

CHAPTER X

AGRICULTURE

1. MAIN DEVELOPMENTS

Real agricultural product and output expanded rapidly in 1970/71.¹ Agricultural prices went up appreciably more than the general price level. On the face of it, such a rise was extraordinary, the like of which has not been seen since the late 1950s, when the sector's growth rate began to decline. However, the steepest price rise was in citrus exports, where it was caused by the contraction of competing supplies due to frost damage; in noncitrus output the increase was a more mild 8.3 percent. The changes in domestic market prices reveal a divergent pattern. The rise in the price of meat, connected with the rise in world meat prices, was particularly steep. Altogether, prices of locally marketed agricultural consumer goods moved up by some 11 percent, compared with the 13.4 percent increase in the consumer price index.

The stronger expansion of real agricultural product and output in 1970/71 likewise cannot be regarded as a change in the general growth trend (see Figure X-1). In recent years the annual rate of increase has held steady at between 5 and 7 percent, but individual years often deviate considerably from the period average, and this is also true of the late 1950s and early 1960s, when the growth rate sagged. This is because agriculture is subject to annual fluctuations, connected chiefly with weather conditions.

In 1970/71 the combined influence of natural factors and planned increases in the supply of several branches explains the vigorous expansion of agricultural production.

Natural factors affected mainly citrus and other fruit, where per dunam yields rose appreciably, as well as field crops (cereals and pulses), where the increase in output is explained primarily by the heavy rainfall of 1970/71 following three consecutive years of drought.

The results of planning were evident in poultry, pond fish, vegetables, flowers, and some industrial crops. As regards vegetables and flowers, the expansion of 1970/71

1. This chapter refers to agricultural years, from October 1 to September 30. The figures in this chapter differ from those elsewhere in the Report, in particular Chapter VI ("Prices") and Chapter IV ("Private Consumption and Saving"). This is due mainly to the divergence between agricultural and calendar year data. In addition, different price indexes were used: the survey here is mostly in terms of producer prices, whereas that in the other two chapters is in consumer price terms.

continued the general trend of recent years. The main object was to step up supplies for export and local processing; the supply of fresh vegetables for direct domestic consumption in fact contracted somewhat in 1970/71. In poultry most of the expansion was in the supply of meat, which in 1970/71 grew to an unprecedented extent, chiefly in response to the rise in beef prices. The latter development was due to the levying of an import surcharge at the end of 1969/70, as well as to the failure of local beef producers to enlarge supplies to any significant extent.

Inputs from other sectors went up by 9.6 percent in the year reviewed, about the same as in 1969/70 (9.4 percent). However, whereas in 1969/70 real output increased by only 5.6 percent (compared with a 9.4 percent rise in input), in 1970/71 input and output moved up at the same rate; that is, the ratio of input to output declined in

Table X-1
CURRENT ACCOUNT OF AGRICULTURE, 1969/70 AND 1970/71
(IL million)

	Value at current prices		Percent increase or decrease (-) in 1970/71 ^b		
	1969/70 ^a	1970/71	Value	Quantity	Price
1. Total output at producer prices	2,047.9	2,567.7	25.4	9.6	14.4
2. Less: Agricultural intermediates	165.0	184.4	11.8	6.7	4.7
3. Agricultural output at producer prices	1,882.9	2,383.3	26.6	9.9	15.2
4. Less: Subsidies on output ^c	103.6	113.5	9.6	10.7	-1.0
5. Agricultural output at market prices	1,779.3	2,269.8	27.6	9.9	16.1
6. Less: Purchased input	790.2	983.2	24.4	9.6	13.5
7. Gross agricultural product at market prices	989.1	1,286.6	30.1	10.1	18.2
8. Less: Depreciation	151.5	182.9	20.7	9.6	10.1
9. Net agricultural product at market prices	837.6	1,103.7	31.8	10.2	19.6
10. Plus: Subsidies on output ^c	103.6	113.5	9.6	10.7	-1.0
11. Net agricultural product at producer prices	941.2	1,217.2	29.3	10.2	17.3
12. Plus: Drought compensation, etc.	23.7	17.8	24.9	-	-
13. Total income from agriculture	964.9	1,235.0	28.0	-	-
14. Less: Wages of hired labor	240.0	290.7	21.1	-	-
15. Less: Interest and rent	70.0	90.0	28.6	-	-
16. Income of farm owners from agriculture	654.9	854.3	30.4	-	-

NOTE: Shortly before the Hebrew edition of the *Annual Report* went to press the Central Bureau of Statistics released updated figures, which differ but slightly from those appearing here. Since the differences do not affect either the analysis or the conclusions, the data in this chapter were not revised.

^a Revised figures.

^b Rates of change have been calculated from unrounded figures.

^c The change in quantity reflects the real change in subsidized output; the change in price reflects the change in the average subsidy rate per unit of subsidized output.

SOURCE: Central Bureau of Statistics.

1970/71. The explanation lies in the end-of-1969/70 rise in feed prices: as a result of this, purchases of this input grew less in 1970/71 than in the previous year, even though livestock output expanded faster (9 percent as against 7 percent in 1969/70). This was made possible by the substitution of other roughage² for purchased feed in the cattle branch. The lag in purchased inputs relative to output was also due to the more favorable weather conditions of 1970/71: in 1969/70, a drought year, water consumption went up 8 percent, while in the year reviewed, with plenty of rain, consumption was down 4 percent. The difference between the two years as regards the input-output ratio is reflected in the growth rate of net agricultural product at constant producer prices: this amounted to only 3.8 percent in 1969/70, or less than the rise in real output (5.6 percent), compared with 10.2 percent (slightly faster than output growth) in 1970/71.

