CHAPTER VIII

AGRICULTURE

Agricultural output during the year 1954—55* was valued at IL. 370 millions at current prices, the real increase in production during the year being by 3.3 per cent.

Though the year was a poor one for farmers, mainly due to climatic conditions, much was done to increase agricultural potential for future years. The most important activities in this connection were a considerable extension of the irrigated area, the raising of the professional capacity of farmers and agricultural workers, the improvement of production methods and the continued development and consolidation of new settlements. The drought, credit restrictions and the reduced profitability of certain branches of agriculture gave rise to increased dependence between the farmers and the planning bodies, since the latter had at their disposal funds which were utilised for the implementation of development plans; such plans are intended to promote local production of most of the agricultural produce in demand.

Agricultural activities were therefore attuned to available financial resources and economically profitable branches. Thus, the output of industrial crops, mainly cotton and ground-nuts, expanded considerably; the irrigated area under wheat and other grains was increased; greater investments were made in fruit plantations, while the investment in livestock was reduced.

The smaller profitability of some branches, whether due to rising costs or the flooding of the market, brought about a greater degree of efficiency in production than in previous years. This found expression in a more intensive selection of livestock, increases in the scale of production and further mechanisation.

The year witnessed a deviation from the customary planning pattern which favours mixed farming. A beginning was made in the establishment of settlements, the production programme of which is determined by the conditions prevailing in their particular regions. Several types of settlement were established, each with varying allocations of total area, irrigated area and livestock and with differing proportions of various crops. This step was taken to ensure the most efficient exploitation of the factors of production.

1. AREA

Of the 4,100,000 dunams suitable for agriculture without requiring special treatment, some 3,565,000 dunams were under cultivation in 1954—55. In fact, the cultivated area is larger than would appear from this official figure, which is estimated on the basis of farmers' declarations. The physical** area is smaller and has been

* The agricultural year approximately covers the period from October of one year to September of the following year.

** As compared with the cultivated area, which is synonymous with the sown area. The same physical area may be cultivated several times during the same year.

estimated at approximately 3,500,000 dunams. There are, likewise, many areas of agricultural land planted with non-fruit-bearing trees, as well as urban regions always cultivated in the past but recently left fallow or used for building. Hence, there is to-day no possibility of expanding the physical area under cultivation to a significant extent, except by terracing, clearance, drainage, levelling and similar activities. The cultivated area will, however, increase as more land is irrigated, since irrigation implies intensive cultivation enabling a greater number of crops to be grown in each territorial unit.

The drought, which affected many regions during the winter of 1955, led to a reduction of the area under unirrigated summer crops. But the expansion of the irrigated area caused a slight increase of some 0.5 per cent in the total area under cultivation, in comparison with 1954. (See Table 67).

TABLE 67

THE CULTIVATED AREA, 1952—53 TO 1954—55
(in thousands of dunams)

	1952—53	1953—54	1954—55*	Changes in per cent	
				from 1952—53 *to* 1953—54	*from* 1953—54 *to* 1954—55
Unirrigated Area					
1. Field Crops					
a) Preparation of Land for Irrigation	100	100	—	—	—
b) Industrial Crops	93	122	108	+31.1	—11.5
c) Other Field Crops	2,272	2,183	2,181	— 3.9	— 0.1
Total — Field Crops	2,465	2,405	2,289	— 2.4	— 4.8
2. Vegetables, Potatoes and Melons	120	75	76	—38.1	+ 1.3
3. Fruit Plantations	240	239	236	— 0.4	— 1.0
4. Miscellaneous	75	91	77	+21.3	—15.4
Total — Unirrigated Area	2,900	2,810	2,678	— 3.1	— 4.7
Irrigated Area					
5. Field Crops					
a) Industrial Crops **	27	48	82	+77.8	+70.8
b) Other Field Crops	160	184	234	+15.0	+27.2
Total — Field Crops	187	232	316	+24.0	—36.2
6. Vegetables, Potatoes and Melons	186	205	184	+10.2	— 9.8
7. Fruit Plantations	193	236	304	+22.3	+28.8
8. Fishponds	35	35	36	—	+ 2.9
9. Miscellaneous	49	42	59	—14.3	+40.5
Total — Irrigated Area	650	750	900	+15.4	+20.0
Total Irrigated and Unirrigated Areas	3,550	3,560	3,578	+ 0.3	+ 0.5

* *The figures for 1954—55 are not final.*

** *Including ground-nuts.*

SOURCE: *Central Bureau of Statistics, Ministry of Agriculture and calculations of the Bank of Israel.*

(*a*) *The Unirrigated Area*

The unirrigated area is gradually decreasing, owing to the expansion of the irrigated area. There was, in the summer of 1955, an additional reduction due to the drought. The area under industrial crops decreased by 11.5 per cent when compared with 1954. There was a particularly sharp reduction in the area under tobacco and sunflowers.

