CHAPTER IX

AGRICULTURE

GROSS AGRICULTURAL output[1] rose 20 per cent in 1956/57[2] over 1955/56 and was estimated at IL.631 million[3] at current prices (prices received). In real terms, the increase in output was 10 per cent over that in the previous crop year, while prices received by farmers increased on the average by 9 per cent.

The real increase in output was smaller in 1956/57 than in 1955/56 (16 per cent). However, taking into consideration that 1955/56 was a rainy year, following the drought of 1954/55, while 1956/57 followed a good agricultural year, it cannot be concluded from the different rates of increase in output that the expansion of agricultural activity slowed down, as the rate of increase of input of raw materials, services and labour was the same in 1956/57 as in 1955/56.

The pattern of output changed somewhat in 1956/57. There was a relative increase in the output of producer goods (mainly in livestock and plantations) and in the production of raw materials for agriculture and industry[4] (mainly feed grains, industrial crops and meat) and a smaller expansion in the production of consumer goods. As a result of opposed tendencies the output of eggs and deciduous fruit rose, while that of potatoes, bananas, table grapes and citrus to some extent fell.

These tendencies may be attributed to the variations in the profitability of the various agricultural products, largely caused by the fluctuation of prices and subsidies in the past year. The extensive investments made in cattle and other livestock for meat in 1954/55 as a result of the high prices received for meat, led to the expanded production of meat and milk during the period under review. The same was true for egg production. The substantial expansion in the output of raw materials for agriculture (intermediate products), especially field crops, was really caused by the rising demand of farmers for feed grains for the production of livestock products. Furthermore, there was an increase in new investments in producer goods caused by the relatively high profitability in former years of livestock and poultry products. However, in 1957, there was an addi-

[1] Including output of raw materials for agriculture (intermediate products) and output of agricultural producer goods.

[2] Crop year October 1956–September 1957.

[3] Provisional estimate.

[4] Raw materials for industry include: milk, beef and veal, mutton and other meat; industrial crops and fruit and vegetables for the canning industry.

tional price increase for these products, as a result of rising demand for livestock products brought about by population growth and by changes in consumer habits. The rise in average personal income was also responsible therefor. The marketed quantities of fruit and wine grapes also rose when the orchards and vineyards planted in 1952/3 and 1953/4 (when fruit prices were relatively high) came to maturity. Even though the rise in these fruit prices slowed down in 1956/57, additional investments were made for their production, which will lead to larger supplies only later on.

On the other hand, the production of industrial crops did not rise as much as was hoped. However, allowing for reduced supplies of citrus to industry (due to the decline in the quantity of windfalls) and the fall in olive production (due to physical conditions), a relatively high increase is shown in the output of these commodities. However, with the possible exception of sugarbeet, the production of annual industrial crops was not caused by higher profitability and expanded input, but was largely the result of physical conditions. There was practically no increase in the volume of planned production, which is affected to a great extent by profit considerations.

These trends in the development of agricultural production are not conducive to a rapid reduction in the trade deficit. Instead of a rise in the profitability of commodities for which added value calls for relatively less real means of production—such as land, producer goods, raw materials and labour—there was an increase in the profitability of the very commodities whose production involved relatively high real expenditure for the earning of added value. Instead of expanding the output of livestock and poultry products as well as that of feed grains, the production of cotton, groundnuts and other oil-seeds could have been expanded. A considerable share of investment in livestock, both from farmers' own means and from those of the financing institutions, could have been diverted to the extension of the irrigation network and to the acquisition of other means of production. These are required for the expansion of output in such sectors as contribute considerably more to the improvement in the balance of payments, had their profitability been higher than that of the other sectors concerned.

These developments in sector profitability may be attributed, in the main, to the distortion of prices caused by the import policy and the price policy. Most of the older settlements being based on mixed farming, concentrating on animal husbandry and poultry farming, there is continued pressure to protect these sectors against competitive imports of milk and meat products, as well as of eggs. Similar protection is not adequately extended to industrial crops which form the basis of part of the new settlements.

The desire of farmers to ensure income from domestic output of livestock products, leads to the expansion of the area sown to feed grains, thus reducing their dependence on imports, even though domestic production of feed grains competes during the same season directly with industrial crops, in respect of land, water, labour and other means of production, the production of which involves

less input materials for the earning of added value in foreign exchange. The import duties imposed on the importation of feed grains thus encourages the expansion of home production of these crops.

Price increases are caused to a large extent by this policy of restricted import, while the high subsidies paid in order to prevent the possible rise in the consumers' price index contribute directly to the higher profitability of these sectors and, indirectly engender increased demand for these products.

The results of these developments are also reflected in the position of "crop farms" and of "dairy farms" [1] in the new settlements as borne out by an inquiry made in 1956/7.[2] In the settlements covered by this inquiry, the net annual income of a "dairy farm" was 26 per cent higher than of a "crop farm". Although the differences in income are mainly attributable to the location of the farms, to their difference in age and in the level of skill, as well as to the volume of investment and capital owned, the difference in the profitability yielded by the branches in which the holding is engaged also affects their income. As the farmer is guided by relative profitability, and not by the general interest of the improved balance of payments, investment capital which farmers were able to raise (from their own capital and from credit) was mainly diverted even on crop farms to livestock production and not to the expansion of the irrigated area.

The higher subsidies given in respect of agricultural output as well as the increase in demand for certain agricultural products led to a greater increase in prices received than in prices paid by farmers. This improvement in the exchange conditions of agriculture, together with the increase in labour and output productivity and the expanded production, was also instrumental in increasing net average income per holding and the total income for agriculture.

Input of agriculture, excluding payments to means of production, rose by 20 per cent at current prices, and amounted to about IL. 313 million. As a result of the quantitative increase, input was expanded by 13 per cent, while price increases were responsible for a rise of 6 per cent.

National income originating in agriculture (at factor cost) rose by 19.5 per cent and amounted to IL.318 million (see Table IX–1).

In view of the fact that the estimated increase in input of man-days was relatively low in agriculture (about 5.5 per cent), the increase in average income originating in agriculture was about 13 per cent.

The incomes of the different farm groups and the annual changes therein differ considerably, depending on the different branches in which the settlements are engaged, on the type of holding, their age, the investment level and their geographical location. On the whole, income in the new settlements continued to be relatively low in 1956/57, in spite of improvements. The slow pace of in-

[1] "Crop farm"—a holding mainly growing industrial and other field crops. "Dairy farm"—a holding mainly engaged in livestock and feed grain production.