The labor input — as measured in man-hours according to the manpower surveys (including workers from the administered areas) — continued downward in 1970/71. The input of hired labor rose, while that of nonhired labor declined; the net result was a 3.6 percent drop in the total labor input, which somewhat exceeded the average annual decrease of about 2.5 percent since the early sixties.

The agricultural wage bill shot up 21.1 percent in 1970/71, as against 12.1 percent the year before. Two separate factors were at work here: first, a rise in wage rates and an increase in the hired labor input; and second, a change in the composition of the agricultural labor force. In 1970/71 there was an increase in labor from the administered areas in both absolute and relative terms and a decline in the share of Israeli labor. Owing to the wage differential between Israeli workers and those from the administered areas, the percentage rise in the average wage per man-hour was less in agriculture than in other sectors.

The strong expansion of the net agricultural product at factor cost was accompanied by a somewhat slower increase in wage outlay, interest, and rent; as a result, farm proprietors' income from agriculture grew by 30 percent in 1970/71 (see Table X-I).

A rough calculation indicates that some 70 percent of the incremental income was earned by citrus growers. However, all of the 1969/70 decline in income had been concentrated in this branch.

Agricultural subsidies went up by over 15 percent in 1970/71 (see Table X-9), since the fall in compensation payments for drought, etc. was outweighed by the increase in factor and direct output subsidies. These increases occurred despite the steep rise in farm owners' income and the Government's declared intention of cutting subsidies (see Table X-9).

The increase in direct output subsidies mainly reflected the much heavier subsidization of poultry-meat in 1970/71. The supply of this item grew so rapidly in the first quarter of 1970/71 that, despite the rise in other meat prices, consumer prices for poultry fell to a level that required substantial subsidy payments in order to maintain the

2. The supply of agricultural waste products — straw, sugar beet tops, citrus peel, etc. — increased in 1970/71. These replaced some of the purchased feed in cattle farming after its prices rose at the end of 1969/70. There was, in fact, a double substitution; between purchased feed and green fodder, and between both of these and other types of roughage (farm waste).

guaranteed minimum price to farmers. The subsidy per unit of subsidized output of most other agricultural products decreased (see Table X-9). As to factor subsidies, all of the increase was in purchased feed, whose foreign prices rose during 1970/71. The Government covered all of the extra cost in 1970/71 by renewing the subsidy on this input, since it had undertaken to keep its price steady after the rise of August 1970.

Real gross investment in agriculture (excluding afforestation) grew much less in 1970/71 than in the previous year (see Table X-10). But this must not be regarded as a change in the upward trend begun in 1966/67,³ since the 1970/71 slowdown was apparently due to short-run adjustments only. The 1969/70 acceleration also seems to have been the result of a combination of random factors, so that the 1970/71 rate accords with the long-run trend. Despite the small increase, there was some net investment in 1970/71, and the sector's real gross capital stock expanded more rapidly than in 1969/70 (3.5 vs. 2.7 percent). Thus the rising trend begun in 1970 carried over through 1971.³

2. OUTPUT

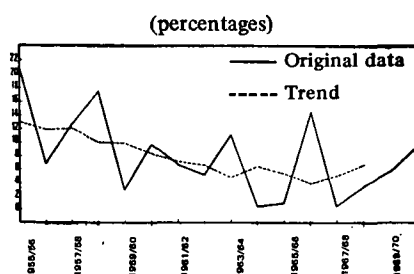
(a) *Value of output*

Total agricultural output (including the value of intermediates) grew by a rapid 9.6 percent at constant prices, compared with 5.6 percent in 1969/70. In crop farming the gain was 10.6 percent (as against 5.6 percent in 1969/70), while output of livestock and livestock products was up 9 percent (7 percent in 1969/70).

These notable advances did not constitute a change in the trend of recent years (a rise of 5 to 7 percent per annum — see Figure X-1).⁴ A number of factors combined to contribute to the rapid 1970/71 growth: citrus and other fruit and field crops benefited from favorable weather and gave higher per dunam yields, while the rise in meat prices (due to the increase in the price of imported frozen meat at the end of 1969/70) caused an unprecedented expansion of the supply of poultry-meat (which served as a substitute for imported frozen meat). In addition, the output of vegetables continued upward.

Foreign prices of tradable farm products (such as meat, butter, cereals, and cotton) climbed rapidly in the past two years, but it is too early to tell whether this trend (first noted in 1970/71 in the meat market and at the present stage reflected by an increased production of poultry-meat as an import substitute) will persist and succeed in pushing

Figure X-1
REAL CHANGE IN TOTAL
AGRICULTURAL OUTPUT,
1955/56 to 1970/71



NOTE: The trend has been calculated from moving five-year averages.