The area sown with other unirrigated crops remained virtually unchanged, though there were many alterations in its use. Summer crops were considerably restricted, double the amount of land was left fallow and there was a marked increase in the area sown with green manure and with pulses. This is an important development which may improve the fertility of the land. The area under wheat was increased by 162,000 dunams (52 per cent) as a result of the policy of Government aid in this connection. This increase was largely made possible by reducing the area under barley by 157,000 dunams (20 per cent) after larger tracts of irrigated land had been planted with fodder grains in the summer.

There was a certain increase in the unirrigated area under vegetables, as the area under onions was expanded by 50 per cent. The unirrigated area planted with fruit remained virtually unchanged, although the area planted with unirrigated olive-trees was considerably reduced during the year owing to uprooting and the change-over to irrigated cultivation. On the other hand, the area of unirrigated vineyards and deciduous fruit orchards was increased.

(*b*) *The Irrigated Area*

The drought gave an added impetus to the expansion of the irrigated area and it was thus possible to make good the losses incurred in produce and income from unirrigated land. The difficulty of extending the irrigated area has increased yearly, since additional land is either further away from water sources or generally less convenient for cultivation. Nevertheless, the irrigated area under cultivation was expanded by some 150,000 dunams in 1954—55, i.e. by 20 per cent, as compared with an increase of 100,000 dunams, or 15 per cent, during 1953—54.

Irrigated industrial crops showed an increase of some 70 per cent. The area under cotton was expanded from 3,000 dunams in 1953—54 to 23,000 dunams in 1954—55. Cotton growing was on an experimental basis until 1953—54, but it then developed into an important commercial crop, after problems connected with its cultivation had been mastered and its prospects investigated. It may be assumed that cotton will be grown on a still larger scale in 1955—56. The areas under groundnuts and sugar-beet were likewise increased. The area under irrigated grains expanded by 27 per cent, fodder being grown on an additional 26,000 dunams and maize on a further 22,000 dunams.

The area under vegetables was reduced by some 10 per cent in 1954—55, as compared with 1953—54. This was mainly due to the losses incurred by some vegetable growers in 1953—54, resulting from plentiful supplies which glutted the market

and reduced prices. Tomatoes and cucumbers were especially affected and their areas were consequently reduced in 1954—55: the area under tomatoes by 15,000 dunams, and that under cucumbers by 3,000 dunams. The area under most other vegetables was also restricted. Many settlements have tended to introduce more variety into their vegetable gardens, in order to spread the risk involved over a greater number of crops.

A large expansion took place in the area of irrigated plantations, partly as a result of unirrigated plantations being brought under irrigation, but mainly due to the planting of new plantations. The latter included 38,000 dunams of citrus, 7,000 dunams of vineyards and 3,000 dunams of bananas, as well as olives, sub-tropical fruit and other crops. Most of the planting was done in agricultural settlements, especially in new settlements. The great demand for fruit as well as the high prices obtained abroad for citrus in recent years encouraged planting, and even changed previous plans. For example, plans for the planting of citrus groves were expanded, from an area of 215,000 dunams to that of 265,000 dunams. The new plantations are usually integrated with mixed farms, thus increasing the ability of the farmers to withstand the pressure of low prices, likely to obtain in the market as supplies increase.

2. LIVESTOCK

Cattle

Although plans for agricultural development envisage an annual increase of 8 to 10 per cent in the number of milch cows, no such expansion occurred during 1954—55 (see Table 68). Moreover, the reduction in the number of heifers may cause the number of milch cows to drop in 1955—56. There was, on the other hand, an increase of 10 per cent in the average yield of milk per cow.

The above changes have been primarily caused by the ratio of prices for milk and milk products to that of meat prices. Owing to an increase in production costs, the less efficient byres could not maintain themselves from the official price of milk. On the other hand, the high prices paid for meat, and the relaxing of controls on its marketing, caused cows with a low milk yield to be slaughtered for meat. Had it not been for the greater profit in the sale of cows for meat, it is possible that the low price of milk would have brought about increased efficiency in more positive ways, such as improvements in working methods, better care of cows, or a higher standard of safeguarding the milk and preventing its deterioration. Such developments would, of course, have constituted the most desirable solution. There have nevertheless been some positive results even from the existent situation, since the remaining herd was of a higher standard with potentialities for increased production in the future. Furthermore, a new branch of Israel agriculture has come into being — the raising of cattle for meat. During the past two years, this branch has expanded at the rate of 80 per cent per annum and the number of cattle being raised for meat is estimated at 15,000. Large herds raised specifically for this purpose are becoming more common (there are now many such herds numbering more than 200 head)

and this tends to foster efficiency and to reduce costs. The importance of raising cattle for meat lies in its being based on the exploitation of natural and enriched pasture, hitherto one of the country's neglected resources.