[2] The "Survey of Immigrant Settlements" prepared within the framework of the "Survey of Family Holdings" by the Faculty of Agriculture of the Hebrew University.

TABLE IX–1

Estimates of Output, Input and Income Originating in Agriculture 1955/56–1956/57

(At current prices—millions of IL.)

	1955/56[a]	*1956/1957*	*Percentage change*
Output[b]	527	631	19.7
Input[c]	261	313	20.0
National Income originating in agriculture	266	318	19.5

SOURCE: See Tables IX–2, IX–3, IX–4 and IX–9.

[a] Revised figures.

[b] Including the marketing of consumer goods and farm consumption; including also raw materials for agriculture and industry (intermediate goods), and producer goods originating in agriculture: livestock, fruit plantations, afforestation and land reclamation.

[c] Including raw materials and services bought from other sectors, imported raw materials and intermediate goods. Excluding wages, interest, rent and profits.

vestment made in these settlements, financed by the Jewish Agency and the Government, was one of the main factors responsible for this situation. It obliged settlers to seek partial employment outside their farms—either in employment relief or in other employment yielding low wages.

Contrary to 1955/56, there was a feeling of relative ease among farmers during the bumper year of 1956/57. The financial tension was somewhat alleviated with the improvement in the liquidity position, particularly in the older settlements. This was the result of the real increase in net income and of the additional credit made available to agriculture by banking institutions and other sources.

Even though the basic problems of the inappropriate financial structure (arising from the shortage of own capital and from the short-term financing of investments) of the majority of agricultural settlements have still to be solved, the expansion of short-term credit to finance growing current production brought some relief, while the position of the Kibbutz settlements which were in financial difficulties was alleviated by the consolidation and funding of their short-term debts. These improvements occurred in spite of the somewhat slower rate of increase in bank credit directed to agriculture which, during the period under review, was lower than the rate of increase in the value of output.

1. OUTPUT

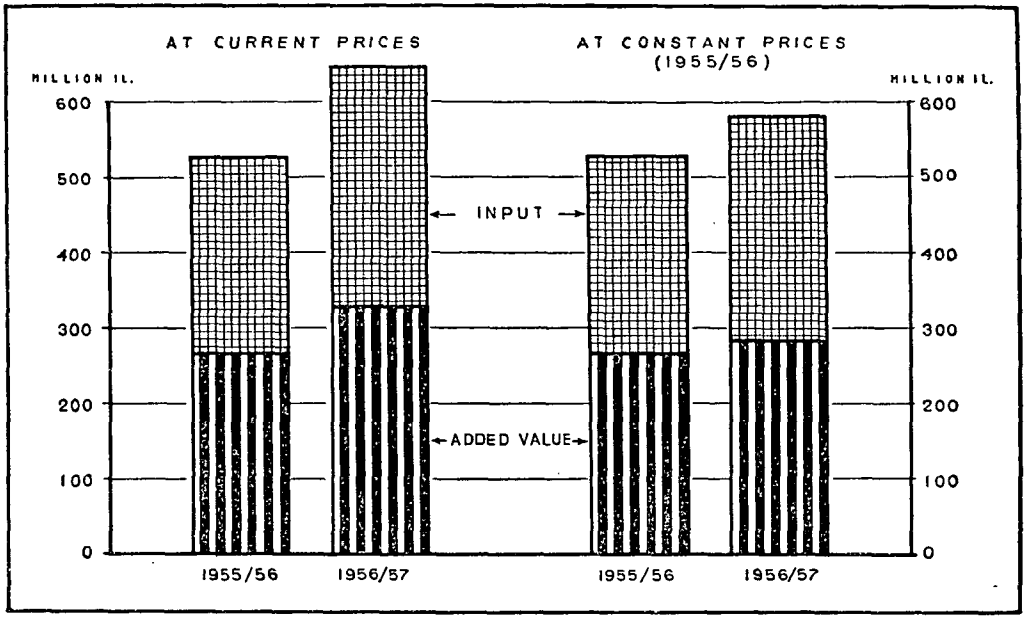
(a) *Quantitative changes in output*

The largest quantitative increase occurred in the output of agricultural producer goods which rose by about 23 per cent in real terms (see Table IX–2).

DIAGRAM IX–1

Agricultural Output, 1955/56–1956/57

(millions of IL.)



This expansion was mainly in livestock production (reflected in higher numbers and weights), rising by about 44 per cent in 1956/57 over 1955/56. It was the result of the higher prices received for livestock products, i.e. meat and milk, as well as for eggs (see Table IX–3). There was also a substantial increase in investment for the expansion of the irrigation network. This expansion was in part caused by the considerable rise in feed grain prices during the winter months which caused an increase in the area sown to summer grains under irrigation.

The area of fruit plantations was increased by about 14 per cent, mainly citrus groves, the planting of which was encouraged by continuous high export prices and by the additional loans given for planting from the Development Budget.

There was a quantitative increase of about 10 per cent in the output of other agricultural producer goods (afforestation, soil amelioration and conservation etc.), principally financed from public sources. This increase was due to increased agricultural employment relief works, financed by the Ministry of Labour, and to expanded investment in farms attached to agricultural schools and research stations.

Raw materials for agriculture (intermediate products) also rose by about 14 per cent. This was due to an increase in the area sown to summer grains, as a

result of higher feed grain prices during the first part of the year, and to the large increase in the average yields of maize and sorghum.

The output of raw materials for industry rose by about 11 per cent, mainly because of the better cotton harvest. This harvest exceeded that of 1955/56, when about half of it was destroyed by parasites. Extensive measures to avoid the recurrence of damage were adopted in 1956/57. However, the high costs of additional spraying and the risk involved in growing this crop led to a reduction in the area sown to cotton, which did not attain the level of 1955/56.

The production of sugar beet almost doubled, following an increase in the production capacity of the domestic sugar industry. The expansion of the cultivated area and the considerable increase in average yields per dunam (mainly in the south), were responsible for the increased production. The production of wine grapes also rose, when the new vineyards began to yield. Livestock production for industry[1] rose considerably: this increase was largely due to meat prices, which have been relatively high in the past two years, leading to larger investments in livestock; the impact is now making itself felt. Cow milk deliveries rose by about 9 per cent following the increase in herds. The average yield per

TABLE IX–2

Estimated Output of Agriculture, by Destination, 1955/56–1956/57

(At current prices—millions of IL.)