3. See Bank of Israel, *Annual Report 1970*, pp. 197-99, 219-21.

4. Ibid, pp. 200-201.

up the agricultural output growth rate. This is because the expansion of livestock output depends on the ratio at which the prices of livestock products and inputs (cereals and oilcake) will eventually settle. If the price ratio rises, livestock output may be stepped up, since it will become profitable to substitute domestic for imported meat and dairy products. In the crop branches output will not expand rapidly even if foreign prices of tradables advance. The growth rate here depends on technological changes, in particular on the introduction of water-saving techniques (the scarcity of water is the chief constraint), and this is a long-term matter.

After holding steady in 1969/70, producer prices also moved up rapidly in 1970/71, by 14.4 percent, or some 2 percentage points more than the increase in the general price level. This is a big change from what happened during the preceding decade (when the relative prices of agricultural output declined), but it should be noted that the 1970/71 rise was concentrated chiefly in citrus exports, meat, and fish, while other products went up only 6.5 percent.⁵ The higher farm prices in the year reviewed can apparently be attributed to the combined effect of fortuitous factors (the frost in Europe, which affected competing citrus supplies) and exogenous factors, such as the increase in the effective exchange rate for imported frozen meat and citrus exports and the rise in the foreign price of frozen meat.

(b) *Destination of output*

The value of marketed output was up 28 percent in 1970/71 (see Table X-2), reflecting a rise of 10.5 percent in quantity and of 15.4 percent in prices. The value of output retained on the farms grew much more slowly, by only 4.5 percent. The downward trend in the weight of the latter began in the 1960s (and is found in both quantitative and value terms); the weight of marketed output in total output (at constant prices) rose from 84.5 percent in 1969/70 to 85.2 percent. All output destinations shared in the rapid expansion of farm marketings (see Table X-2), which was due chiefly to higher export prices and the appreciable quantitative increase in sales for direct domestic consumption and to industry.

The supply of local farm produce for direct domestic consumption expanded in 1970/71 as a result of the substitution of poultry-meat for imported frozen meat after the price of imported meat was raised twice — once through the introduction of an import surcharge at the end of 1969/70, and again in December 1970, when the world price of meat rose.

The imported and locally produced supply for direct domestic consumption rose by 44.5 percent. This is consistent with the growth rate of the de facto population and real disposable income per capita. Consumer prices of imported and domestic agricultural products climbed 13.5 percent, about the same as the general price level. The total supply of domestic and imported agricultural products thus adjusted to the growth of demand in 1970/71, as reflected by the fact that relative prices remained steady. However, when we

5. Prices of agricultural output excluding citrus exports rose by 8.3 percent, and here too relative prices declined.

Table X-2
TOTAL AGRICULTURAL OUTPUT, BY DESTINATION,
1969/70 AND 1970/71^a
(IL million)

	Value at current prices		Percent increase or decrease (-) in 1970/71 ^c		
	1969/70 ^b	1970/71	Value	Quantity	Price
Output marketed					
Direct domestic consumption ^d	771.3	926.6	20.1	9.9	9.3
Industry	489.5	621.3	26.9	16.0	9.5
Direct export	470.1	660.2	40.4	6.0	32.5
Total	1,730.9	2,208.1	27.6	10.5	15.4
Output retained on farms					
Own consumption	87.8	101.1	15.1	4.3	10.3
Capital goods	64.2	74.1	15.4	1.3	13.9
Agricultural raw materials	165.0	184.4	11.8	6.7	4.7
Total	317.0	359.6	13.4	5.0	8.0
Grand total	2,047.9	2,567.7	25.4	9.6	14.4

^a See the note to Table X-1.

^b Revised figures.

^c Rates of change have been calculated from unrounded figures.

^d Including the value of crops destroyed.

SOURCE: Central Bureau of Statistics.

look at product or product group detail, we find that the composition of consumption changed in response to the changes in the relative prices of different agricultural products.

Per capita consumption of meat and fish, whose retail prices rose by an appreciable 18 percent, remained more or less steady because all of the additional consumption which might have been expected after the growth of disposable per capita income was offset by the rise in their relative prices. Meat became dearer in 1970/71 because of the August 1970 import surcharge and the rise in international frozen meat prices in December 1970; this was not balanced by any substantial increase in the supply of fresh local beef. Thus, although total per capita consumption of meat and fish remained fairly constant, the composition of meat consumption changed during 1970/71, with a shift from frozen imported and fresh local beef to poultry-meat. The supply of poultry-meat expanded at an unprecedented rate, and since its price trailed behind the rise in the general price level, its relative price drifted down somewhat.

The (controlled) consumer price of eggs was raised by 16 percent at the end of 1969/70, when subsidies were trimmed. As a result, per capita consumption of this item fell slightly.

Consumer prices of milk and dairy products also went up, since here too support

payments were cut. But the price rise was only 6.8 percent — less than that for any other livestock product. Demand for milk and dairy products, whose relative prices declined somewhat, thus expanded by 7 percent in terms of unprocessed milk, so that per capita consumption rose. The domestic supply of milk grew by only 2.7 percent, and it was therefore necessary to double the quantity of imported milk powder.

The current supply of fruit (including citrus) increased by about 9.5 percent in 1970/71, while producer prices were up 6-7 percent.⁶ The relative price of fruit fell because the supply was expanded more than warranted by the growth of population and income. On the other hand, the supply of vegetables, potatoes, and melons fell off, if anything, while there was certainly a decline in per capita terms. The relative prices of these commodities might therefore have been expected to go up. But the actual advance in consumer prices was only 6.5 percent. This may have been due to the uneven supply: in 1970/71 it diminished in the winter (when demand is more elastic) and grew in the summer (when demand is less elastic), so that over the year as a whole it rose only moderately.