Poultry

This branch produced some 20 per cent of the total agricultural output in 1954—55, and represented the largest share. Its speedy development during recent years has been the result of a general shortage of animal proteins, causing high prices for the produce of poultry-farms, as well as the short production period, as compared with other kinds of meat production. As output increased, however, prices in the free market began to drop, despite the rise in production costs. The contraction of profit gradually led to the concentration of this branch in the hands of experts, to the increase of efficiency and to raising the rate of laying. Poultry-farming in Israel has now reached a standard where it can compete with other egg-exporting countries. The relatively high prices paid for poultry meat were an important factor in this development. The tendency was similar to that in the cattle branch, poultry farmers having the choice of slaughtering fowls whose egg output was low. The use of better techniques enabled the export expansion of this branch. If present export prospects materialise, it will be possible to extend the branch, even on the basis of imported feeding stuffs. The raising of poultry, especially for meat, also greatly developed during the year and, in certain cases, displaced the raising of poultry for eggs.

TABLE 68

LIVESTOCK, 1952—53 TO 1954—55

	1952—53	1953—54	1954—55	*Changes in per cent*	
				from 1952—53 *to* 1953—54	*from* 1953—54 *to* 1954—55
Cows	35,560	38,037	38,084	+ 7.0	+ 0.1
Heifers	8,118	8,539	8,182	+ 5.1	— 4.2
Female Calves	21,688	24,593	27,667	+13.4	+12.5
Bulls	440	449	344	+ 2.0	—23.4
Bull Calves for Meat	445	493	767 *	+10.7	+55.6
Cattle for Meat	1,566	2,909	5,305	+85.8	+82.3
Poultry (in thousands)					
Laying Hens	2,600	3,000	3,500	+16.7	+16.6
Chickens and Chicks	2,700	3,114	3,633	+15.6	+16.6
Others Fowls	62	133	266	+114.6	+100.0
Breeding Cocks	76	119	234	+56.6	+96.6
Sheep and Goats (in thousands)					
Pedigree Goats	40	50	60	+25.0	+20.0
Local Goats	75	85	96	+13.3	+13.3
Sheep	86	103	120	+19.8	+16.5

* *This number only includes bull calves raised under contract with the Government. The number of bull calves raised for meat is estimated at* 10,000.

SOURCE: *Central Bureau of Statistics and calculations of the Bank of Israel.*

Sheep and Goats

This branch developed during the year without any marked disturbances, and the quality of the flocks was improved. The expansion of flocks was, until 1953—54, based on imports. Although, in 1954—55, imports were very small, the natural increase of local flocks caused the branch to expand by 16 per cent. About one-third of the flocks owned by Jews is in the hands of new settlers; in some of the settlements sheep and goats were the basis of livestock farming. The Government is encouraging the replacement of locally-bred goats by sheep on Arab farms, since sheep are more suited to the pasture conditions.

3. WATER

The capacity of the country's piped water supply rose from 850 million cubic metres in 1953—54 to 980 million cubic metres in 1954—55, i.e. by 130 million cubic metres, or 15.3 per cent. The consumption of piped water during 1954—55 increased by 72 million cubic metres, i.e. by 9.5 per cent.

TABLE 69

CONSUMPTION OF PIPED WATER, BY USE, 1953—54 TO 1954—55

(in millions of cubic metres)

	1953—54	1954—55	*Increase in per cent*
Agricultural Use	638	700	9.7
Industrial and Domestic Use	120	130	8.4
Total	758	830	9.5

SOURCE: 1953—54: *Central Bureau of Statistics*;
1954—55: *Calculations of the Bank of Israel.*

The proportion of water consumed by agriculture on the one hand, and by industry and domestic use on the other, has not in fact changed during the two years; both in 1953—54 and 1954—55, agriculture accounted for 84 per cent of the total water consumed.

The *Mekorot* Company supplied some 40 per cent of the piped water supply in 1954—55; and most of the additional water in the future will be provided by this company. In 1954—55, the company utilised 85 per cent of the capacity of its installations. The same rate of utilisation was maintained by other water suppliers. Demand for water lags behind capacity for two main reasons:

(a) The demand for water does not remain stable throughout the year, but fluctuates according to the amount of rainfall, the kind of crops grown and the season. Only if suitable storage reservoirs are constructed, is it possible to equalise the rate at which water is pumped throughout the year.

(b) A certain period must elapse between the completion of an irrigation network and the actual utilisation of the water, since the farmer has been accustomed to adjust his crops in accordance with the amounts of water available, and only when greater quantities are put at his disposal, is he ready to grow additional crops.

TABLE 70

WATER CAPACITY AND UTILISATION, 1955

Source	*Estimated Annual Capacity in millions of cubic metres*	*Utilisation*	
		in millions of cubic metres	*in per cent of capacity*
Rivers and Streams	720	156	22
Underground Water and Springs, including Irrigation Drainage, Sewage and Floods	930	665	72
Stored Flood-Water, and Used Sewage Water after Purification	150	10	7
Total	1,800	831	46

SOURCE: *The Water Administration, Ministry of Agriculture.*

The average quantity of water used per irrigated dunam was 787 cubic metres in 1954—55. During the previous year, this average was 850 cubic metres per dunam, and during 1952—53 it was higher still. This considerable drop in the water used per dunam (despite the fact that 1954—55 was a year of drought) was due to the fact that the additional irrigation was in areas without natural water resources, or in regions where water is relatively expensive, such as the south (*Darom*) and the northern Negev.