Destination	*Million IL.*		*Percentage increase*		
	1955/56	*1956/57*	*Value*	*Quantity*	*Price*[a]
Consumer goods					
Farm consumption	50.6	56.8	12.3	1.3	10.8
Marketing	163.7	196.2	19.9	7.4	11.6
Exports	68.4	81.2	18.7	6.7	11.2
Total	282.7	334.2	18.2	6.1	11.4
Raw materials					
For agriculture	86.6	102.0	17.8	13.9	3.4
For industry	103.7	123.7	19.3	11.3	7.2
Total	190.3	225.7	18.6	12.5	5.6
Producer goods	54.3	71.5	31.7	22.7	7.4
Grand total	527.3	631.4	19.7	10.1	8.8

SOURCE: Central Bureau of Statistics, except for prices of selected commodities and data on producer goods, see Tables IX–3 and IX–9.

[a] Prices received.

[1] As all whole milk and meat (excluding almost all poultry meat) marketed by the agricultural sector is channelled to dairies and slaughterhouses where they are processed, they have been included under "raw materials for industry".

cow fell somewhat, as the increase in the numbers of cows was mostly in new farms where the level of efficiency is relatively low.

Although output increased in these sectors, there was a fall in citrus deliveries, owing to a decline in the quantity of windfalls, which led to reduced supplies to the domestic market,[1] and because of the difference in the prices of fresh fruit for consumption and for industry.

Vegetable supplies to industry also fell as a result of the high prices received by producers for fresh vegetables on which government subsidies were paid. The fall in olive production was due to the decline in average yields.

The output of wheat intended for flour mills fell somewhat, in view of the increase in exports.

The output of consumer products rose by about 6 per cent, and is believed to have been almost wholly sent for marketing. The greatest increase (43 per cent) was shown by deciduous fruit, when the young orchards began to yield.

Egg production rose by about 25 per cent, largely due to the increased number of laying hens following the higher prices received for eggs. As a result, the production of poultry meat fell, leading to an increase in its price. The output of melons also rose, as did that of vegetables and potatoes mainly in the new settlements. This was the result of guaranteed prices and subsidies, as well as of the increase in average yields. The production of bananas, however, fell by about 13 per cent, following damage caused by frost. The output of other consumer products (pulses, citrus, potatoes, fish, flowers, etc.) rose to a lesser extent.

The export of agricultural products rose in 1956/57 by about 6.7 per cent[2] in real terms. There was a 3.1 per cent increase in citrus exports, (representing about 94 per cent of total agricultural exports) rendered possible by the improved quality of the fruit and the rise in the quantities exported. There was also a large increase in the export of domestic hard wheat, amounting to about IL. 2 million, and of eggs, amounting to about IL. 1.3 million. The export of table grapes, fish, wool, feathers, animal hair, etc. also rose; but their volume has not yet reached commercial quantities. On the other hand, there was a fall in the export of groundnuts, owing to a decline in the quality of the domestic harvest caused by physical damage, and to the fall in export profitability. The export of melons, bananas and flowers also declined.

(b) *Prices received*

Prices received by farmers for gross output were estimated to be 9 per cent higher in 1956/57 than in 1955/56 (see Table IX–3).

The largest increase took place in the prices of consumer products, as a result

[1] As prices abroad continued to exceed those of the domestic market again this year, all good quality fruit was channelled to exports.

[2] Data relating to the increase in agricultural exports, shown in Chapter III—the Balance of Payments and Foreign Trade—refer to the calendar year 1957. The real increase in this year amounted to about 11 per cent.

of the increase in subsidies designed to curb the rise of the consumers' price index, as well as of the increase in demand, and of the reduction in the supply of certain products.

Subsidies on agricultural output[1] totalled IL. 31.2 million in 1956/57, exceeding the 1955/56 level by 65 per cent. They represented about 7.8 per cent of the value of marketed agricultural produce (producer prices).

Most of the subsidies given over the year were intended to check the rise in the consumers' price index. In general they replaced that part of the price which the producer would have anyway received for the same quantity supplied with a fixed maximum price. However, because of the subsidies, the prices received for certain products (such as potatoes, and, in certain periods, bananas and tomatoes), were higher than those expected on the free market. This may have been due either to a wrong estimation of the expected price, or to the absence of control. The expansion of the volume of subsidies in 1956/57 over 1955/56 led to an increase in the average prices received by farmers as compared with those in the previous year.

Higher subsidies, designed to prevent a rise in consumer prices, were in most cases the result of price increases which had occurred or were expected to occur both in producer and in consumer prices. In a number of cases, these price increases were the result of reduced supplies such as of bananas and of a number of vegetables. In other cases, such as eggs, it may have been the result of increased demand. Sometimes, it was caused by the extension of or the shift in seasons. In other words, due to specialization and to farming in new areas, the production of certain fruits and vegetables was carried over to growing seasons not traditionally their own. As a result, these products were sold at relatively high prices, and there was thus an increase in their average annual price.

The prices of poultry meat rose on the average by more than 20 per cent, following a reduction in its supply. On the other hand, the average prices of melons and deciduous fruit fell because of an increase in their supply.

The prices of agricultural raw materials for industry rose owing to the increase in cotton and milk prices (fixed by the Government) as a result of higher production costs. The prices of vegetables for the canning industry rose due to reduced supplies, while there was a rise in the prices of beef, mutton and other meat as well as of sheep milk due to increased demand. Increased supplies of fruit and certain oil seeds led to a fall in the prices of these products.

The prices of most intermediate products seemed to have remained stable on the average, with the exception of seeds, feed milk for livestock and eggs for hatching, whose prices increased.

The subsidy policy is largely dictated by considerations of price stability. However, temporary subsidies paid during the high seasons (as a supplement to the market price), and the high subsidies granted during periods of shortage (re-

[1] Excluding direct and indirect payments to production factors.

