with the economic significance of his findings in the poultry branch, based on the statistical material of the Survey of the Established Family Farms.

CHAPTER II. Distribution of Farms According to Net Income Groups
(See Diagram 1)

All results given up to here refer to the average of all 70 farms, but actually there have been wide variations in each item and in every year among the various farms. In describing this distribution we shall deal with the most important items, by dividing the farms into 3 groups on the base of their performance in 1952/53.

Group A includes 25% of all 70 farms with the highest net income
 Group B " 25% " " " " " " " lowest " "
 Group C " 50% " " " " " " " medium " "

We have used this division for describing the results of these same farms every year, in order to emphasize the existing differences between group A and B. We have not discussed group C separately as its results resemble the general average referred to in the preceding chapters.

1. Net Income in the Various Farm Groups

In describing the net income every year for each group, we have used the average as 100, and we see the following:

Table 11

Net Income in Various Farm Groups

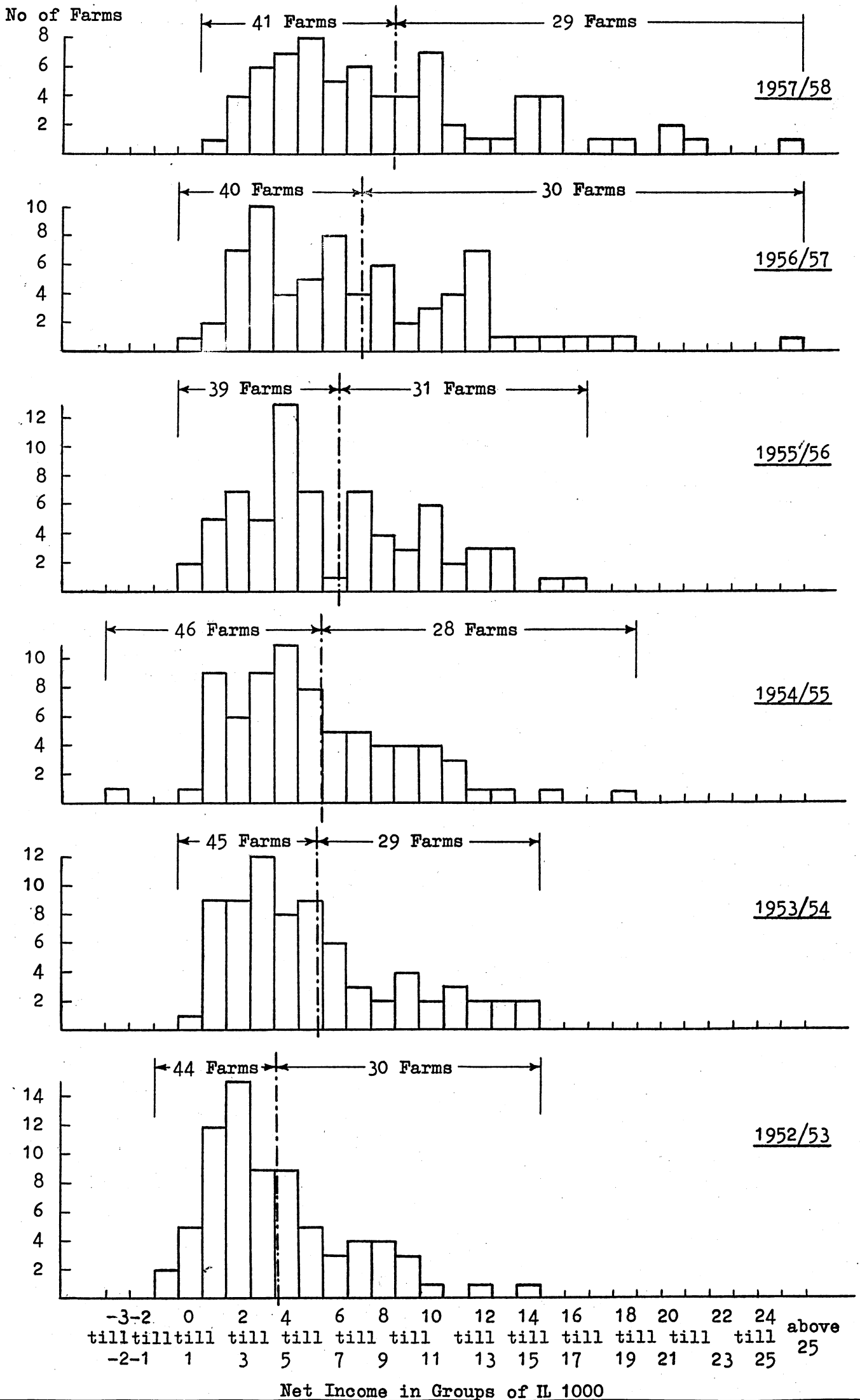
	<u>Average</u>		<u>Group A</u>		<u>Group B</u>	
	<u>IL '000</u>	<u>Index</u>	<u>IL '000</u>	<u>Index</u>	<u>IL '000</u>	<u>Index</u>
1952/53	4.1	100	8.3	202	1.4	34
1953/54	5.8	100	10.9	188	2.3	40
1954/55	5.9	100	11.0	187	2.2	37
1955/56	6.7	100	11.7	175	3.0	45
1956/57	7.7	100	13.4	174	4.1	53
1957/58	9.0	100	15.4	171	4.4	49

Most outstanding are the big variations that exist among the various groups in each year. The farms with the highest net income are 70% - 100% above the average, while the farms with the lowest net income are 47% - 66% below the average. Remarkable is also the fact that the gaps between the best and the worst farms have decreased during the period. It can be explained by the offsetting effects of the quantitative increase of production and the changes in the price ratio (as will be explained in Chapter III). The price ratio between output and input has changed adversely and had a stronger effect on the farms with the larger scale of production and thus their relative net income increased less than that of the farms with a small scale of production. On the other hand the increase in quantities produced has been proportionately larger on farms which had a smaller scope at the beginning of the survey period.

DIAGRAM 1

DISTRIBUTION OF FARMS ACCORDING TO SIZE OF NET INCOME
FOR THE YEARS 1952/53 - 1957/58

(Average Net Income :-----)



It is most important to point out that in the last year the net income of Group B reached only IL 4400, and formed no more than 49% of the average net income. Actually, the range was even larger, because, as mentioned before, the groups consist of the same farms as fixed in 1952/53. If we would have rearranged the farms according to net income groups in the last year, we would have found that in the best 25% net income reached IL 16,600 which is 184% of the average, and in the lowest 25% net income reached only IL 3,500 which is 39% of the average. In diagram 1 the distribution of the net income of all farms in every year can easily be seen.

The great variations among the farms should be a warning against any generalization of the results, and it should not be concluded from the fact that these 70 farms reached an average net income of IL 9000 in 1957/58 that all family farms have attained similar results, and certainly not diversified farming in the country in general.