In the opinion of agricultural experts, an excessive amount of water per dunam is generally used in Israel and it is possible to reduce this quantity without affecting output. Research is continuing and the information gathered is being transmitted to farmers. If the excessive demand is reduced, large quantities of water will be released for more efficient use.

4. MECHANISATION

Increased mechanisation in agriculture may be of decisive help in reducing production costs, thus cheapening agricultural produce and increasing its ability to compete in foreign markets. However, such a development involves increased dependence on imported spare parts and fuel for agricultural machinery, at a time when there is unexploited manpower.

Mechanisation is higher in *kibbutzim*, large farms and agricultural schools than in individual farms, for two main reasons:

(a) The structure of a large farming unit facilitates a more efficient use of machinery.

(b) Many *kibbutzim* do not employ hired labour.

Despite these factors, small-holders' villages have shown a consistent tendency to increase mechanisation by acquiring agricultural machinery for co-operative use, as well as by the communal cultivation of field crops and orchards.

TABLE 71

AGRICULTURAL MECHANISATION, 1954 AND 1955

	1954	1955	*Addition in* 1955
Tracked Tractors	1,545	1,663	118
Wheeled Tractors	1,870	2,005	135
Total	3,415	3,668	253
Combines	1,175	1,216	41
Balers	610	630	20

SOURCE: 1954: "*Israel Agriculture* 1953—54", *Joint Planning Centre for Agriculture and Colonisation and Economic Advisory Staff*, (*published* 1955);
1955: *The Ministry of Agriculture.*

Large quantities of agricultural equipment, especially power-driven machinery, were imported in 1950 and 1951. Since then, imports of machinery have been on a more restricted scale. A large part of the equipment imported after the establishment of the State served investment purposes, and it is thus difficult to assess the foreign exchange cost of current production caused by dependence on imports. Present import requirements exceed $2 millions per annum, excluding fuel. Local production of agricultural machinery is mainly concentrated on spare parts, accessories and towed machines; such production has, of late, been considerably expanded.

Between 50 and 60 per cent of tractors in use have been worked for more than 10,000 hours, which is the normal lifetime of a tractor, while almost 30 per cent have been operating for more than 20,000 hours. It is obvious that this obsolescence increases the running costs of the vehicles.

In the past, the mechanisation policy in agriculture was based on financial or other aid in the importing of the machinery concerned. In certain instances, the same procedure is being followed today. Although the use of machines in place of manpower was officially encouraged, it is now necessary to co-ordinate the supply of machinery with the use of manpower by directing the machines to regions where manpower is short. It will also be necessary to make more efficient use of the agricultural machinery available. This is primarily a problem of training and of using the machines strictly for the specific conditions and tasks for which they were intended. Progress was made in this direction in 1954—55, when the Institute of Agricultural Mechanisation was established in Haifa.

5. MANPOWER

During 1954—55, 744 farm-units were established in new settlements while a further 1,200 farm-units were added to existing settlements. The total number of farm-units in Israel approached 66,000 at the end of 1954—55.

According to the manpower survey, 104,700 people were employed in agriculture at the beginning of 1955—56, constituting 18 per cent of the total number of persons employed. There was, during 1954—55, a relatively large increase in the proportion of hired labour and private farmers (see Table 72).

A calculation based on labour output for various sectors of the economy shows that the number of work-days in agriculture increased in 1954—55 by about 860,000, a rise of 4.3 per cent as compared with 1953—54. The total number of work-days in agriculture during 1954—55 reached some 21,000,000.

The relatively largest increase in work-day input occurred on irrigated land, producing field crops or planted with orchards, as well as in beef, veal and mutton production and in fishing.

A comparison between the composition of the labour force and the input of work-days leads to the following conclusions:

(a) If the length of the work-day in the various types of agricultural settlement is taken into account, hired agricultural labourers worked an average of only three months during 1954—55 and found their remaining employment in other branches of the economy.

(b) The difference between the growth in the input of work (4.3 per cent) and the increase in real agricultural output (3.3 per cent) does not indicate a decline in the average output per work-day, since an important part of the work-day input constituted investments not yet reflected in the sum total of production. The damage caused by the drought reduced average output. It seems, however, that other factors which exert an influence in the opposite direction, such as increased mechanisation, the greater working efficiency of new agricultural settlers, improvements in cultivation methods, etc., brought about an increase in the average output per work-day.