TABLE IX–3

Average Prices Received by Farmers and Agricultural Output in 1956/57 as compared with 1955/56

Item	*Percentage increase or decrease (–)*		*Weights*
	Price	*Quantity*	
Finished consumer goods			
Potatoes and vegetables	6.8	6.3	8.4
Fruit and melons	3.2	7.0	7.6
Eggs	18.2	24.6	5.5
Fish	18.0	2.8	2.1
Poultry meat	20.7	– 5.0	6.8
Farm consumption	10.8	1.3	9.6
Exports of citrus fruit	11.7	3.1	12.1
Other exports	4.1	59.3	0.8
Miscellaneous	1.3	7.2	0.8
Total	11.4	6.1	53.7
Raw materials			
For agriculture	3.4	13.9	16.4
For industry, of which			
Vegetable: groundnuts	1.2	125.0	0.2
cotton fibres	17.2	28.1	1.3
oilseeds	32.6	66.5	0.1
sugarbeet	11.8	96.7	0.3
miscellaneous	0.2	– 2.0	5.9
Animal: cow milk	4.0	8.7	7.4
goat milk	24.1	11.6	0.6
meat	17.0	18.9	3.6
honey	14.3	–45.2	0.2
fish	18.0	28.0	0.1
Total	5.6	12.5	19.7
Producer goods			
Livestock	17.3	43.6	1.8
Plantations	6.5	14.0	3.5
Irrigation network	1.5	35.1	2.1
Miscellaneous	6.5	10.0	2.8
Total	7.4	22.7	10.2
Grand total	8.8	10.1	100.0

SOURCE: Central Bureau of Statistics. Sheep milk and meat prices—Ministry of Agriculture. Producer goods—see Table IX–9.

placing part of the market price) are worth their while; not only because they prevent a rise in the cost of living allowance during a given period, but because they also tend to prevent the need for subsidies insofar as they have been guaranteed in advance, in the following season or even during the same season. They thus increase the supplies which either avoids price increases or even causes their fall.

Subsidies given through the Minimum Price Fund to prevent farmers' losses during period of glut encouraged the expansion (or, alternatively, prevented the reduction) of supplies in the following season. Subsidies accompanied by fixed maximum prices, given during a period of relatively reduced supply, enabled farmers in most cases to receive expected prices even in the absence of a fixed market price. In certain cases, the expected prices were even exceeded, due to the absence of effective control or due to the high rate of subsidy. This, too, was an incentive for expanding production in the following season.

The same was true for output subsidies paid to the principal industrial crops and to new settlements. These subsidies give the farmer an increment in addition to the market price, thus encouraging the expansion of output. It is probable that the milk subsidy, representing 30 per cent of the consumer price, permits production on a higher level than would have been possible under free market conditions without subsidies. Although the expansion of output is desirable for industrial crops in view of their favourable impact on the balance of payments, this is less certain for vegetables during periods of glut. This applies also to milk, fruit and vegetables, insofar as these products represent a substitute for products earning added value at lower real costs.

The large Government expenditure incurred thereby, in spite of the subsidy policy, led to the conclusion of agreements in respect of vegetables and eggs which will be in force between the middle of 1958/59 and the middle of 1960/61. According to these agreements, the Government undertakes to pay a subsidy of IL. 5 million on vegetables, and to guarantee fixed producer prices for eggs and feed grains, in order to ensure supply at quantities which will prevent price fluctuations in these commodities, as hitherto. The area sown to vegetables will be planned by the Vegetable Production and Marketing Board within the framework of the Vegetable Agreement guaranteeing producer prices for harvests from these areas. In view of the relatively high prices offered by the Board, planners had to limit the areas for which prices were guaranteed in order to avoid over-production.

2. Input

(a) *Quantitative changes in input*

The input of goods and services (excluding wages, interest and rent) increased in 1956/57 by 13 per cent in real terms against 1955/56 (see Table IX–4).

According to estimates based on fixed labour norms, labour input rose by about 5.5 per cent or less in 1956/57.

The difference between the increase in services and material input and that of labour input was the result of the changed pattern of production during the period under review. The change in pattern was due to changes in the relative profitability of the different agricultural branches and by other factors. Branches having a relatively low labour component such as poultry, animal husbandry, certain field crops and plantations expanded their output. Those involving a greater labour input such as vegetables, potatoes and in particular olives showed less expansion. This difference was also the result of the tendency to reduce labour input by the substitution of capital (reflected by equipment, raw materials and other producer goods). This tendency was influenced by the high cost of labour relative to the use of capital, and by the non-employment of hired labour in a considerable number of agricultural settlements—either because of the distance from labour resources or because of ideological reasons. The relatively high labour costs are also due to the low cost of certain producer goods as a result of cheap credit (given at low interest and not wholly value-linked) and the subsidies given on certain raw materials such as fertilizers and water. These factors were also operative in previous years.

TABLE IX–4

Estimated Input to Agriculture (excluding added value) by Origin, 1955/56–1956/57

(At current prices—millions of IL.)

Origin	*Million IL.*		*Percentage increase*		
	1955/56	*1956/57*	*Value*	*Quantity*	*Price*[a]
Agriculture (intermediate goods)	81.1	97.8	20.6	16.1	3.9
Industry	70.5	87.7	24.4	16.9	6.4
Transport	14.0	15.5	10.7	8.9	1.7
Utilities (water and electricity)	18.5	26.4	42.7	11.1	28.4
Investment (Depreciation)	18.4	21.0	14.1	14.1	—
Government	5.6	6.2	10.7	10.0	—
Services	3.1	3.6	16.1	5.5	10.0
Imports	49.8	55.1	10.6	3.8	6.5
Total	261.0	313.3	20.0	12.8	6.4

SOURCE: Central Bureau of Statistics, Ministry of Agriculture and other sources.
[a] Prices paid.

The tendency towards a relative reduction in labour input is reflected in many of Israel's agricultural operations. These include the increase in irrigation and the expanded use of fertilizers, designed to offset the impact of reduced labour

input on harvests. It also includes the acquisition of up-to-date milking machinery and other investments in mechanization.

While it is true that these developments tend to increase average daily output, they are not identical with the increase in labour and output productivity. Even though it may be assumed that productivity also rose as a result of the overall increase in labour efficiency and farm administration, there are no adequate data to measure it.

The cultivated area increased by 3.4 per cent and was 3.8 million dunams in 1956/57. A considerable part of the additional area was land reclaimed in the Hule region, but it also included areas in the hills and in the plain. The major increase came, however, from the increased exploitation of land that had not been regularly cultivated hitherto. A substantial part of the nominal increase may be due to fluctuations in the reliability of the statistical data. The increase in cultivated area has been relatively small in recent years, the cultivation of new lands involving considerable investment.

There was but a minor increase in the unirrigated area. While the area under irrigation rose by about 12 per cent, the increase in the total cultivated area reflected a greater rise in the agricultural production capacity of the land. Unirrigated lands sown to industrial crops rose by about 13 per cent, largely as a result of an increase in the areas sown to sunflower seed and tobacco. No considerable changes occurred in the unirrigated area sown to other crops; but there were changes within the area itself. Unirrigated plantations were irrigated; those not suitable for cultivation were uprooted and replaced. The area sown to barley declined, while that under summer grains increased. There was also a rise in areas transferred to irrigated lands.