2. Variations in Farm Structure Among Different Farm Groups
(See Table 6 in the Appendix)

The big variations in the net income are explained by the farm structure, as shown in the following table:

Table 12

The Farm Structure in Various Farm Groups

	<u>1953/54</u>		<u>1957/58</u>	
	<u>Group A</u>	<u>Group B</u>	<u>Group A</u>	<u>Group B</u>
1. <u>Rate of employment</u>				
Standard work days	901	440	969	412
2. <u>Physical Irrigated Area</u>				
Dunams	31.3	16.9	37.5	16.0
3. <u>Cultivated Area (incl. Unirrigated), Dunams</u>	103.0	36.8	92.7	35.3
4. <u>The Dairy Branch</u>				
Number of cattle-units	9.5	4.3	11.4	5.8
5. <u>The Poultry Branch</u>				
Annual feed input, tons	41.4	11.0	65.9	26.8
6. <u>Replacement value of the Farm Assets</u>				
IL '000	32.8	13.7	53.0	24.0

The results attained by Group A are much above the average, due to the fact that these farms have had a good foundation of land and livestock which demands and enables large scale employment.

Group B is limited in area, both irrigated and unirrigated, and could not keep a large number of cattle. True, they have a well-developed poultry branch, which is independent of the area, but even in this respect they are behind the level of Group A farms. Employment on these farms remains within the limits of the family labor force.

The differences between Group A and B are very large in each and every item, whether it be the level of employment supplied by the farm, or the area or the number of livestock. Roughly the scope of Group B farms is only about half of that of Group A farms, and net income less than a third.

The value of output in both farm groups increased from year to year, as seen in the following table.

Table 13

Output Value in Various Farm Groups

<u>Value of Annual Output IL '000</u>	<u>Group A</u>	<u>Group B</u>
1952/53	18.6	6.2
1953/54	25.3	8.4
1954/55	29.1	9.9
1955/56	32.9	12.5
1956/57	37.8	14.8
1957/58	46.7	17.8

At the beginning of the period the value of output of Group B farms was 33% of that of Group A farms, and at its end 38%. Both groups have considerably increased the value of their output: in Group A by 250% and in Group B by 290%. This increase could be attained only with the help of heavy investments, as seen in the following table:

Table 14

Value of Annual Investments In Various Farms Groups
(In IL '000)

	<u>Group A</u>	<u>Group B</u>
1952/53	1.9	0.5
1953/54	2.9	1.9
1954/55	3.8	1.0
1955/56	3.9	2.6
1956/57	4.4	2.7
1957/58	<u>3.1</u>	<u>0.8</u>
During the whole period	20.0	9.5

The strong farms have invested in their farm development IL 20,000 during the six years and have increased the value of output with the help of these investments by about IL 28,000. Even the weak farms have invested IL 9,500 and have increased the value of their output by IL 11,600. We have already pointed out the fact that not all of these sums resulted from the farm profits, and this refers to the weak farms in particular.

CHAPTER III. Analysis of the Factors Influencing the Average Results

1) Price Ratio Effect (For details see Table 5 in the Appendix)

In order to analyse the effect of the price movements on the output and input value we shall base our calculations on the constant scale of operation in 1953/54, for the whole period from 1953 - 1958.

These calculations do not include all items of output and input, but only those with regard to which we have accurate price and quantity data for every year. In the output we have included: milk, beef, eggs, poultry and changes in value of livestock. At the beginning of the period these items made up 83% of total output, and at its end 93%. In the input we have included: feed for the poultry branch, feed for the dairy branch, purchased as well as produced on the farm, and wages for hired labor. At the beginning of the period these items comprised 73% of total input, and at its end 83%. Thus the results are of significance only with regard to the indices and not to absolute sums.

Table 15

Effect of Price Variations (≠) on the Input and Output Indices
In the Years 1953/54 till 1957/58

<u>Year</u>	<u>Value of Output</u> <u>Index</u>	<u>Value of Input</u> <u>Index</u>
	1953/54 = 100	1953/54 = 100
1953/54	100	100
1954/55	108	111
1955/56	112	128
1956/57	130	140
1957/58	129	146

Every year the input price index has risen at a quicker pace than the output price index. While the produce price index moved up by 29% during a four year period the factors of production price index increased by 46%.

(≠) Calculated according to Fisher's Index.

2. Effect of Increase of Production

In order to measure the effect of the increase of production on the output and input value, we shall express the data in constant 1953/54 prices for the whole period. This calculation too relates only to those items which permit accurate measuring.

Table 16

Effect of Increase of Production (≠) on the Output and Input Indices in the years 1953/54 till 1957/58

Year	Value of Output	Value of Input
	Index	Index
	1953/54 = 100	1953/54 = 100
1953/54	100	100
1954/55	117	113
1955/56	131	124
1956/57	131	133
1957/58	159	162

(≠) Calculated according to Fisher's Index.

Due to the quantitative increase of production, the value of output index has increased by 59%, and the value of input index by 62% during the whole period. Only in the last two years has the input index risen more rapidly than the output index. This development expresses the change in the farm structure, in favor of the poultry branch and against vegetable growing, which caused a different output-input ratio. (In vegetable growing the input forms a smaller share of the output than in the poultry branch). Thus it should not be concluded that there has been inefficiency in the use of the factors of production.

3. Effect of Price Ratio and Expansion of Production on the Net Income

In Chapter I, paragraph 4, we have described, in absolute terms, the increase of output and input. By fixing 1953/54 = 100 we find out that the value of output has increased in 1957/58 to 189, and the value of input to 208. We wish to explain how much of this increase has to be attributed to the effect of price movements, and how much to the effect of quantitative development. Thus we can find out the rate of net income which results from either of these tendencies.

The indices calculated above are useful for this purpose, but certain corrections had to be made, as for several items the two tendencies could not be separated. These corrections are logical, and their size is determined by the fact that the increase calculated according to the indices has to fit the results achieved in reality.

By using the indices, calculated in the previous paragraph, we find that in 1957/58:

Value of output according to price index (129)	IL	19,600
" " " " " quantity " (159)	"	24,200
" " " " " value " (205)	"	31,200

Value of output has actually reached IL 28,700 and thus the indices cause an exaggeration of IL 2,500. This difference can be explained by the fact that the price index for fruit and vegetables (not included in our calculations) increased a little less, and their quantity index even decreased due to the decrease of the vegetable growing. By assuming a price index of 126 (instead of 129) and a quantity index of 150 (instead of 159) for the whole farm produce, we would reach an index of value of 189, which approximates reality more closely.

The input indices can be corrected in the same way. According to the indices for the known items we reach the following results.

Value of input according to price index (146)	IL 13,900
" " " " " quantity index (162)	IL 15,400
" " " " " value index (236)	IL 22,400

Value of input has actually reached IL 19,700, and there exists a difference of IL 2700. This gap can be explained by the fact that expenses for water, fertilizers, use of machines etc. have increased less than the items on which the indices are based. By assuming a price index of 137 and a quantity index of 152, we reach an index of value of 208, which is correct. This method of assuming indices is not accurate, but the arguments for it have been explained and this is the only way to evaluate the effect of price and quantity on the changes that have actually occurred in the net income of the farms.

According to the above assumptions we arrive at the following:
(See diagram 2)

Table 17

Estimated Effect of Price Changes on the Value of Output, Input, and Net Income in the Whole Farm

Year	Value of Output		Value of Input		Net Income		Real Net Income (≠)	
	Index	IL '000	Index	IL '000	Index	IL'000	Index	IL '000
1953/54	100	15.2	100	9.5	100	5.7	100	5.7
1957/58	126	19.1	137	13.0	107	6.1	88	5.0

(≠) Net Income divided by Cost of Living Index.