Producer prices of agricultural products sold directly and indirectly for domestic consumption went up 10.2 percent as the combined result of the rise in frozen meat, milk, and egg prices (all of these controlled) and the more moderate rise in the case of fruit and vegetables. Domestic consumption (including processed livestock products) accounted for 48 percent of the increase in farm marketings in physical terms and for 41 percent in price terms. In the previous year 61 percent of total marketed output went to consumption. In 1970/71 the weight of this destination edged down to 60 percent at constant prices and to 57 percent at current prices. This occurred even though some import substitution took place, and it is explained by the fact that other destinations — industry (excluding processed livestock products) and exports — expanded more rapidly in both current and constant price terms.

Sales to industry (excluding livestock products) were up 33.5 percent in 1970/71 in real terms, though producer prices advanced by a comparatively mild 4 percent. Most of the additional sales consisted of four items: (a) wheat, which accounted for 35 percent of the real increment; (b) citrus — 32 percent (the total quantity supplied to industry was up 65 percent); (c) cottonseed — 10 percent (the whole crop went to industry instead of being exported); and (d) tomatoes and olives. The share of marketed output (in constant-price terms) diverted to industry thus rose from 11.6 percent in 1969/70 to 14 percent.

The destination which expanded fastest was exports, which scored a 40.4 percent gain at current prices. This reflected primarily the 32.6 percent increase in producer prices; volume was up only 5.9 percent, compared with 19 percent in 1969/70. Citrus contributed 35 percent of the real and 97.5 percent of the price increment: growers' nominal export receipts rose by over 50 percent in 1970/71 (see Table X-3), with a physical increase of only 3.1 percent and a price increase of 47.7 percent.

The rise in the price of exported output was partly due to the change in the effective

6. The difference between this figure and those in Chapters IV and VI (see note 1 above) is particularly large here and is not fully explicable.

Table X-3
DIRECT AGRICULTURAL EXPORTS, 1969/70 AND 1970/71^a

	1969/70 ^b	1970/71	Percent increase or decrease (-) in 1970/71 ^c		
			Value	Quantity	Price
Field crops	55.1	62.4	13.2	-0.2	13.5
Vegetables, potatoes, melons	33.7	39.0	15.7	24.0	-6.7
Noncitrus fruit	16.2	19.6	21.0	16.7	3.7
Eggs	7.9	10.9	38.0	25.3	10.1
Meat	12.6	15.7	24.6	11.1	12.1
Fish	1.3	1.0	-23.1	-38.5	25.0
Flowers, seedlings, decorative plants, and vegetable seeds	24.1	30.5	26.6	25.7	0.1
Misc. livestock and livestock products	6.8	5.1	-25.0	-26.5	2.0
Total, excl. citrus	157.7	184.2	16.8	11.4	4.8
Citrus	312.4	476.0	52.4	3.1	47.7
Total, incl. citrus	470.1	660.2	40.4	5.9	32.6

^a Including exports to the administered areas.

^b Revised figures.

^c Rates of change have been calculated from unrounded figures.

SOURCE: Central Bureau of Statistics.

exchange rate, since premiums on farm exports were upped from IL 0.55 to IL 1.05 per dollar. For noncitrus exports all of the price rise was due to this. If the difference in premium rates is discounted, prices for noncitrus exports actually fell in 1970/71. In the case of citrus the higher premiums accounted for about half of the total price rise, the other half being due to the increase in world prices.

The volume of noncitrus exports advanced only 11.4 percent in 1970/71, compared with 24 percent in 1969/70 and an annual average of 11.6 percent from 1965/66 to 1969/70. The 1970/71 increase thus conformed to the pattern of the five preceding years. However, growth was sustained partly because the administered areas took most of the wheat and meat exports as well as a number of less important products. The upward trend in several export items — vegetables, flowers, and field crops — appears to be slackening. Sales of vegetables and flowers rose more slowly in 1970/71 than in previous years, while field crops failed to increase at all, chiefly because cotton exports remained steady. Exports of eggs were resumed, since large surpluses accumulated in the domestic market.

Output retained on the farm (see Table X-2) was up by a modest 5 percent (at constant prices) in 1970/71 after edging down 1.5 percent in the preceding year. The 1970/71 increase was due chiefly to the larger output of intermediates, such as hatching

Table X-4
OUTPUT OF AGRICULTURAL CAPITAL GOODS,
1969/70 AND 1970/71

(IL million)

	Value at current prices		Percent increase or decrease (-) in 1970/71 ^b		
	1969/70 ^a	1970/71	Value	Quantity	Price
Livestock	9.2	15.8	72.2	21.2	42.1
Orchards	19.7	20.1	1.9	-5.9	8.3
Land reclamation and conservation, drainage, pasture, etc.	20.9	23.3	11.5	5.2	6.0
Afforestation	14.4	14.9	4.0	-7.1	12.0
Total	64.2	74.1	15.4	1.3	13.9

^a Revised figures.

^b Rates of change have been calculated from unrounded figures.

SOURCE: Central Bureau of Statistics.

eggs, sorghum, barley, and straw⁷ (the output of straw expanded mainly because of the heavier rainfall); on the other hand, the output of roughage contracted.