TABLE 72

GAINFULLY EMPLOYED IN AGRICULTURE, 1954—55 TO 1955—56

	Beginning of 1954—55	*Beginning of* 1955—56	*Change in per cent*
Jews			
1. Co-operative Villages and Communal Villages	27,460	29,160	+ 6.2
2. *Kibbutzim*	20,750	21,510	+ 3.7
3. Smallholders' Villages	5,650	6,020	+ 6.6
Total	53,860	56,690	+ 5.3
4. All Others — i.e. Private Farmers and Hired Labourers	22,740	26,110	+14.8
Total — Jews	76,600	82,800	+ 8.1
Non-Jews			
5. Farm and Land Owners	15,800	15,800	—
6. Hired Labourers	5,600	6,100	+ 9.0
Total — Non-Jews	21,400	21,900	+ 2.3
Total — All Persons Employed in Agriculture	98,000 *	104,700	+ 6.8

* *Estimate based on data from the manpower survey.*

SOURCE: *Central Bureau of Statistics, Audit Union for Agricultural Workers' Co-operatives, the Colonisation Department of the Jewish Agency for Palestine and calculations of the Bank of Israel.*

6. FISHING

Prospects of sea fishing improved considerably during 1954—55 as a result of the addition of ten modern boats to the trawler fleet; the total number of boats in this fleet reached 26 at the end of the year. The potential trawler fishing capacity was thus increased by 750 tons per annum, i.e. by 60 per cent. The number of motor-boats engaging in coastal and pelagic fishing likewise increased to 44, or by 20 per cent. Some progress was also made in the construction of a modern anchorage in the Kishon Harbour, the completion of which will considerably increase the efficiency of the fishing fleet.

Despite this expansion in equipment, several factors * combined together to bring about poor catches for the trawlers in 1954—55. Furthermore, production costs increased, while the price of fish fell by some 13.5 per cent. Thus, 1954—55 did not, in the end, prove a good year for trawler fishing.

The price of fish caught by coastal and pelagic fishermen rose by 10 per cent. The catch however was smaller, largely owing to the drought.

Lake fishing declined by some 10 per cent in 1954—55. This was caused, to a certain extent, by lower prices, though the decisive factors affecting it were undoubtedly climatic.

The area of artificial fish ponds was expanded by some 1,000 dunams and their active area by very much more. The average catch per dunam rose by about 20 per cent during the year, mainly due to more regular feeding. Output thus rose by 23 per cent as against an increase of only 11.2 per cent in the active area.

TABLE 73

ISRAEL FISHING, 1953—54 TO 1954—55

Source	1953—54		1954—55		*Change in per cent*	
	Output in tons	*Value in IL. thousands*	*Output in tons*	*Value in IL. thousands*	*In Output*	*In Value*
Sea and Lakes	3,349	2,769	3,561	2,723	6.3	— 1.7
Fish Ponds	5,406	6,803	7,116	8,966	31.6	+31.8
Total	8,755	9,572	10,677	11,689	21.9	+22.1

SOURCE: "*Fishing in* 1954—55", *the Fisheries Department, Ministry of Agriculture.*

7. PRICES

Prices of agricultural produce were lower in the winter of 1954—55 than in the preceding winter. During the summer months, however, prices rose, owing to the following factors:

(a) Reduced supplies caused by a decrease in the cultivated area as a result of the low prices obtaining in the summer of 1953—54.

(b) Reduced supplies, especially of deciduous fruit and grapes, caused by the drought.

* The most important factors were the drought, the security situation and the blocking of certain fishing areas in the Mediterranean.

There was also a rise in egg prices, as official permission was granted to sell a part of the output in the free market. The price of meat likewise rose, after the free marketing of meat was authorised. Other increases took place in the prices of fodder grains, mainly owing to the drought, and in citrus prices abroad, which rose by 8 per cent.

On the other hand, the prices of potatoes and of certain kinds of fish fell. The price level of agricultural produce in 1954—55 exceeded that of 1953—54 by an average of 8.2 per cent.

An estimate of price fluctuations concerning several input components shows that the price of fodder grains rose by an average of 20 per cent as did the prices of most other input items, such as water, fertilizer, transport, fuel, spare parts, packing materials etc. There was an average increase of 13.1 per cent in the prices of agricultural input components in 1954—55.

8. YIELD

The drought caused a decline in the yields of many crops, particularly of unirrigated crops. Wheat production decreased from 110 kg per dunam in 1953—54 to 76 kg per dunam in 1954—55, while the yield of barley fell from 115 kg per dunam to 65 kg per dunam in the same year. The yields of vegetables and fruit also declined, as the hot weather caused premature ripening. There was, likewise, a drop in the average yield of table grapes.

Increased yields were, on the other hand, noted in certain irrigated crops, such as green fodder and silage, of 3.5 tons per dunam in 1953—54 as compared with 3.7 tons per dunam in 1954—55. Altogether, as already stated, real output in agriculture increased by 3.3 per cent (see Table 74).