Price movements would have caused net income to increase from IL 5,700 to IL 6,100, or by no more than 7% during the period 1953/54 - 1957/58. If we take into account the decline in purchasing power during the same period the net income would even have decreased to IL 5,000 of by 12%.

Table 18

Estimated Effect of the Increase of Production on the Value of Output, Input and Net Income in the Whole Farm

Year	Value of Output		Value of Input		Net Income		Real Net Income (÷)	
	Index	IL '000	Index	IL '000	Index	IL'000	Index	IL'000
1953/54	100	15.2	100	9.5	100	5.7	100	5.7
1957/58	150	22.8	152	14.4	147	8.4	121	6.9

(÷) Income divided by Cost of Living Index.

Due to the effect of increase of production the net income would have grown from IL 5,700 to IL 8,400 or by 47%, during the period 1953/54 - 1957/58. Even after taking into account the rise in the cost of living there would remain an increase of 21%.

During the discussed period, net income has actually increased from IL 5,700 to IL 9,000 or by 58% (See Table 1). The calculations prove that this increase has to be attributed first and foremost to the increase in production and not to the price ratio. If we take into account the decline in the value of money the effect of price movement would have been to decrease the net income of the farms. Thus it can be concluded that the economic situation of the farms has been preserved and even improved in spite of the adverse effect of price movement and due to the remarkable increase of production.

4. How to Explain the Variations in Net Income From Year to Year.

In the previous chapter we have described the mutual effect of price variations and increase of production on the value of output, input and net income at the end of the period (1957/58) compared to the base year (1953/54).

Now we shall go into details of price and quantity variations which occurred from year to year. We shall dwell on the effect of the various output factors on the main farm branches and also on the most important input items. Thus we shall try to explain if and to what extent the farms have adapted themselves to the varying market conditions.

a) Year to Year Variations in Profitability due to Changes in Price and Quantity

By comparing the results of one year to another, we get the following changes in the value of production:

DIAGRAM 2

EFFECT OF PRICE VARIATIONS AND INCREASE OF PRODUCTION
ON OUTPUT, INPUT AND NET INCOME
IN 1957/58 COMPARED TO 1953/54

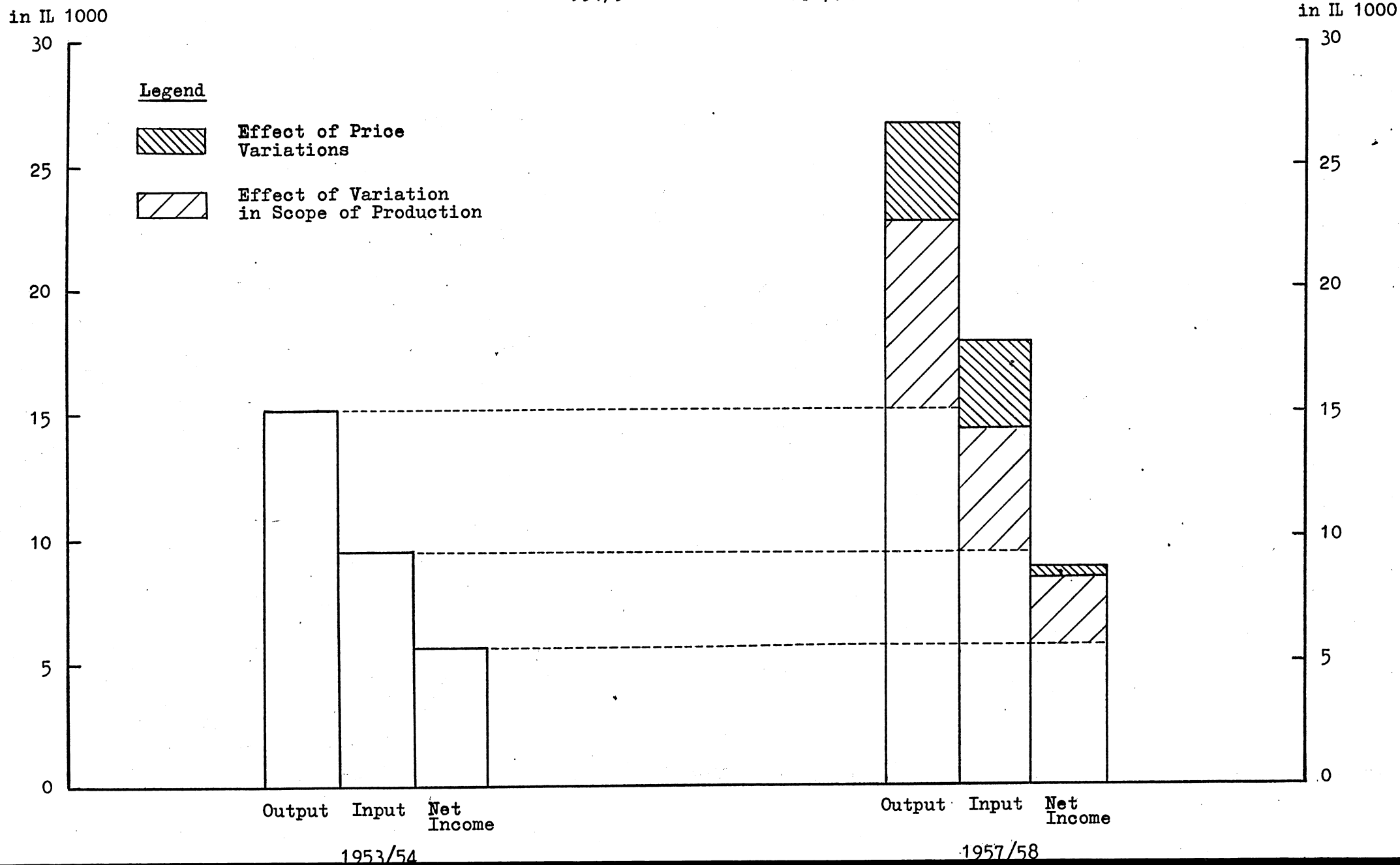


Table 19

Value of Output Compared to the Previous Year (₺)									
	1954/55 compared to 1953/54		1955/56 compared to 1954/55		1956/57 compared to 1955/56		1957/58 compared to 1956/57		
	IL	%	IL	%	IL	%	IL	%	
Variation due to quantity	2.150	85	2000	75	335	10	4730	95	
Variation due to price	<u>380</u>	<u>15</u>	<u>670</u>	<u>25</u>	<u>3015</u>	<u>90</u>	<u>250</u>	<u>5</u>	
Real Variation	2.530	100	2670	100	3350	100	4980	100	

Table 20

Value of Input Compared to the Previous Year (₺)									
	1954/55 compared to 1953/54		1955/56 compared to 1954/55		1956/57 compared to 1955/56		1957/58 compared to 1956/57		
	IL	%	IL	%	IL	%	IL	%	
Variation due to quantity	1180	47	415	21	1100	47	3200	85	
Variation due to price	<u>1320</u>	<u>53</u>	<u>1565</u>	<u>79</u>	<u>1230</u>	<u>53</u>	<u>570</u>	<u>15</u>	
Real variation	2500	100	1980	100	2330	100	3770	100	

(₺) In calculating input real depreciation has been included.