The main increase in irrigated areas was in summer grains and in fodder as well as in plantations, especially citrus groves. The same was true for the areas under groundnuts and sugar beet.

According to provisional estimates, water consumption in agriculture rose by about 70 million cubic meters, or about 11 per cent in 1956/57. Most of the additional water was supplied by "Mekorot" from the Yarkon-Negev pipe, from the water-works of Western Galilee, the Kishon, Eastern Galilee, and from other regional water-works.

The main reason for the increase in water consumption was the expansion of irrigated areas. Irrigation was generally provided for areas where the cost of water was relatively high. However, the water consumption of the new crops in these areas is below the country's average. Owing to the favourable distribution of rainfall over the season, average water consumption per dunam fell. This, however, cannot be regarded as a permanent feature, as the new plantations, whose area is relatively large, are bound to increase their water consumption in the future.

According to estimates, the increase (see Table IX–4) in the purchase of imported and home grown feed grains was not wholly used for livestock con-

sumption during the period under review. A considerable part remained in producers' stocks. At the beginning of 1956/57, the prices of food rose considerably owing to the suspension of imports following the Sinai Campaign. Farmers, expecting that the ascending price movement would continue, avoided selling the feed grain which they had been holding in stock since 1955/56. Incidentally, the high prices led the Government to speed up and increase imports of this commodity with a view to lowering market prices. As 1956/57 was a bumper year as well, these factors contributed to an increase in feed stocks.

The input of pesticides also showed considerable changes, largely because of the extensive spraying of cotton fields. The input of irrigation pipes and parts rose as a result of the accelerated pace of laying irrigation. The estimated fall in the purchase of imported seeds was the result of the increase in domestic production.

TABLE IX–5

The Cultivated Area, 1955/56–1956/57

(thousand dunums)

	1955/56	*1956/57*	*Percentage increase or decrease (–)*
Unirrigated area			
Industrial crops	111.5	126.1	13.1
Fodder and feedgrains	2,196.5	2,174.0	– 1.0
Vegetables, potatoes and melons	84.1	85.5	1.7
Fruit plantations	230.0	230.0	—
Miscellaneous	72.9	79.4	8.9
Preparation for irrigation	25.0	30.0	20.0
Total	2,720.0	2,725.0	0.2
Irrigated area			
Citrus groves	220.0	247.0	12.3
Other fruit plantations	110.0	123.0	11.8
Fodder and feedgrains	240.1	306.0	27.4
Vegetables, potatoes and melons	196.5	192.9	– 1.8
Industrial crops	102.7	116.3	13.2
Fish ponds	40.0	40.0	—
Miscellaneous	70.7	74.8	5.8
Total	980.0	1,100.0	12.2
Grand total	3,700.0	3,825.0	3.4

SOURCE: Central Bureau of Statistics.

(b) *Prices paid*

Prices of raw materials and services (excluding wages, interest and rent) rose in 1956/57 by an estimated average of 6 per cent over 1955/56. Input prices for

goods bought from other sectors (excluding intermediate goods) rose at a similar rate.

The cost of water for irrigation rose considerably during the period under review, largely due to the relatively high increase in the price of water and in particular for that supplied by "Mekorot". The increase was the result of higher operating costs and depreciation charges, as well as of the higher cost involved in bringing water from the new water-works. Prices of liquid fuel also rose considerably following their increase after the Sinai Campaign. It would appear that the price of services increased as a result of the wage rise.

3. Income

Income originating in agriculture[1] was 19.5 per cent higher in 1956/57 than in 1955/56 and amounted to IL. 318 million. According to the estimated input of working days, income per working day (less interest and rent paid to other sectors) was IL. 10.3 in 1956/57, against IL. 9.0 in 1955/56, or an increase of 14 per cent. Less than half of the increase was due to quantitative changes in output and input; the remainder was the result of price increases. Discounting the increase in consumer prices (see Chapter VI, Prices) real income per working-day rose by about 5 per cent. In view of the assumption that estimated labour input shows an upward bias, it may be said that the increase in income originating in agriculture per working day was even higher.

The distribution of income from agriculture between the different groups of farmers can only be discussed on the basis of partial data.

(a) *New smallholders' settlements*

A survey of 68 holdings (44 dairy farms and 24 crop farms) in seven immigrant settlements prepared by the Faculty of Agriculture of the Hebrew University in 1956/57, shows that net average annual income from an agricultural holding amounted on the average to IL. 2,570. The net income from dairy farms was higher, exceeding the net income of crop farms by 70 per cent (see Table IX–6).

This survey is not fully representative of all immigrant settlements: it covers only the most advanced holdings, in order to provide reliable data. Nonetheless, it may be assumed that the difference between the two types of farms are in general characteristic of all new immigrant holdings, if not to the same extent.

The main differences in the two farm types and the reasons for their differences, may be summarized as follows:

(i) Until 1956/57, investments made in crop farms were much lower than

[1] Income originating in agriculture is arrived at by deducting the value of services and material input from the value of output at market prices. It is income accruing to factors of production in agriculture—capital, land and labour—in the form of interest, rent, wages and profits.

TABLE IX–6

Input, Output and Income in Selected Immigrant Smallholders' Settlements, 1956/57

(IL.)

	Average per holding		*Percentage difference between "dairy farm" and "crop farm"*
	"Crop farm" [a]	*"Dairy farm"* [b]	
(1) Gross output	4,174	7,350	+76
(2) Input—excluding family members' work and interest on own capital	2,406	4,344	+81
(3) Net income (2)–(1)	1,768	3,006	+70
(4) Income from outside work	885	342	–61
(5) Total income (3)+(4)	2,653	3,348	+26
(6) Income used for investment	660	1,692	+156
(7) Disposable income for consumption (5)–(6)	1,993	1,656	–17
Number of working days of family workers			
(8) On the holding	219	357	+63
(9) Outside the holding	143	38	–74
(10) *Total*	362	395	9
Average income per working day			
(11) On the holding (8) : (3)	8.1	8.4	+ 4
(12) Outside the holding (9) : (4)	6.2	9.0	+45
(13) *Grand total* (10) : (5)	7.3	8.5	+16

SOURCE: "Survey of Family Holdings" Faculty of Agriculture, Hebrew University, Jerusalem.
[a] Mostly industrial and other field crops.
[b] Mostly dairy farming and feedgrains.

those made in dairy farms, both in absolute terms and in relation to their planned volume. The irrigated area of crop farms was 22 dunams instead of the 40 dunams planned; while it was 20 dunams on dairy farms according to plan. Contrary to what was planned, a certain number of crop farms bought cows. They had, however, on the average less than one cattle unit per holding, while the average number of cattle units on dairy farms was four. The difference in investments is partly the result of the age difference in the holdings, as crop farms have been more recently established. But it is also the result of the slow pace at which the Jewish Agency's investments have been made in recent years as well as of the structural difference in the holdings concerned.