TABLE 74

AGRICULTURAL OUTPUT, 1953—54 TO 1954—55
(in IL. millions, at 1953—54 prices)

	1953—54	1954—55	*Changes in per cent*
Grains and Pulses	35,215	26,560	—25
Fodder	22,838	22,640	— 1
Industrial Crops	14,694	20,958	+43
Vegetables and Miscellaneous	46,933	46,810	—
Total — Field Crops	119,680	116,968	— 2
Citrus Fruit	67,319	55,770	—17
Other Fruit	26,295	22,665	—14
Milk	41,200	44,890	+ 9
Eggs	26,729	32,620	+22
Meat	23,982	42,265	+76
Miscellaneous	26,558	27,670	+ 4
Grand Total	331,763	342,848	+ 3.3

SOURCE: *The Ministry of Agriculture.*

9. INCOME

If the 8.2 per cent rise in the prices of agricultural produce is taken into account, the total value of agricultural output in 1954—55, at current prices, totalled IL. 370 millions. The input, at current prices, totalled some IL. 150 millions during the year. The national income from agriculture therefore reached the approximate amount of IL. 220 millions and thus exceeded that of 1953—54 by 8.4 per cent. If, however, the rise in the general consumer price level is likewise taken into consideration, it appears that real incomes in agriculture rose by only 2.4 per cent.

10. CREDIT

During 1955, short term credit to agriculture was expanded from IL. 60.2 millions to IL. 79 millions, representing an increase of nearly IL. 19 millions or 30 per cent (see Table 75). During the same period, the percentage of agricultural credit in total credit granted from the resources of banks increased from 22 to 25 per cent (see also Chapter XV).

TABLE 75

BALANCES OF CREDIT GRANTED TO AGRICULTURE, 1954 AND 1955

(in IL. millions)

	at the end of 1954	*at the end of* 1955
From the own Resources of Banking Institutions	56.2	68.6
Re-Discounting with the Bank of Israel	—	3.4
Credits for Working Capital from Government Deposits in Banking Institutions	4.0 *	7.0
Total Short Term Credit	60.2	79.0

* *Estimate.*

SOURCE: *Bank of Israel.*

The direction of credit to agriculture has, in the main, been carried out as follows:

(a) The banking institutions were obligated to allocate at least 22 per cent of their total credit balances to agriculture.

(b) The Bank of Israel granted the banks exemption from liquidity regulations as regards certain credits which they allocated to agriculture. Credits granted to agriculture by the banks outside the liquidity framework totalled IL. 16 millions at the end of 1954. By the end of 1955, the balance of such credits had increased to more than IL. 23 millions.

(c) The Bank of Israel discounted bills for the agricultural sector; the balance of these bills amounted to IL. 3.4 millions * at the end of 1955.

* A part of the re-discounts granted to industry indirectly served agriculture, being given to concerns supplying raw materials to farmers who were, in turn, able to sell their produce on credit. Other credits were given to concerns processing agricultural produce and were transfererd to farmers in the form of advance payments.

Credit was not expanded to the same extent in all branches of agriculture. The main expansion took place in those branches which the Ministry of Agriculture desired to encourage, since they were of high priority to the national economy; this was effected by extending additional credit for development purposes. Such branches include cotton, ground-nuts for export, potatoes for storage and seed, field crops, vegetables when grown by new settlers, etc. Advances to growers of industrial crops were granted in proportion to the areas cultivated. As a result, the share of credits granted by banking institutions for field crops and vegetables in total agricultural credit rose from 81.1 per cent at the end of 1954 to 86.6 per cent at the end of 1955.

New settlements received special encouragement through credits directed to them by the Bank of Israel, this policy being based on the fact that their own resources were more limited than those of older established villages. The share of new settlements in the credit granted for working capital on the recommendation of the Ministry of Agriculture rose from 48 per cent in the middle of 1954 to 58 per cent at the end of 1955.

TABLE 76

COMPOSITION OF CREDITS GRANTED TO AGRICULTURE FROM THE BANKS' RESOURCES, 1954 AND 1955

(in IL millions)

Branch	*End of* 1954	*End of* 1955	*Change in per cent*
Citrus and Orchards	9.5	7.9	—26.3
Livestock	1.1	1.3	+18.2
Field Crops, Vegetables, etc.	45.6	59.4	+30.3
Total	56.2	68.6	+22.1

SOURCE: *Bank of Israel.*

The total amount of short term credit granted to agriculture increased by some 30 per cent, while production at current prices rose by only 12 per cent. Credit for working capital thus expanded during 1955 to a greater extent than output. It should, however, be recalled that the small returns due to the drought made it very difficult to redeem loans while, on the other hand, additional credit was required for sowing and cultivation for the coming year. In any case, this comparison does not show the entire relative increase in credit granted for working capital. The composition of agricultural output also underwent a change and the greater proportion of credits granted for shorter periods (of about six months) enabled the financing of more extensive production without a parallel increase in total credit balances.