Table 21

Net Income Compared to the Previous Year								
	1954/55 compared to 1953/54		1955/56 compared to 1954/55		1956/57 compared to 1955/56		1957/58 compared to 1956/57	
	IL		IL		IL		IL	
Variation due to quantity	970		1585		-765		1530	
Variation due to price	<u>- 940</u>		<u>-895</u>		<u>1785</u>		<u>-320</u>	
Real Variation(₺)	30		690		1020		1210	

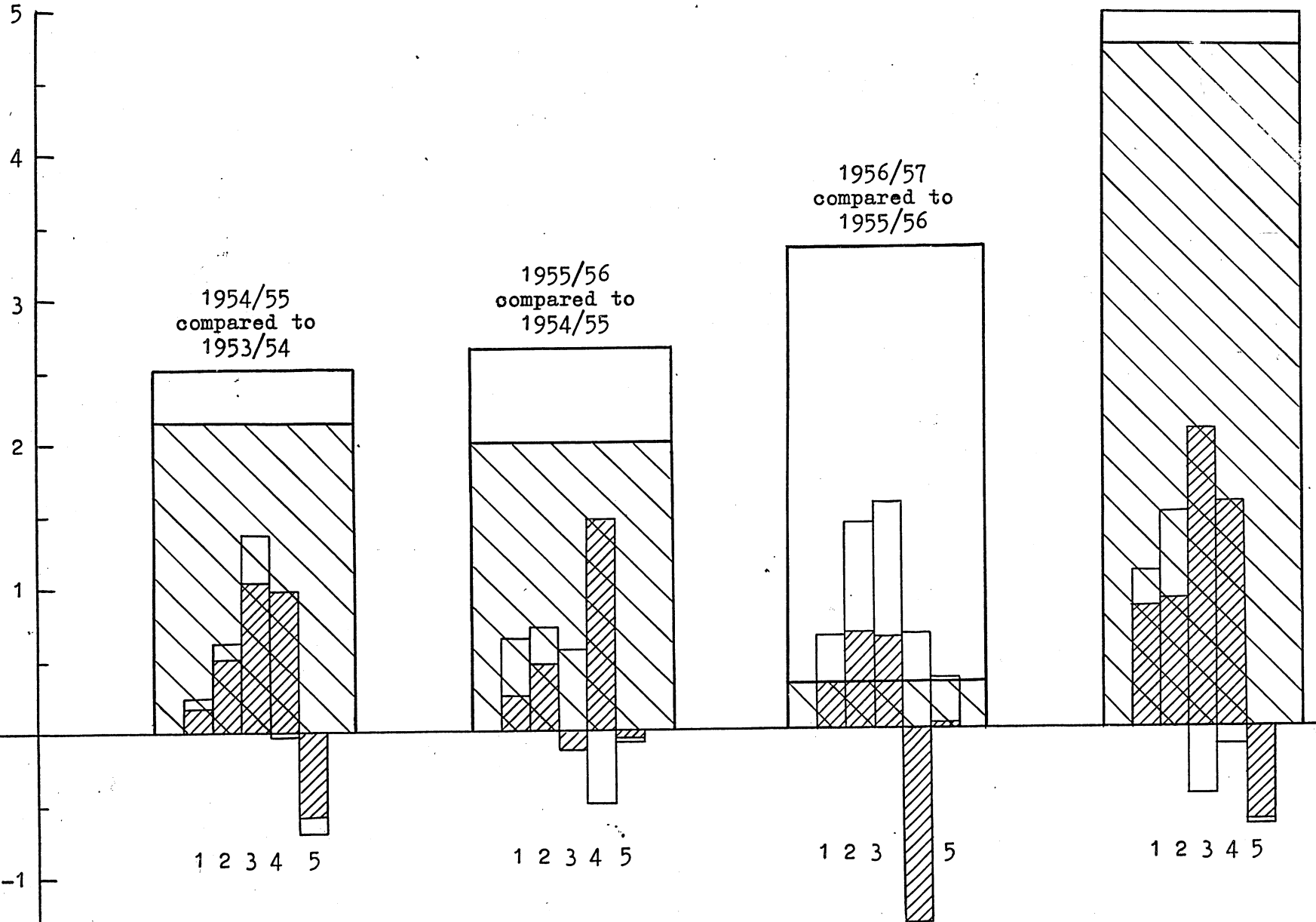
(₺) After deducting real depreciation.

In 1954/55 the output value has increased by IL 2530 compared to the previous year. 85% of this increase is due to quantitative development and 15% of it is due to increase of the prices for produce. In the same year the input value has increased by IL 2500, half of the increase due to quantity and the other half due to increase of prices for inputs. As a result of the two diverging movements in output and input the net income remained on the same level as in the previous year.




DIAGRAM 3



YEAR TO YEAR VARIATIONS IN TOTAL OUTPUT
 DUE TO VARIATION IN QUANTITY AND PRICE OF OUTPUT ITEMS
 FOR THE PERIOD 1953/54 - 1957/58

Year to Year Variations
 in IL 1000



Legend

-  Variations in Total Value of Output
-  Due to Price Variations
-  Due to Quant. Variations

- Variations in Value of Output of the Various Items
-  Due to Price Variations
-  Due to Quant. Variations

- Output Items
- 1 Milk
- 2 Beef Meat
- 3 Eggs
- 4 Poultry Meat
- 5 Miscellaneous

In 1955/56 the net income was higher by about IL 700 than that of 1954/55, as a result of the quantitative increase of output which was greater than the quantitative increase in input, this effect being stronger than the price increase which was higher in the output than in the input.

A completely different picture reveals from the analysis of the results for 1956/57 compared to 1955/56. The quantitative increase in production was very small, but during the same period there has been a strong upward shifting in the prices of the produce, especially for poultry meat. This probably reflects the changes in the supply-demand relations due to the Sinai Campaign. In this year only 10% of the increase in value of output have resulted from quantitative development, while 90% have resulted from the upward trend in prices. On the input side the increase was equally divided between the quantitative increase and the rise in prices. The change in produce prices has so favorably affected the net income formation that the net income increased by about IL 1000.

In 1957/58 there was a great expansion of output as a result of the favorable prices received in the previous year so that 95% of the additional value of output resulted from quantitative development and only 5% from price rises. A similar picture can be seen on the input side which had to increase in quantity in order to supply the greater farm needs. Input prices have increased only slightly more than prices received for the produce, so that net income has increased by about IL 1200.

b) Variations in the Main Agricultural Branches

1) The Poultry Branch

We have measured the variations from one year to another in the value of output of the poultry branch and given details about the effect of increase or decrease in production against the effect of variations in the prices of eggs and poultry meat.

Table 22

Year to Year Variations in the Quantity and Price of the Poultry Branch Production

	1954/55 compared to <u>1953/54</u>	1955/56 compared to <u>1954/55</u>	1956/57 compared to <u>1955/56</u>	1957/58 compared to <u>1956/57</u>
Variation in quantity of eggs, '000 eggs	16.1	-1.8	7.9	22.3
Variation in price of eggs, Pruta per unit*	6	8	13	-6
Variation in quantity of poultry, kg	510	740	-740	-70
Variation in price of poultry, pruta per kg*	-10	-245	265	-70

*) All prices are on the farm.