(c) *Output by type of farming*

1. *Livestock*

The changes that took place in 1970/71 in livestock farming should be viewed against the backdrop of three developments: (a) The revision of the Government's price and subsidy policy at the end of 1969/70 (August 1970), which *inter alia* boosted all import prices because of the 20 percent surcharge; (b) the Government's economic policy for 1970/71; (c) the rise in foreign prices of livestock products.

The controlled market prices of livestock products were raised after it was decided to reduce the subsidies on them; this affected milk and eggs. This measure, however, failed to achieve its object in 1970/71 for reasons to be discussed.

The import surcharge added 16 percent to the price of purchased feedingstuffs, which has a very high import component. The increase in imported feed prices, however, was not passed on to the farmer, but was covered by the Government. Purchasers were compensated for the higher cost due to the import surcharge by way of subsidies on final products whose prices are not controlled (such as poultry-meat and beef).

As already noted, imported frozen meat, whose price is fixed by the Government, became dearer because of the import surcharge and the December 1970 rise in foreign prices. The outcome was a 30 percent jump in the average consumer price of this item.

⁷ Own consumption also increased, but the imputed data thereon are not very reliable.

(i) Cattle farming

This branch produces two major items — milk and meat. Domestic beef production is by and large a by-product of dairy farming. Beef herds have not been developed to any significant extent in Israel and their output is marginal. In 1969/70, after two years of standstill, dairy farming underwent a fairly rapid expansion, with milk output rising by 7.5 percent and beef output by 4 percent. In 1970/71 growth again slowed down; in the first half of the year the level hardly rose at all, but it picked up in the last quarter. Milk output gained only some 2.5 percent for the year. There are two indications that the trend changed in the last quarter.

1. Quarterly data on milk production for 1970/71 show that during the first and second quarters output was respectively 3.3 and 3.1 percent higher than in the corresponding quarters of the previous year, in the third quarter it inched up by a mere 0.7 percent, but in the final quarter of 1970/71 and the first quarter of 1971/72 it moved up by 4.6 and 8.5 percent respectively over the corresponding periods of 1969/70.

2. The slaughter of milch cows and heifers, which supplied 27 percent of the meat from the dairy herd in 1970/71, slowed down as the year progressed: in the first quarter it was up 16 percent from the corresponding period of the preceding year, but in the second and third quarters the growth rate fell to 13 and 9 percent respectively, and in the last quarter it levelled off. In the first quarter of 1971/72 there was even an absolute decline.

The relatively strong increase during the first half of 1970/71 can be ascribed to two factors: the decline in the profitability of dairy farming, which apparently began in the second half of 1969/70, and the rise in beef prices. There are signs that producers tried to cash in on what they thought was a temporary advance in beef prices. This is suggested by the decline (by about 2.5 percent compared with 1969/70) in the average weight of steers and bulls slaughtered. Had meat producers expected prices to continue upward or even to remain stable after the steep rises in the first quarter of 1970/71, they would have postponed the slaughtering of cows and heifers instead of stepping it up.

Further evidence that such expectations prevailed is the fact that throughout 1970/71 there was public pressure on the Government to roll back the price of frozen meat. The farmers apparently feared that the pressure would prove successful. In practice, prices were reduced for only some types of frozen meat, and only in 1971/72 (after a further increase due to the devaluation of August 1971), when the Government bowed to the mounting pressure. However, as mentioned, the slowdown in dairy farming was checked in the second half of 1971/72. Another explanation of the change in the trend lies in producers' expectations about the Government's policy on dairy farming. In order to understand these expectations, it is necessary to look briefly at the price-fixing and milk-subsidy procedures, the way in which production quotas are set, and the development of dairy farming during the last decade.

There were several occasions during the 1960s when milk production did not keep up with demand (even when the latter was growing only slowly). This was due to the lack of smoothness in the adjustment process designed to solve the overproduction crises of the early 1960s. There were also many structural changes in the branch, with the size of the

production unit (both in moshavim and in kibbutzim) being enlarged in order to create economies of scale. Production became more concentrated and the number of milk producers declined. This was part of a general trend in the country's agriculture, with specialized production increasingly replacing the previous pattern of mixed farming.

When milk supplies failed to keep up with demand, the Government (and the Milk Production and Marketing Board) permitted producers to immediately expand output up to the next three years' quota, with subsidies guaranteed for the entire output within this limit. Dairy farmers knew from experience that when the number of producers declined, the quotas were revised every few years, usually on the basis of the actual output of each producer remaining in the branch.

Demand for milk and dairy products mounted in 1970/71, because consumer prices rose slowly in comparison with those of other livestock products such as meat and eggs. The price of milk and dairy products also fell relative to the general price level. On the other hand, the domestic supply of milk increased only moderately, owing to the reduced profitability of dairy farming since the middle of 1969/70. In 1970/71 the gap between demand and domestic supply was filled by doubling imports of milk powder and by importing butter.