Despite the fact that, in 1955, bank credit expanded to a greater extent than output at current prices, the shortage of working capital for agriculture continued to make itself felt during the year. This was mainly due, on the one hand, to insufficient co-ordination between the conditions under which agricultural credit was granted and its dates of redemption and, on the other, to the purposes for which it was used. Agriculture in general, and *kibbutzim* in particular, possess a very limited

amount of capital. There does, nevertheless, exist a strong tendency towards investment which is encouraged by loans to agriculture from the development budget, amounting to between 70 and 85 per cent of the total cost of the project. Since the settlements generally have no capital of their own to finance the rest of the project, they divert short term credits to this purpose. Research into agricultural credit granted to *kibbutzim* * has shown that, in 1953—54, more than 40 per cent of all short term credits were used for financing investment; and it seems that this process also continued to a certain extent in 1955. As a result, the burden of debt carried by the *kibbutz* movement grew, and payments on account of principal and interest far exceed its actual capacity. Insofar as settlements are unable to obtain loans at the legal rate of interest, they avail themselves of the free money market; and in such cases, the high interest charged increases their debt still further.

Another possible reason for the shortage of working capital in agriculture during 1954—55 is the lengthening of production processes, which necessitates the financing of stocks of produce formerly imported from abroad.

More extensive local cultivation of intermediary crops compels the settlements to finance these crops both during the process of production and during storage prior to marketing or use.

11. INVESTMENT

Investment in agriculture and irrigation** (at current prices) increased by 12 per cent during 1955 as compared with the preceding year. (See Table 77). However, the percentage of agricultural investment in total investment fell from 31.3 per cent in 1953 to 27.3 per cent in 1954 and to 23.4 per cent in 1955. This was despite the fact that present development plans require the additional investment of hundreds of millions of pounds in new settlements and the expansion of production in existing villages. The rate of investment in agriculture is mainly affected by two factors: the expansion of the irrigated area and the establishment of new settlements.

TABLE 77

INVESTMENT IN AGRICULTURE, 1953 TO 1955

(in IL. millions, at current prices)

	1953	1954	1955
Irrigation	51.8	62.2 *	58.3
Agricultural Settlement	36.8	41.8	56.5
Fishing and Fish-Breeding	0.3	1.8	2.4
Afforestation and Land Reclamation	7.4	7.5	10.2
Total	96.3	113.3	127.4

* *Revised estimate.*

SOURCE: 1953 *and* 1954: "*Israel Agriculture* 1953—54";
1955: *Estimates of the Bank of Israel.*

* See the investigation by Dr. I. Loewe, a summary of which was published in the Bank of Israel Bulletin No. 2 of December 1955.

** Gross investment, without deduction of depreciation.

The composition of investment in agriculture changed during 1955; there was reduced investment in irrigation projects and increased investment in agricultural settlement, fishing, afforestation and land reclamation.

In addition to investment in agricultural machinery and other equipment, investment was also effected in the construction of barns and earth-works. No significant change occurred in investment of this kind during 1954 and 1955.

Imports of tractors and earth-moving equipment were expanded during 1955, reaching $4.5 millions as compared with $2.9 millions in 1954 and $1.7 millions in 1953. Imports of machinery and other equipment for irrigation fell considerably in 1955, mainly due to smaller imports of drilling machinery. There was a considerable rise in the import of equipment for citrus-growing and a sizable reduction in imports of livestock. Altogether, imports of machinery and equipment for agriculture during 1955 totalled $8.2 millions.

(*a*) *The Financing of Investment in Agriculture*

Two main sources of agricultural investment accounted for 70 per cent of this investment during the years 1953, 1954 and 1955. These were the Development Budget of the Government and the Budget of the Colonisation Department of the Jewish Agency (see Table 78). While the Development Budget has, in recent years, financed investment in most irrigation projects as well as investment designed to increase production in older settlements, the Colonisation Department has, in the main, financed the establishment of new villages and their development until they reach the stage of economic independence. There have also been sizable private investments in agriculture.

Loans from the Development Budget are granted with the participation of the farms concerned from their own resources, to the extent of 15 to 30 per cent of the total investment required. Increases in the livestock owned by the villages, mainly financed from their own resources, must likewise be regarded as an investment.

TABLE 78

SOURCES FOR FINANCING AGRICULTURAL INVESTMENT, 1955

	Irrigation Projects		*Agricultural Settlements*		*Fishing, Afforestation and Land Reclamation*		*Total Investment in Agriculture*	
	IL.millions	*per cent*	*IL.millions*	*per cent*	*IL.millions*	*per cent*	*IL.millions*	*per cent*
Government Development Budget	28.8	49.4	8.6	15.2	5.8	46.0	43.2	33.9
Colonisation Department of the Jewish Agency	18.3	31.4	25.2	44.6	5.2	41.3	48.7	38.2
Farmers' Own Resources	11.2	19.2	22.7	40.2	1.6	12.7	35.5	27.9
Total	58.3	100.0	56.5	100.0	12.6	100.0	127.4	100.0

SOURCE: *Calculations of the Bank of Israel.*

Considerable amounts of private money have been invested in plantations and in the purchase of machinery and equipment, and it must be assumed that some short term and medium term loans have been invested by agricultural villages in these capital assets.