Table 23

Effect of Variations in Price and Quantity on the Year to Year Differences in the Value of Output of the Poultry Branch IL

	1954/55 compared to 1953/54	1955/56 compared to 1954/55	1956/57 compared to 1955/56	1957/58 compared to 1956/57
<u>Increase in Value of Output</u>	<u>2365</u>	<u>1400</u>	<u>900</u>	<u>3055</u>
Thereof due to change in:				
quantity of eggs	1045	-135	640	2070
prices " "	335	570	935	-455
quantity of poultry	1000	1465	-1350	1565
prices " "	-15	-500	675	-125

In the previous chapter (Table 19) we showed that the value of total output has increased by IL 2530 in 1954/55 compared to 1953/54. In table 23 we see that the increase in value of production of the poultry branch alone has contributed almost the whole of this sum. Most of the increase was a result of quantitative expansion, and was almost equally divided between the production of eggs and poultry meat. The rise in egg prices has had only a slight effect, and the prices of poultry have even caused a slight decrease in the output value.

In 1955/56 the poultry branch has contributed only about a half of the increase of total output value. This increase was mainly due to a sizeable expansion in broiler production, and a slight increase in the egg prices. The quantity of eggs has somewhat declined, and the price of poultry meat has been adversely affected by the increased supply.

In 1956/57 the share of the poultry branch in the increase of the total output value was rather small (IL 900 out of IL 3350). The reason was the decline in poultry meat production, which, though it caused an increase in its price, could not offset the decline in value of production. The increase in value of output of the poultry branch was due to the increase of egg production which has been accompanied by a rise in their prices.

In 1957/58 the poultry branch was again the cause for a very strong increase in the value of output, though the prices of both eggs and poultry meat have declined. But the quantitative increase of production, especially of eggs, has offset this negative effect. This increase can mainly be attributed to the "Government Agreement on Egg Prices" which assured fixed prices.

2) The Dairy Branch

Table 24

Year to Year Variations in the Price and Quantity of
the Dairy Branch Output

	<u>1954/55</u> compared to <u>1953/54</u>	<u>1955/56</u> compared to <u>1954/55</u>	<u>1956/57</u> compared to <u>1955/56</u>	<u>1957/58</u> compared to <u>1956/57</u>
Increase in the quantity of milk, kg	700	1100	1300	3200
Increase in the price of milk, pruta	4	21	17	12
Increase in the price of milk, %	2	9	7	5
Increase in the quantity of cattle, cattle units	0.11	0.22	0.55	0.37
Increase in the price of cattle, IL	210	175	210	250
Increase in the price of cattle, %	26	17	18	18

Table 25

Effect of the Variations in Quantity and Price on the
Year to Year Differences in the Value of Output of
the Dairy Branch in IL

	<u>1954/55</u> compared to <u>1953/54</u>	<u>1955/56</u> compared to <u>1954/55</u>	<u>1956/57</u> compared to <u>1955/56</u>	<u>1957/58</u> compared to <u>1956/57</u>
<u>Increase in the Value of Output</u>	<u>860</u>	<u>1370</u>	<u>2105</u>	<u>2590</u>
Thereof due to changes in:				
quantity of milk	175	250	335	850
price " "	70	400	330	245
quantity of cattle	510	465	675	890
price " "	105	255	765	605

The dairy branch has caused a rise of the value of total output at an increasing rate from year to year. Contrary to the poultry branch, the dairy branch did not suffer strong changes and has enjoyed a steady development in the quantitative production of both milk and meat. In milk prices there has been a rise of 2% - 9% from year to year, and in the prices of beef a rise of 17% - 26%.

During the last years the increase in the value of output of beef was much stronger than that of milk. The sudden increase in the quantity of milk in 1957/58 is outstanding but even in this year beef production and cattle raising has contributed more to the value of output of the dairy branch than the milk, both from the quantitative aspect and especially from the price aspect.

The increase in value of output of the dairy and poultry branches in 1954/55 was bigger than the increase in total farm output (IL 3225 compared to IL 2530). The gap can be explained by the decrease in vegetable production. In other years there was hardly any difference. Only in 1957/58 there has again been a gap due to the decrease in vegetable and other crops the areas of which served for growing fodder for the dairy branch.

C. Variations in Main Input Items (See Diagram 4)

We have gathered accurate data on the purchased feed for the dairy and poultry branches, as well as on the expenses for hired laborers. These three items comprised 58% of the total input value at the beginning of the period, and 69% at its end.

By analysing the above items we find the following changes that have occurred due to price and quantity variations.

Table 26

Year to Year Variations in the Quantity and Price of Main Input Items

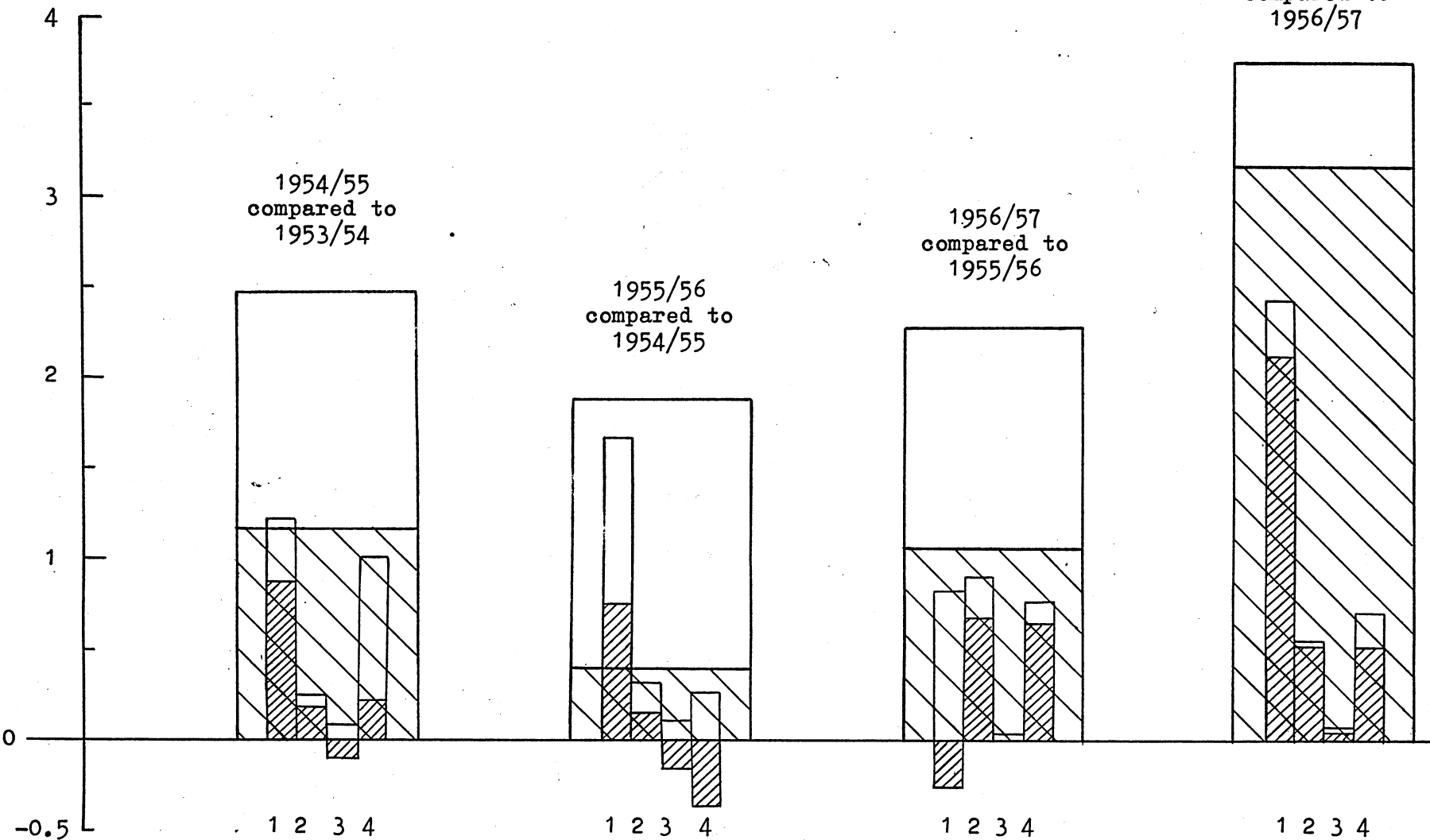
	<u>1954/55</u> compared to <u>1953/54</u>	<u>1955/56</u> compared to <u>1954/55</u>	<u>1956/57</u> compared to <u>1955/56</u>	<u>1957/58</u> compared to <u>1956/57</u>
a) <u>Purchased feed for the poultry branch</u>				
Change in quantity, tons	5.5	4.2	- 1.2	9.1
Change in price, IL per ton*	16	34	27	12
b) <u>Purchased feed for the dairy branch</u>				
Change in quantity, tons	1.1	1.0	3.7	2.6
Change in price, IL per ton*	7	15	18	2
c) <u>Hired Labor</u>				
Change in quantity, labor days	-24	-31	0	6
Change in price, IL per labor day*	0.800	1.300	0.650	0.350