There were also important changes in the international market. Livestock product prices increased in general owing to more buoyant demand. Butter rose to an unprecedented extent after Common Market surplus stocks of this commodity were liquidated; part of the rise was undoubtedly a temporary response to the drought in New Zealand (one of the principal butter exporters), but some of it seems to have been due to hoarding with the intention of permanently raising the world price of this item. In these circumstances the Government decided to retroactively recognize for the purpose of subsidy payments the milk produced in excess of quotas and to subsidize it in accordance with the calculated price, a step that affected producers' expectations about future Government policy. In 1971/72 the Government did in fact permit producers to expand milk output to the limit set by the quotas for the next three years.

The expansion of 1969/70 (when domestic milk output rose 7.5 percent) appears to have drawn down the remaining reserves of unutilized capital stock. Further expansion of dairy farming thus involved new investment. Dairy farmers do not receive credit on such easy terms as some other agricultural branches, and the speed of producers' response to the change in expectations therefore depends on their opportunities of obtaining short-term investment credit. Most of the additional milk was thus produced by kibbutzim, which can obtain short-term credit more easily than other farmers. The kibbutzim are also less sensitive to changes (or expected changes) in beef prices. Accordingly, in 1970/71 the share of kibbutzim in milk output went up at the expense of the moshav sector, after the two had held more or less steady for many years.

Beef production went up by only 1.9 percent in 1970/71 (at constant prices), compared with 4.1 percent the year before. Given the size of the herd in 1970/71, the local supply of beef should have matched the previous year's gain. However, the decline in the average weight of animals slaughtered in 1970/71 precluded this; were it not for this factor, meat output would have increased by 4.4 percent in 1970/71. Producer

prices of local beef rose in 1970/71 by 19 percent, owing to the 30 percent increase in the retail price of imported frozen meat (sales of which fell off nearly 20 percent).

Beef production became more profitable in 1970/71 because of the much higher price obtained, but there was no import substitution. The future of import substitution depends largely on what happens in dairy farming.

(b) *Poultry*

The real output of poultry farming rose faster in 1970/71 than in the previous year — 15.2 as against 8.7 percent. The acceleration was confined to poultry-meat, egg output rising to the same extent as in 1969/70 (7 percent).

In 1969/70 all of the incremental egg output was sold to the home market, after eggs had to be imported in the previous year to make up the shortfall in domestic production. In 1970/71 there was a surplus, part of which was exported at a loss and part put into storage. This imbalance between supply and demand was due mostly to the 16 percent increase in the retail price of this commodity, which brought up its relative price. But it is also partly explained by the cut in egg subsidies toward the end of 1969/70, which weakened the Poultry Board's control over the volume of egg production in 1970/71. The retail price rise dampened domestic per capita consumption from 314 eggs in 1969/70 to 307 in 1970/71; in other words, total domestic demand grew somewhat more slowly than the population (about 3 percent).

The Poultry Board should have been aware that the growth of egg consumption was likely to slacken in 1970/71, since, as mentioned, retail prices went up toward the end of 1969/70. But it was not able to fully control egg production in 1970/71. The reason must be sought in its control mechanism as it affects the quotas for individual producers; this is similar to that for cow's milk, the producer receiving a subsidy in the form of a deficiency payment. In 1970/71 the egg subsidy was pared sharply (even though this was partly offset by the reimbursing of farmers for the higher cost of feed), so that it became relatively more profitable to produce in excess of the quotas. Another factor was the outbreak of Newcastle disease in 1967/68. After its eradication, there were still serious fears of a renewed appearance. In order to keep import requirements to a minimum in the event of another bout of the disease, the Poultry Board permitted farmers to increase the number of laying hens. But since there was no recurrence of the disease, this contributed to the creation of a surplus.

The Poultry Board tried to avert a surplus by fixing high prices for poultry-meat in order to encourage the slaughter of hens; however, the price increase appears to have been inadequate, and this measure was not very effective.

The price received by the farmer for eggs rose 12 percent in 1970/71; because of the cut in subsidies, this was less than the rise in consumer prices. (As already noted, the farmer was compensated for the higher cost of purchased feedstuffs).

Real output of poultry-meat rose by a record 22 percent (including an impressive 38 percent for turkey); this compares with a 10 percent gain in 1965/66, 8.5 percent in 1966/67, no increase in 1967/68, 5 percent in 1968/69, and about 10 percent in

1969/70. The entire 1970/71 increase was absorbed by the domestic market, since the price of frozen meat rose while the domestic supply of beef did not expand. Poultry thus served as a substitute for imported frozen meat.

Owing to the much larger supply of poultry-meat in the year reviewed, the price received by the farmer went up only 11 percent, as against 19 percent for beef. This means that the relative producer price of poultry-meat declined. The consumer price rose less on an annual average than the producer price. In the first quarter of the year the record supply⁸ necessitated the payment of a sizable IL 17 million poultry-meat subsidy (the total subsidy for the year came to IL 20 million), in order to maintain the guaranteed price after it was raised because of the higher cost of feed. During the rest of 1970/71 the market price of poultry-meat remained high. This was due to the heavier demand for poultry after beef (both fresh and frozen) became more expensive, as well as to the fact that producers, who can respond quickly to changes in market conditions (the production cycle here is only three months), reduced supplies in the second and third quarters of 1970/71.

2. *Crops*

The real output of crops was up 10.6 percent in 1970/71, compared with 5.6 percent in the previous year. After drifting down 1.7 percent in 1969/70, producer prices went up by a rapid 16.2 percent in the year surveyed.