(*b*) *The Development of Water and Irrigation Projects*

Investment in water projects and the preparation of land for irrigation fell by 6.3 per cent in 1955, totalling IL. 58.3 millions as against IL. 62.2 millions in 1954 and IL. 51.8 millions in 1953, at current prices. This decline mainly affected regional water schemes after the completion of the first Yarkon—Negev pipeline in the summer of 1955, and reduced investment in local water projects operated by the *Mekorot* Company. The year 1955 was marked by the construction of installations and a distribution network for bringing Yarkon water to the Lachish area and to settlements in the south of the country. The implementation of the Kishon project continued, and the supply of water from this project to the Western and Central Esdraelon Valley will begin in 1956. Other regional water schemes have been implemented in Upper Galilee, the Beisan Valley, on the Carmel, in Regavim and in settlements in the Jerusalem Corridor.

A very considerable expansion of the irrigated area took place in 1955; 130,000 dunams were added during the year, as compared with only 90,000 dunams in 1954. The physical area under irrigation reached 800,000 dunams at the end of 1955. On the other hand, investment in local water projects was seriously reduced. Total investment in local projects and the preparation of areas for irrigation rose, at current prices, from IL. 22.3 millions in 1954 to IL. 25.4 millions in 1955 (see Table 79).

Investment in the national water project mainly consisted of the continued construction of the Jordan—Lake Tiberias Canal, the digging of a water tunnel near Eilabun, the erection of dams for water storage, the supply of water, the generation of electric power, drainage operations and the implementation of planning and research.

TABLE 79

INVESTMENT IN IRRIGATION PROJECTS, 1953 TO 1955

(in IL. millions, at current prices)

	1953	1954	1955
Irrigation Installations	17.6	22.3	18.6
Local Projects			6.8
Regional Projects *(Mekorot)*	30.0	35.9	27.4
National Project *(Tahal)*	4.2	4.1	5.5
Total	51.8	62.2	58.3

SOURCE: 1953 *and* 1954: "*Israel Agriculture* 1953—54";
1955: *Calculations of the Bank of Israel.*

More than 80 per cent of the total investment in irrigation during 1955 was financed from the Government Development Budget and from the budget of the Colonisation Department of the Jewish Agency (see Table 78). The Development Budget provided some IL. 30.3 millions for this purpose in the form of investments and loans.

(c) *Investment in Agricultural Villages*

Investment for the establishment of new agricultural villages and for the expansion of production in existing villages increased considerably in 1955, mainly due to greater investment in plantations and equipment. It totalled IL. 56.5 millions as against IL. 41.8 millions in 1954 and IL. 36.8 millions in 1953, at current prices. It is, however, not accurate to compare the investment figures for 1955 with those for the previous two years, as they were calculated differently.

About half the investment in agricultural villages during 1955 served to establish 20 new settlements (of which 18 were in the Lachish region) as well as to consolidate the economy of recently settled villages. Most of the investment in old-established villages was in citrus plantations, vineyards, the purchase of machinery and other equipment and additional livestock. As shown in Table 80, only a small proportion was invested in the construction of farm buildings.

TABLE 80

INVESTMENT IN AGRICULTURAL VILLAGES, 1955

	in IL. millions	*in per cent*
Plantations	17.5	31.0
Equipment	14.0	24.8
Livestock	13.5	23.9
Buildings	10.6	18.8
Miscellaneous	0.9	1.6
Total	56.5	100.0

SOURCE: *Calculations of the Bank of Israel.*

(d) *The Financing of Investment in Agriculture*

Table 78 shows the financial sources of investment in agricultural villages during 1955. Investment in sea-fishing and in fishponds reached IL. 2.4 millions in 1955, and ten additional fishing-boats, valued at IL. 1.4 millions, came into use. The area of fishponds was expanded by 3,000 dunams * at a cost of IL. 1 million.

The investment in fishing-boats was financed from the Development Budget, by a direct grant of 40 per cent as well as by loans totalling 54 per cent of the value of each boat. The fishermen provided from their own resources the remaining 6 per cent of the money required. The investment in fishponds was mainly financed from the resources of the farmers themselves.

The total investment in afforestation and land reclamation during 1955 was estimated at IL. 10.2 millions as compared with IL. 7.5 millions in 1954 and IL. 7.4 millions in 1953. Of the investments included in this paragraph during 1955 and financed entirely from the budgets of public bodies, about one-third was in land reclamation, one-third in afforestation and the development of natural pasture and one-third in drainage and various other works in new settlements.

* Including 2,000 dunams which were not active.