*) All prices are on the farm.

DIAGRAM 4

YEAR TO YEAR VARIATIONS IN TOTAL VALUE OF INPUT
DUE TO QUANTITY AND PRICE VARIATIONS IN THE INPUT ITEMS
FOR THE PERIOD 1953/54 - 1957/58

Year to Year Variations
in IL 1000



Legend

Variations in Total Value of Input

- Due to Price Variations
- Due to Quant. Variations

Variations in Value of Various Input Items

- Due to Price Variations
- Due to Quant. Variations

Input Items

- 1 Feed for Poultry
- 2 Purchased Feed for the Dairy Branch
- 3 Wages for hired Labour
- 4 Miscellaneous

Table 27

Effect of Variations in Quantity and Price of the Main Items
on the Year to Year Differences in Value of Input IL

	1954/55 compared to 1953/54	1955/56 compared to 1954/55	1956/57 compared to 1955/56	1957/58 compared to 1956/57
<u>Increase in value of input</u>	<u>1467</u>	<u>1961</u>	<u>1510</u>	<u>3022</u>
<u>Thereof: a) Purchased feed for the poultry branch</u>				
Due to changes in quantity	880	755	-260	2100
" " " " price	350	915	830	320
<u>Thereof: b) Purchased feed for the dairy branch</u>				
Due to changes in quantity	175	160	670	510
" " " " price	75	170	230	30
<u>Thereof: c) Hired Labor</u>				
Due to changes in quantity	-103	-157	0	42
" " " " price	90	118	40	20

The input value of the three items has increased every year during the period 1954/55 - 1956/57 by IL 1500 - 2000, and in 1957/58 by about IL 3000. Throughout the period, excepting 1956/57, this increase was mainly due to the use of purchased feed for the poultry branch, both with respect to quantities and to prices. Only in 1956/57 the quantities of purchased feed for poultry have decreased, but the rise in its price has continued and caused expenses to rise again. In the same year there has been a considerable increase in the quantity and price of purchased feed for the dairy branch. It is striking that in 1957/58 again two thirds of the rise in the value of input was caused by the increased purchases of feed for the poultry branch. During a period of 5 years the price per ton of poultry feed has risen by IL 89 or by 55% while the price per ton purchased feed for the dairy branch has increased by IL 42 or by 31% only.

The effect of the item "hired labor" on the variations in total value of input has been small, as the decreased employment of hired labor in the first years was nearly offset by the rise in their daily wages.

As to the other input items (chickens, water, seeds, fertilizers, use of machines, depreciations etc) we cannot separate accurately the effect of price movements from those of quantity variations. By using estimates we have come to the following conclusions:

Table 28

Variations in Value of Input of the Other Items Due to Changes in Quantity and Price

	1954/55 compared to <u>1953/54</u>	1955/56 compared to <u>1954/55</u>	1956/57 compared to <u>1955/56</u>	1957/58 compared to <u>1956/57</u>
	IL	IL	IL	IL
<u>Increase in value of input</u>	<u>1030</u>	<u>20</u>	<u>820</u>	<u>750</u>
Thereof due to changes in:				
quantity	230	-230	670	540
price	800	250	150	210

It is difficult to give a detailed explanation of these variations, as there have been changes in opposing directions among the various items that have caused a price rise in one item to be offset by a quantity decrease in another. E.g. The expenses for vegetable growing have decreased with the decrease in area, while the expenses for fodder growing have increased, but the changes have occurred at an unequal pace.

RESULTS OF SURVEY ON THE PROFITABILITY OF
ESTABLISHED FAMILY FARMS IN MOSHAVIM FOR THE YEARS
1952/53 - 1957/58

FACTORS OF PRODUCTION x

Table 1

	1952/53	1953/54	1954/55	1955/56	1956/57	1957/58
No. of Farms	74	74	74	70	70	70
<u>1. Labor Force</u>						
1. Total family labor days	513	525	506	505	488	509
2. Total hired labor days	122	115	91	60	60	66
3. Total labor days invested in the farm	635	640	597	565	548	575
4. % of family labor in total labor days	80	82	85	90	89	89
5. Total standard labor days	565	624	612	585	566 ¹⁾	632 ¹⁾
<u>Distribution of Standard Labor Days among branches - % xx</u>						
a. Dairy and feed for cattle	..	47	50	53	53 ¹⁾	53 ¹⁾
b. Poultry and feed grains	..	25	29	30	33	33
c. Vegetables and other field crops..	..	25	17	12	8	8
d. Plantations	..	3	4	5	6	6
<u>2. The Area</u>						
<u>A. Size of Physical Area (dunams)</u>						
1. Irrigated	..	24.0	25.0	25.5	27.0	27.5
2. Unirrigated	..	27.0	24.5	23.5	24.0	22.0
3. Total physical area	..	51.0	49.5	49.0	51.0	49.5
<u>B. Division of cultivated area (dunams)</u>						
a. Grains	..	12.0	13.0	10.5	6.5	5.0
b. Total fodder for cattle	..	34.5	35.0	38.0	44.0	44.0
c. Thereof irrigated fodder	..	20.0	18.5	19.0	23.0	25.5
d. " unirrigated fodder	..	14.5	16.5	19.0	21.0	18.5
e. Vegetables and potatoes	..	8.0	5.5	4.0	2.5	2.5
f. Total plantations	..	2.0	2.0	3.0	4.0	4.0
g. Thereof: fruit bearing plant.	..	0.5	1.0	1.0	1.5	1.5
h. Miscellaneous	..	1.0	0.5	-	0.5	0.5
i. Total cultivated area	..	57.5	56.0	55.5	57.5	56.0

x) The figures are arithmetic averages

xx) The figures are weighted averages

..) Data not fully available

1) After correcting the labor norms in fodder crops from 1956/57 onwards

1952/53 1953/54 1954/55 1955/56 1956/57 1957/58

3. Size of livestock branch

A. Dairy branch (annual average of number of heads)

1. Cows	4.3	4.5	4.6	4.7	4.9	5.5
2. Heifers	3.7	4.2	4.2	4.6	5.0	5.5
3. Calves	0.2	0.4	0.7	1.0	1.9	2.4
4. Cattle units ¹⁾	6.0	6.6	6.7	6.9	7.5	8.5