The strong output growth is explained chiefly by weather conditions. Citrus and other fruit contributed 47 percent of the total increment. There were also bumper yields of cereals and pulses, thanks to the heavy rainfall after three dry years. These two crops accounted for 25 percent of the increment; the remaining 28 percent was largely due to a deliberate expansion of supplies,⁹ and was divided among vegetables, potatoes, and melons (17 percent of the increment), industrial crops (5 percent), and flowers (6 percent).

Most of the 16.2 percent rise in producer prices occurred in citrus. This branch (whose share in nonlivestock output in 1969/70 was 34 percent, at current prices) was responsible for 75 percent of the total 1970/71 price increase; the producer prices of noncitrus crops went up only 6 percent. This moderate rise is explained by the larger quantities of fruit shipped to the domestic market, and by the fact that the export prices of noncitrus crops remained unchanged or receded. With a few exceptions, the prices of crops sold to industry did not rise appreciably.

8. The steepest increase in the poultry-meat supply occurred in the first quarter of the year, and must have been the result of deliberate planning by producers before the end of 1969/70. Since poultry-meat prices did not rise in the second half of 1969/70, there is no satisfactory explanation for this. The increased supply in the rest of 1970/71 can, however, be explained as a response to the rise in beef prices.
9. Some of the increase in the output of cereals and pulses can in fact also be regarded as planned, in the sense that the area under unirrigated summer crops was expanded after it was known how much rain fell during the winter.

Table X-5
CURRENT AGRICULTURAL OUTPUT,^a BY TYPE OF FARMING,
1969/70 AND 1970/71

(IL million, at producer prices)

	Value at current prices		Percent increase or decrease (-) in 1970/71 ^c		
	1969/70 ^b	1970/71	Value	Quantity	Price
Livestock					
Poultry					
Eggs	171.0	206.1	20.5	7.5	12.1
Meat	227.8	307.1	34.8	21.6	10.8
Miscellaneous	8.0	7.8	-2.2	-2.6	0.4
Total	406.8	521.0	28.1	15.2	11.2
Cattle					
Milk	189.5	204.7	8.0	2.6	5.2
Meat	109.2	132.7	21.5	1.9	19.2
Miscellaneous	15.2	14.2	-6.3	-6.3	0.0
Total	313.9	351.6	12.0	1.9	9.9
Other livestock					
Milk	26.0	30.0	15.4	-4.3	20.5
Meat	46.1	56.0	21.5	0.9	20.4
Fish	45.7	64.4	40.8	17.7	19.7
Miscellaneous	7.4	8.7	17.1	8.2	8.3
Total	125.2	159.1	27.1	6.4	19.5
Total livestock	845.9	1,031.7	22.0	9.0	11.9
Crops					
Citrus	382.8	565.3	47.7	8.3	36.4
Other fruit	206.8	244.2	18.1	12.0	5.4
Vegetables	169.4	188.1	11.0	9.7	1.2
Melons	31.3	32.9	5.1	1.6	3.5
Potatoes	32.1	36.6	14.0	3.6	10.0
Cereals and pulses	54.6	92.3	69.0	55.1	8.9
Industrial crops	151.3	180.9	19.6	4.0	15.0
Fodder	65.7	64.0	-2.6	-3.4	0.8
Flowers, seedlings, and decorative plants	28.1	36.3	29.1	29.1	0.0
Miscellaneous ^d	15.7	21.3	35.0	26.9	7.1
Total	1,137.8	1,461.9	28.5	10.6	16.2
Total current output	1,983.7	2,493.6	25.7	9.9	14.4

^a Marketed output, on-farm consumption, and intermediate goods (agricultural raw materials).

^b Revised figures.

^c Percentage changes have been calculated from unrounded figures.

^d Includes straw, green manure, forest products, citrons, and vegetable seeds.

SOURCE: Central Bureau of Statistics.

(a) *Citriculture*

Citrus output continued to expand rapidly in 1970/71, the gain (at constant prices) coming to 8.3 percent, compared with 12.3 percent the year before. In physical terms (tons) the rise was much faster — 20 percent as against 7 percent in 1969/70.

Table X—6
CITRUS OUTPUT, BY ECONOMIC DESTINATION, 1969/70 AND 1970/71

	Quantity (‘000 tons)		Value at current producer prices (IL million)		Percent increase or decrease (–) in 1970/71 ^b		
	1969/70 ^a	1970/71	1969/70 ^a	1970/71	Value	Quantity	Price
Direct export	815.7	858.6	312.4	476.0	52.4	3.2	47.7
Industry	324.7	535.2	33.4	51.9	55.4	65.1	–5.9
Domestic consumption ^c	94.1	91.7	31.5	31.8	1.0	–0.7	1.7
On-farm consumption	27.5	28.0	5.5	5.6	1.8	1.8	–
Total	1,262.0	1,513.5	382.8	565.3	47.7	8.3	36.4

^a Revised figures.

^b Rates of change have been calculated from unrounded figures.

^c Including private sales.

SOURCE: Central Bureau of Statistics.

The difference between the growth rates in constant-price and tonnage terms was due to a change in the destination of output. The price of fruit sold to industry is well below the export price, and in a year when most of the output increment goes to industry, this results in the constant-price increase falling below the quantitative increase, and the opposite is true when most of the increment is marketed abroad. In 1969/70 the bulk of the additional output was exported and sales to industry contracted. In 1970/71 exports expanded by only 5 percent in tonnage terms, while sales to industry soared 65 percent, so that some 85 percent of the quantitative increment went to this destination.