Income from capital is thus higher on dairy farms than on crop farms.

(ii) A crop farm supplied to its family members only 60 per cent of the

working days supplied by a dairy farm, in view of its reduced output of agricultural producer goods, and because of the longer period required for growing industrial crops. Moreover, crop farms had to employ more hired labour for seasonal work (harvesting). As a result, farmers were compelled to seek employment outside the farm, at relatively low wages and for longer periods than dairy farmers.

(iii) Owing to the relatively high profitability of livestock production (mainly owing to the influence of the high meat prices), net average income per working day on dairy farms covered by the sample was somewhat higher than on crop farms. However, due to the limited interpretation afforded by the statistical data, it cannot be said that this difference is characteristic of all immigrant holdings.

(iv) The wage difference for outside employment apparently arises from the fact that dairy farmers, located in the coastal area, found outside employment which was usually skilled. The outside employment found by crop farmers, situated in the south and in the Negev, was generally agricultural work and employment relief works for which lower wages are paid.

(v) The geographical location of the farms was responsible for differences in production costs. These were higher on crop farms, due to their greater distance from the marketing centres and owing to less favourable physical conditions (less rainfall, more expensive water costs) that adversely affected their harvests.

(vi) Invested savings amounted to 25 per cent of net income on crop farms and to more than 50 per cent on dairy farms. Owing to the greater profitability of meat production as compared with that of industrial crops, to the desire to cut down outside employment, and in the absence of adequate means of production, a greater part of net income is invested in livestock on dairy farms. As a result, disposable income for consumption is lower on these farms than on crop farms. The latter invested part of their income in the purchase of livestock but, as they still lack adequate cattle sheds and technical knowledge, their volume of investment was lower.

(b) *New kibbutzim*

Available data for income in new kibbutzim are limited. The economic plans of five new kibbutzim, wholly supervised by the Jewish Agency's Settlement Department and prepared by the section for farm planning, show that the average net income per working day was IL. 12 in 1956/57, and did not exceed the income in 1955/56.

These data reflect the position of those farms whose economic position was particularly difficult, because of physical or social conditions. This does not necessarily imply that all young kibbutzim were in the same position because, as a result of the intensive instruction carried out by the Jewish Agency, their income did improve somewhat. But it may be assumed that the net income in

other young kibbutzim, enjoying more favourable conditions, compares favourably with that covered by this survey.

(c) *Old settlements*

No data are available for 1956/57 relating to the income of established smallholders' settlements and kibbutzim, as well as of other types of agricultural farms. Data for 1955/56 relating to the income of established smallholders' settlements show the difference in income in the new and in the old settlements.

The results of a sample survey of 70 holdings in established smallholders' settlements prepared within the framework of the "Survey of Family Holdings" by the Faculty of Agriculture of the Hebrew University are shown in Table IX–7.

TABLE IX–7

Average Income in Established Smallholders' Settlements, 1955/56

(IL.)

Gross annual output	23.500
Input	16.900
Net income	6.600
Net income per working day (Of the farmer and family members)	13.1

SOURCE: "Survey of Family Holdings", Faculty of Agriculture, Hebrew University, Jerusalem.

The highest annual income was reported by poultry-livestock farms reaching IL. 8,000 per holding. The lowest annual income was yielded by the mixed poultry and market garden holding and amounted to IL. 4,900. However, the net income of the family members per working-day was similar in both types and amounted to IL. 13. These differences are largely due to the more balanced distribution of work throughout the year in livestock farms.

In view of the fact that 1956/57 was a bumper year, when the exchange conditions were in favour of agriculture, it may be assumed that in that year income in these holdings was not below that of 1955/56.

4. INVESTMENTS

(a) *The volume of investments*

Gross investment in agriculture (including investment in water-works) was estimated at IL. 158 million in 1957 as compared with IL. 133 million[1] in 1956

[1] Revised figure.

(see Table IX–9). Of this rise of 19 per cent, price increases accounted for 7 per cent, while the increase in real terms was about 12 per cent. The investment in agricultural farms rose relatively more than that in public development projects (afforestation, water-works, drainage, etc.)

(i) *Investments in agricultural farms and their causes*

The value of investments in agricultural farms rose by about 21 per cent, due largely to the increase in real terms, and to a minor extent to price increases. Livestock accounted for the largest relative increase. The number of milch cows on Jewish farms rose from 40,000 to 44,000; while investments in dairy equipment represented about IL. 14 million. Investments in poultry farms also rose substantially and are estimated generally to stand at IL. 18 million. Investments in the installation of irrigation networks also expanded considerably. The area planted to fruit trees of which more than half were citrus groves, rose by 14 per cent over the previous year, in real terms.

There was a real decline in other agricultural investments, following the reduction in 1957 in imports of agricultural machinery. The number of caterpillar tractors in use, mainly suitable for extensive agriculture and for work on virgin lands fell somewhat in 1957 as a result of obsolescence. They were not fully replaced by new imported tractors. On the other hand, there was a rise in the number of wheeled tractors, particularly suitable for the cultivation of irrigated areas and for plantations. The number of combines in use rose and that of balers remained unchanged.

TABLE IX–8

Agricultural Machinery, 1956–1957

	Imports in 1956 [a]	*Machinery Park at the end of 1956* [b]	*Out of use in 1957*	*Imports in* 1957	*Machinery Park at the end of 1957*
Tractors					
Caterpillar	100	1.630	130	50	1.550
Wheeled	750	3.070	20	100	3.150
Total	850	4.700	150	150	4.700
Countries	107	896	46	90	940
Balers	60	660	50	50	660

SOURCE: Central Bureau of Statistics and the Ministry of Agriculture.
[a] Including changes in stocks of the Jewish Agency.
[b] Revised figures.

Investment in citrus packing stations was reduced upon the completion of the central packing stations built in recent years. It may be assumed that extensive investments were made in barns, grainstores, silos etc.; but the size of the investment has not yet been estimated.