B. Poultry branch

1. Total purchased feed supplied during the year-tons	17.7	22.4	28.4	31.7	29.7	38.8
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4. Value of farm assets (IL'000)

1. Value of cattle at the end of the year	5.0	6.8	7.4	8.2	12.2	13.8
2. Value of inventory in the poultry branch at the end of the year	1.7	2.2	2.4	2.7	2.9	3.4
3. Total farm assets	17.4	21.0	23.3	26.2	32.2	..

5. Debts - IL

Total debts	1.327	1.881	2.006	2.863	4.651	..
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6. Own capital - IL'000

Total own capital	16.2	19.5	21.3	22.9	27.1	..
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7. Investments - IL'000

Total gross investments on the farm during the surveyed year	0.9	2.3	2.2	3.0	3.3	2.3
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1) 1 cattle unit = 1 cow or 2 calves over a year old, or 3 calves less than a year old, or 3 calves for fattening under 9 months old, or 2 calves over 9 months old.

PRODUCTION, OUTPUT AND THEIR VALUE

Table 2

	1952/53	1953/54	1954/55	1955/56	1956/57	1957/58
A. Production and its destination						
<u>(IL'000)</u>						
a. Sales through the cooperative	8.7	11.8	14.2	15.8	18.1	21.6
b. Private sales	1.3	1.6	2.2	2.6	3.2	4.0
1. Total cash income	10.0	13.4	16.4	18.4	21.3	25.6
2. Value of produce used in the farm	..	2.5	3.2	3.2	3.7	3.9
3. Value of produce used for household consumption	0.6	0.8	0.7	0.8	0.8	0.9
4. Changes in value of livestock	0.4	1.0	0.6	1.1	1.6	2.2
5. Total production value	..	17.7	20.9	23.5	27.4	32.6
6. Total output value	11.0	15.2	17.7	20.3	23.7	28.7
Increase in value of output in % 1952/53= 100	100	138	161	185	215	261
B. Value of output and its						
<u>Composition According to Branches (IL)</u>						
Total output	11.019	15.159	17.694	20.364	23.710	28.691
<u>Total field crops</u>	2.085	2.114	1.699	1.655	2.098	1.916
a. Grains and fodder	134	158	181	227	109	258
b. Vegetables and potatoes	1.673	1.681	1.177	1.099	1.100	819
c. Plantations	242	236	270	314	607	594
d. Other crops	36	39	71	15	282	245
<u>Total Dairy branch</u>	4.334	5.784	6.621	8.000	9.971	12.507
e. Milk	3.149	3.875	4.102	4.751	5.433	6.568
f. Changes in value of livestock	293	470	117	646	1.154	1.525
g. Sales of cattle	863	1.405	2.353	2.513	3.336	4.376
h. Sales of manure	19	34	49	90	48	38
<u>Total Poultry branch</u>	4.447	6.825	9.273	10.543	11.368	14.239
i. Eggs	2.448	3.660	5.151	5.559	7.206	8.688
j. Changes in value of livestock	72	434	275	361	61	549
k. Sales of poultry meat	1.914	2.710	3.833	4.601	4.090	4.980
l. Sales of manure	13	21	14	22	11	22
<u>Total Miscellaneous</u>	163	436	101	166	273	29

1952/53 1953/54 1954/55 1955/56 1956/57 1957/58

C. Output According to Branches, in %²⁾

a. Grains and fodder	1	1	1	1	1	1
b. Vegetables and potatoes	16	11	7	5	5	3
c. Plantations	2	2	2	2	2	2
d. Dairy branch	39	38	37	39	42	44
e. Poultry - laying hens	40	45	52	52	48	49
f. Poultry - broilers						
g. Miscellaneous	2	3	1	1	2	1

D. Detailed Quantitative Production
According to Main Products

1. Milk (liters '000)	16.6	18.0	18.9	20.3	21.7	25.1		
2. Eggs (units '000)	43.6	56.3	72.4	70.6	78.5	100.8		
3. Poultry meat (tons)	1.1	1.6	2.1	2.9	2.1	2.9		
4. Potatoes (tons)	2.2	3.1	2.5	1.4	..	..
5. Vegetables (tons)	11.8	8.9	6.8	4.9	..	..
6. Fruits (tons)	0.8	1.3	1.2	1.5	..	..
7. Net sales of cattle ¹⁾	1.5	1.7	2.3	2.1	2.4	2.7		
8. Increase in livestock								
	cattle	units	0.5	0.6	0.1	0.6	0.8	0.9

1) Number of cattle units sold after deduction of units bought during the same year.

2) Figures are weighted averages

INPUT AND ITS VALUE*

Table 3

	1952/53	1953/54	1954/55	1955/56	1956/57	1957/58
<u>A. Value of Input</u>						
Total value of input (IL'000)	6.9	9.4	11.8	13.7	16.0	19.7
Increase of input in % of 1952/53	100	136	171	199	232	286
<u>Composition of Input in % **</u>						
a. Purchased feed for cattle	17	18	16	16	20	19
b. Purchased feed for poultry	33	36	40	47	44	49
c. Wages for hired laborers	6	5	4	3	3	2
d. Chickens	4	4	3	6	4	5
e. Water	4	4	5	3	4	3
f. Machine work	4	4	4	3	4	4
g. Seeds	4	3	3	3	2	2
h. Fertilizers	3	2	2	1	2	1
i. Other expenses	17	18	18	13	12	11
j. Total cash expenses	92	94	95	95	95	96
k. Depreciation	8	6	5	5	5	4
<u>B. Feed Supply for the Livestock Branch (In physical units)</u>						
1. Total feed for the poultry branch (tons)	17.7	22.4	28.4	31.7	29.7	38.8
2. Thereof produced in the farm (tons)	1.1	1.3	1.8	0.9	0.1	0.1
3. Concentrated feed for the dairy branch (tons)	7.6	8.4	9.1	9.8	12.6	15.3
4. Total hay supply (tons)	..	..	9.0	12.0	15.4	..
5. Thereof produced in the farm (tons)	..	..	5.5	7.4	10.0	..
6. Total green fodder produced in the farm ('000 feed units)	..	..	9.4	9.4	12.0	..

*) Figures are arithmetic averages.