The principal causes for the supply of additional producer goods to agricultural farms were: (a) The employment of idle factors of production, mainly manpower, as a result of the expansion of farm settlements and the absorption of immigrants, as well as due to the obsolescence of producer goods on farms; (b) The profitability of production, as a result of price developments of finished products, of higher labour and output productivity (due to scientific and technical innovations), and of the availability of cheap credit.

These causes, whose impact varies from year to year, have been very much in evidence in Jewish Agriculture, almost since its beginning and, in particular, since the inception of the State. These tendencies were strengthened by the inflationary conditions prevalent during this period, on the one hand, and the allocation of finances from public sources on the other hand. As a result, and due to the farmer's standard of living, Jewish agriculture may be considered as one of the most capital intensive in the world.

It would seem that during the period under review, the profitability of production and the price fluctuations in particular, were noteworthy. There is excess demand for credit from the Settlement and the Development Budgets; and the scope of investment carried out is directly related to budgetary possibilities.

TABLE IX–9

Estimates of Investment in Agriculture, 1955/56–1956/57

(At current prices—millions of IL.)

	1955/56[a]		*1956/57*		*Percentage increase*		
	Million IL.	*Percentages*	*Million IL.*	*Percentages*	*Value*	*Quantity*	*Price*
Investment in farms							
Fruit plantations	19	14	23	15	21.1	14.0	6.5
Installation of irrigation network	11	8	15	9	36.4	35.1	1.5
Other investments[b]	47	36	55	35	17.0	9.1	7.8
Total	77	58	93	59	20.8	13.9	6.6
Investment in public development projects							
Irrigation and drainage	41	31	46	29	12.2	5.7	6.6
Afforestation, land reclamation, natural grasslands	15	11	19	12	26.7	19.2	6.5
Total	56	42	65	41	16.1	9.3	6.6
Total investment	133	100	158	100	18.8	12.0	6.6

SOURCE: Central Bureau of Statistics, Ministry of Agriculture, Jewish National Fund, Ministry of Labour, "Mekorot" Water Co. Ltd., and the Accountant General of the Ministry of Finance.

[a] Revised figures.

[b] Including investment in farm buildings, equipment, livestock and fisheries.

(ii) *Investments in public development projects*

These investments rose by about 16 per cent, while the real increase was about 9 per cent. There was a rise of about 19 per cent in capital goods originating in agriculture—drainage, soil amelioration and conservation as well as afforestation. This was due to stepped up employment through the Ministry of Labour financing more employment relief, in particular land reclamation and afforestation. Investments by the Jewish National Fund and the Ministry of Agriculture in soil conservation and natural grass lands increased as well.

In 1956/57, as in 1955/56, more than half of the investment in basic utilities were made by "Mekorot". The remainder was carried out by other irrigation projects and drainage works, including work carried out by "TAHAL" (Israel National Water Planning Authority).

Most investments were intended for the large water projects—the National Water Project, the Jordan canal and regional water-works, as well as for the reclaimed Hule area.

(b) *The financing of investment*

According to available estimates, 59 per cent of finance required for investment in agriculture came from public funds in 1956/57, as compared with 70 per cent in 1955/56. The balance was supplied by bank, commercial and other credit, generally short-term, as well as by farmers out of their current savings and depreciation funds.

TABLE IX–10

Estimates of Investment in Agriculture, by Financing Sources, 1955/56–1956/57

	1955/56[a]		*1956/57*	
	Million IL.	*Percentages*	*Million IL.*	*Percentages*
Public institutions[b]	93	70	93	59
Other institutions[c]	40	30	65	41
Total	133	100	158	100

SOURCE: Settlement Department of the Jewish Agency and sources for Table IX–9.

[a] Revised figure.

[b] Government, Jewish Agency, Jewish National Fund and the Israel Bank of Agriculture.

[c] Including farmers' investment—from current savings, reserves for depreciation of own capital; short-term credit—commercial and bank credit.

The relative composition of financial resources changed during the period under review. Public budgets were not expanded, while a considerable part of the additional investment was not included within the framework of priority investment from the point of view of agricultural development policy. It did not, therefore, enjoy the easy credit terms granted under the Development Budget.

According to provisional estimates, agricultural investment made by the national institutions and the Government in the form of loans and direct investments amounted to IL. 93 million. About half of this sum was invested in the farms themselves, while basic utilities accounted for the remainder—irrigation, drainage, afforestation and land reclamation. The Government Development Budget provided loans for investment in plantations (mainly citrus groves) as well as in farm building and equipment. Smaller amounts were allocated for fisheries, livestock and other purposes. Investment by the Jewish Agency, principally long-term loans within the framework of its settlement budget—were intended for the establishment and consolidation of the new agricultural settlements. Large sums were invested in farm buildings and in equipment, in the installation of irrigation networks, as well as in orchards and livestock.

Available data are inadequate for an estimate of the composition of investment from farmers' other financial resources. However, the previously mentioned and other surveys relating to the position of agricultural farms by type show that the share provided by self-financing was larger in smallholders' settlements (both old and new) than in kibbutzim. It is feared that no real savings[1] were accumulated in kibbutzim last year, which might even be true for previous years. The reasons for these differences have not yet been fully analyzed; but it is likely that the individual small-holder is more hesitant to contract large financial liabilities than a co-operative body such as a kibbutz. In the absence of sufficient producer goods relative to available manpower, the individual smallholder is compelled to save and to invest more in producer goods which the kibbutz succeeds in buying on credit. Other causes include the absence of contact with banking and commercial circles as well as the problem of finding adequate guarantees. These all render the expansion of credit to the individual smallholder more difficult than to the kibbutz.

Farmers' investments out of their savings were to a great extent made through their own labour, in the increase in livestock, in the expansion of poultry farms and fruit plantations, as well as in the installations and equipment needed for these investments. In many cases, particularly in new holdings (where the scope of labour rendered possible by existing factors of production is relatively small) the shortage of alternative employment creates an urge for investment, particularly in labour-saving investments.

Investments in basic utilities were financed by the public institutions, partly as direct investment in afforestation, in soil amelioration and conservation which remain the property of the national institutions. Another part was provided through the share-capital of "Mekorot" and the Hule Development Authority: a third part through loans to regional water-works, to "Mekorot", etc.

[1] The impossibility of adequately analyzing the economic activities of the kibbutzim should be stressed. It is due to their special accounting system which interprets differently such accepted economic terms as "labour costs", "deficit", etc. and furthermore links the production with the consumption transactions.

5. Short-term Credit

(a) *The volume of bank credit*

Short-term credit to agriculture was expanded by IL. 16.7 million between the end of 1956 and the end of 1957—from IL. 95.3 million to IL. 112.0 million—representing an increase of 17 per cent.

Most of the additional credit came from banking institutions, which expanded credit to agriculture by IL. 14.7 million—from IL. 76.4 million to IL. 91.1 million—representing an increase of 19 per cent. Only one-tenth of the additional credit granted from bank funds was extended within the framework of the liquidity and volume regulations. The major part of the increase was rendered possible by exemptions from these regulations approved by the Bank of Israel.

Credit other than from bank funds rose by about IL. 2 million, or 11 per cent, most of it from Government deposits under the Development Budget.

The total expansion of short-term bank credit to agriculture authorized by the Bank of Israel through exemptions from the volume and liquidity regulations, and through rediscounts, amounted to IL. 12.9 million, and represented 77 per cent of the additional short-term bank credit to agriculture during the period under review.

Apart from these sources of short-term accommodation, agriculture profited from indirect bank credit granted to suppliers of raw materials for agriculture (Fertilizers and Chemicals Ltd., enterprises manufacturing pesticides, and "Mekorot"), to processing plants of agricultural raw materials (the food industry), and to agricultural marketing bodies, which provide credit to the agricultural producer during the production period. Farmers also receive commercial credit from various suppliers of raw materials for agriculture. Whereas interest rates on credit transferred by the institutions mentioned remain almost wholly within the legal limits, there have been quite a few cases where interest allowed by suppliers exceeded the legal maximum rate of 10 per cent annum. This was done in a disguised form charging higher purchase prices. Available statistical data, however, do not allow a correct estimate of the changes which have occurred in the volume of credit from these sources. Moreover, available data do not permit the analysis of volume changes in net additional credit, because they do not allow for advances extended by agriculture to other sectors, either upon the sale of agricultural produce or on account of the supply of raw materials.

(b) *The destination of bank credit*

Bank credit channelled to agriculture by the Bank of Israel and the Ministry of Agriculture represented 62.5 per cent of total bank credit to agriculture at the end of 1957 against 57.3 per cent at the end of 1956. It will be remembered that the expansion of bank credit within the framework of the volume of liquidity regulations was expanded at a smaller rate.

The greatest increase in channelled credit occurred in accommodation to

TABLE IX-11

Outstanding Balances of Credit to Agriculture, 1956–1957

(Millions of IL.)

End of period

	1956	*1957*	*Increase or decrease (–)*	
			Million IL.	*Percentages*
(1) Credit extended within the framework of the volume and liquidity regulations				
(1.1) by banks	28.9	36.9	8.0	27.7
(1.2) by credit co-operative societies	11.8	5.1	–6.7	–56.8
Total (1.1)+(1.2)	40.7	42.0	1.3	3.2
(2) Channelled credit				
(2.1) in accordance with the exemptions from the volume and liquidity regulations				
(2.1.1) by banks	26.6	32.4	5.8	21.8
(2.1.2) by credit co-operative societies	9.1	16.7	7.6	83.5
(2.2) Rediscounts by the Bank of Israel	8.9	8.4	–0.5	– 5.6
(2.3) From Government deposits in banking institutions—credit for for working capital	10.0	12.5	2.5	25.0
Total(2.1) to (2.3)	54.6	70.0	15.4	28.2
Total outstanding balances of credit to agriculture (1)+(2)	95.3	112.0	16.7	17.5
Of which: banking institutions only (1)+(2.1)	76.4	91.1	14.7	19.2

SOURCE: Bank of Israel.

citrus growers at the end of the year, in connection with the financing of imports of packing materials. A substantial increase also occurred in credit granted to groundnuts and field crops, following the financing of stocks and the rise in advances for field crops. Credit for cotton was only slightly expanded, as there was a reduction in the sown area. However, additional funds were required for the storage of the cotton harvest which was bigger than last year's. Expenditure on the storage of cotton involved "channelled" credit representing 90 per cent

of stock value and amounted to IL. 9 million. There was a minor decline in credit given to buyers' organizations; they were, however, granted substantial loans by the Government for the purchase of feed grains.

This year as well, additional bank credit was channelled to sectors contributing to an improvement in the balance of payments. However, as the role of the other sectors in farmers' income could not be ignored, credit continued to be granted for the production of grains, fodder and potatoes (both seed and storage). In view of the generally higher production costs in new settlements, advances given to them for field crops were somewhat higher than those extended to established farmers.

Credit is generally extended in the form of advances to growers who, with the help of additional credit given to them by suppliers of fertilizers, pesticides and water, are able to cover almost all their production costs for some crops as well as the storage expenses incurred thereby.

(c) *The liquidity position of agriculture*

It would appear, that the liquidity position of farmers improved somewhat as compared with 1955/56. This change is mainly the result of a better adjustment and an improvement in the ratio of debt repayments to financial resources.

Available reports and statistical data do not permit proof of this fact by an analysis of the financial position, in order to get a clear picture of the money flow, its sources and destination. Such an analysis would have permitted an evaluation of the factors which influenced the financial position as well as their relative importance. In very general terms, it may be said that the alleviated financial position was the result (not by order of importance) of the increase in short-term bank accommodation, and the additional long-term credit for the

TABLE IX–12

Outstanding Balances of Agricultural Credit exempted from the Volume and Liquidity Regulations (Channelled Credit), by destination, 1956–1957

Destination	*1956*		*1957*	
	Million IL.	*Percentages*	*Million IL.*	*Percentages*
Cotton fibres	7.9	14.5	8.1	11.6
Citrus groves	7.3	13.4	11.3	16.1
Buyers' organizations	7.4	13.6	7.1	10.2
Field crops	6.9	12.7	7.5	10.7
Groundnuts	3.9	7.1	5.2	7.4
Miscellaneous	15.5	28.4	25.2	36.0
Loans to new settlements [a]	5.6	10.3	5.6	8.0
Total	54.5	100.0	70.0	100.0

[a] For a period of 1–3 years.

funding of short-term advances as long-term loans. Other factors were the long-term credit from public sources, intended for investment and the increase in income, which exceeded farmers' expenditure on debt repayments, investment and on current production.

These estimates relating to the investment volume do point to a considerable increase in investment financed through private sources. Other data, however, relating to a large number of kibbutzim show that there was a substantial decline in their investments. It is therefore likely that the reduced pace of investment in kibbutzim—whose financial position was rather strained in 1955/56—was yet another factor contributing to the improved financial position.