***) Figures are weighted averages.

PROFITABILITY INDICES*

Table 4

	1952/53	1953/54	1954/55	1955/56	1956/57	1957/58
<u>A. Calculation of profit (IL'000)</u>						
1. Value of output	11.0	15.2	17.7	20.4	23.7	28.7
2. Value of input	6.9	9.5	11.8	13.7	16.0	19.7
3. Net Income	4.1	5.7	5.9	6.7	7.7	9.0
4. Attributed value of family ¹⁾ work	3.8	4.4	4.4	4.6	4.7	5.2
5. Net profit	0.3	1.4	1.5	2.0	3.0	3.8
6. Income per laborer's day (IL) ²⁾	8.3	11.6	12.4	13.8	16.3	17.9
<u>B. Cash Surplus (IL'000)</u>						
1. Total cash receipts	10.0	13.4	16.4	18.4	21.3	25.6
2. Total cash expenses	6.3	8.8	11.2	13.0	15.2	18.8
3. Cash surplus	3.7	4.6	5.2	5.4	6.1	6.8
<u>C. Variations in Output, Input & Net Income from Year to Year</u>						
<u>Output = 100</u>						
1. Output	100	100	100	100	100	100
2. Input	63	62	67	67	67.5	68.5
3. Net Income	37	38	33	33	32.5	31.5
<u>1952/53 = 100</u>						
1. Output	100	138	161	185	215	261
2. Input	100	136	171	199	232	286
3. Net Income	100	141	144	161	188	219

1) Expenses per labor-day of the farm owner were figured at IL.8.- in 1952/53, and increased in other years according to the increase in the cost of Living Index.

2) Laborer's day = 1 labor day of the farm owner; 1.25 labor days of his wife; 1.67 labor days of the children.

*) Figures are arithmetic averages.

PRODUCTIVITY INDICES FOR FARM MANAGEMENT*

Table 5

	1952/53	1953/54	1954/55	1955/56	1956/57	1957/58
<u>A. Productivity Indices for Livestock Branches</u>						
1. Milk Production (liters per cow)	3.730	4.000	4.130	4.310	4.420	4.385
2. Use of fodder for the poultry branch: Production of standard eggs per ton of feed ²⁾	..	3.765	4.037	3.893	3.900	4.050
<u>B. Prices of livestock products</u>						
1. Milk IL per liter	0.204	0.223	0.227	0.248	0.265	0.277
2. Eggs IL per unit	0.056	0.066	0.070	0.080	0.091	0.084
3. Poultry meat IL per Kg.	1.770	2.050	1.830	1.700	1.980	1.840
4. Cattle head IL per cattle Unit	575	800	1.010	1.185	1.395	1.645
<u>C. Prices of Main Production Materials</u>						
1. Daily wages for hired laborer IL per day	4.050	4.750	5.250	6.500	7.200	7.400
2. Concentrated feed for cattle IL per ton	109	134	159	174	193	195
3. Concentrated feed for poultry IL per ton	130	162	186	213	235	244
4. Purchased feed unit for the dairy branch - IL	..	0.158	0.165	0.180	0.198	..
5. Feed unit produced in the farm - IL	..	0.218	0.227	0.239	0.220	..
<u>D. Labor Productivity</u>						
1. Labor days actually invested in the farm in % of standard labor days	108	106	102	103	101 ¹⁾	94 ¹⁾

1) The decline is a result of a decrease of the labor norms for fodder crops

2) The term "standard eggs" brings under a common denominator eggs and poultry meat production 1 kg of poultry meat equals 20 eggs.

*) Figures are arithmetic averages.

COMPARISON OF FACTORS OF PRODUCTION, OUTPUT, INPUT AND NET INCOME IN 3 FARM
GROUPS WITH HIGH, MEDIUM AND LOW INCOME

Table 6

	G r o u p A						G r o u p B						G r o u p C					
	52/53	53/54	54/55	55/56	56/57	57/58	52/53	53/54	54/55	55/56	56/57	57/58	52/53	53/54	54/55	55/56	56/57	57/58
Total standard labor-days	..	901	888	836	814	969	..	585	584	562	534	577	..	440	402	383	388	412
Labor productivity	..	95	90	89	(95)	(84)	..	108	105	..	..	96	..	111	108	102	(105)	(98)
Irrigated area, in physical dunams	..	31.3	32.3	33.2	37.5	37.5	..	24.1	25.5	25.7	27.2	27.9	..	16.9	17.5	17.1	16.4	16.0
Total cultivated area, in cultivated dunams	..	103.0	97.7	90.2	88.8	92.7	..	47.2	47.7	46.8	44.2	48.4	..	36.8	34.4	37.7	39.2	35.3
Number of cattle-units (annual average)	9.4	9.5	9.7	9.5	10.1	11.4	5.6	6.3	6.5	6.9	7.2	8.5	4.0	4.3	4.0	4.1	5.0	5.8
Total annual feed input in the poultry branch (tons)	28.0	41.4	47.0	51.4	48.8	65.9	16.8	..	21.6	26.4	26.0	31.7	9.4	11.0	15.0	20.4	19.5	26.8
Value of farm assets (not depreciated) at the end of the year- IL	26.9	32.8	36.4	40.1	48.8	..	16.1	19.0	21.4	23.9	29.6	..	10.9	13.7	14.7	17.3	21.2	..
New investments in the farm - IL	1860	2955	3825	3920	4440	3120	670	2240	2030	2735	2990	2655	450	1950	975	2640	2680	840
Total debts at the end of the year IL	585	1210	1650	2830	5405	..	1680	2060	2095	2955	4590	..	1235	2130	2150	2700	4030	..
Value of output in the dairy branch- IL	7435	9250	10605	12510	14955	17505	3750	5350	6220	7590	9460	12480	2565	3340	3580	4360	6085	7565
Value of output in the poultry branch"	7800	12405	16060	18000	19295	25485	4085	6000	6235	8275	9625	1395	1950	3190	4955	6570	7005	8875
Value of output in vegetables - IL	2490	2525	1485	1400	2460	2400	1675	1550	1320	1160	1225	625	1010	1310	840	730	635	650
Value of output in all the other branches - IL	<u>835</u>	<u>1155</u>	<u>990</u>	<u>1000</u>	<u>1080</u>	<u>1345</u>	<u>365</u>	<u>830</u>	<u>2360</u>	<u>1135</u>	<u>1005</u>	<u>800</u>	<u>660</u>	<u>510</u>	<u>545</u>	<u>830</u>	<u>1025</u>	<u>705</u>
Total output	18560	25335	29140	32910	37790	46735	9875	13730	16135	18160	21315	25300	6185	8350	9920	12490	14750	17795
Value of feed input for the dairy branch - IL	1555	2180	2640	3210	3975	4990	1115	1575	1840	2150	3305	3800	1025	1275	1315	1485	2250	2475
Value of feed input for the poultry branch - IL	3600	6125	8270	10385	11275	16320	2195	2885	3925	5670	6250	7850	1250	1755	2840	4250	4585	6750
Value of all other input items in all branches - IL	5145	6110	7270	7585	9110	10060	3025	4220	5070	4370	5100	5590	2560	3000	3550	3780	3845	4150
Total Input	10300	14415	18180	21180	24360	31370	6335	8680	10835	12190	14655	17240	4835	6030	7705	9515	10680	13375
Net income - IL	8260	10920	10960	11730	13430	15355	3540	5050	5300	5970	6660	8060	1350	2320	2215	2975	4070	4420
Net income according to the groups by changing the order every year	8260	11065	11300	12140	14250	16580	3540	5100	5103	6016	6965	7930	1350	2055	2140	2475	2600	3490