Most of the output gain can be ascribed to the much larger yields per dunam of fruit-bearing area, since total fruit-bearing acreage increased only slightly.

After slipping 10 percent in 1969/70, citrus prices shot up 36.4 percent in the year reviewed, with the entire increase being concentrated in exports (as was the price decline of the preceding year). Prices of exported citrus were up 47.7 percent; about half of the increase was due to the revision of the effective exchange rate for exports — the premium was raised from IL 0.55 to IL 1.05 per dollar. The rest of the increase reflects the higher prices commanded abroad after supplies from competing countries (especially Spain) contracted because of unfavorable weather conditions.

The quantities sold to industry rose 65 percent, with prices falling 6 percent. The volume of Shamuti oranges was up 73 percent, and the entire price decline was concen-

trated in this variety. European tariffs are causing considerable export difficulties, and these oranges reach the market at the same time as those of competitors.¹⁰

Exports of early-ripening oranges and grapefruit and other citrus fruits are not problematic. In order to prevent future marketing difficulties, a new planting policy has been introduced, with the aim of gradually reducing the share of oranges in the country's citrus crop program by substituting other varieties. This policy is being implemented by the Ministry of Agriculture through the grant of various incentives for growing grapefruit (both new plantings and the replanting of orange groves).

Direct domestic consumption of citrus edged down 0.5 percent in 1970/71, after a moderate increase in 1969/70. The price received by the grower for citrus sold to this market rose only 1.7 percent, probably because of the expanded supply of noncitrus fruit such as apples and pears.

The combined result of the quantity and price increases of 1970/71 was a 48 percent gain in the value of output (see Table X-6). The weight of citrus in total agricultural output reached a record 22 percent (at current prices), after having declined steadily from 21 percent in 1967/68 to 20 percent in 1968/69 and 19 percent in 1969/70.

(b) Other fruit

The real output of noncitrus fruit was up 12 percent in 1970/71 (see Table X-5), after a standstill the year before. Over 80 percent of the output is sold for direct domestic consumption; in 1970/71 supplies to this market increased by 12 percent, with the grower receiving a 6 percent higher price.¹¹ As in the past, there were considerable differences among the different kinds of fruit: the supply of apples was up 27 percent, plums 27 percent, peaches 25 percent, table grapes 20 percent, and avocados 94 percent. On the other hand, the supply of pears shrank 41 percent, apricots by 2 percent, and bananas by 9 percent.

There were also differences in the prices fetched: apples were down 5 percent and plums by 14 percent; despite the larger supply, peaches rose 5 percent, because early-ripening strains have been developed which appear on the market when the price is still high. Table grapes slipped 5 percent and avocados by only 2 percent (despite a 94 percent increase in supply). Pears, however, jumped 47 percent and bananas by 6 percent, owing to the contraction of supplies.

Exports and sales to industry likewise increased rapidly in 1970/71 — by 16.4 and 12.6 percent respectively. Avocado acreage has been considerably enlarged in recent years, and exports of this item soared 80 percent in 1970/71, accounting for most of the gain in noncitrus fruit exports. The increase also reflects the recovery from 1969/70, when output (for both export and local sales) was reduced by bad weather. Banana exports were down 6 percent in 1970/71 (with the home supply falling 9 percent), owing to smaller yields.

10. This is true of the late-ripening varieties too, but there the volume involved is smaller.

11. This figure differs from that in Chapter IV ("Private Consumption and Saving") since, in addition to the current supply, it includes apples put into storage for marketing in 1971/72.

(c) *Industrial crops*

After declining by about 4 percent in 1969/70, the real output of industrial crops went up to a similar extent in the year surveyed (see Table X-5); sugar beet was up 7.8 percent, groundnuts by 13.4 percent, and cotton by 3.4 percent, while tobacco output fell 32 percent.

The larger sugar beet output was due entirely to the expansion of acreage, both irrigated (up 18 percent) and unirrigated (36 percent); the per dunam yield thus declined. Sugar beet production is sensitive to winter weather: yields drop in a cold, rainy season and rise if the winter is warm. The increase in sugar beet acreage in the Jewish sector, where the tendency is to irrigate this crop, constituted a reversal of the downward trend begun in 1964/65. The expansion of unirrigated acreage was in line with the existing trend in non-Jewish farming, where sugar beet has for some years been replacing less profitable unirrigated crops. That irrigated sugar beet acreage rose again after several years of contraction appears to have been due to two factors: (a) the decision not to close a local sugar processing plant whose future had been in doubt; (b) the fact that most of the water for sugar beet is needed in the off-season for water consumption. (Sugar beet is sown in September, and the crop is harvested by the end of June. Most of the water is needed at the end of summer, in the autumn, and in the spring, while peak water consumption in general is in July and August. Thus considerations of spreading water consumption over the year may have been decisive in the decision to extend sugar beet acreage.)

The increase in groundnut production continued the trend of recent years.¹² Cotton output, which decreased by 10 percent in 1969/70, went up only 3.5 percent in 1970/71. This reflected the 5 percent contraction of irrigated cotton acreage during the year; unirrigated acreage was expanded by 14 percent, but it came to only 10-12 percent of total cotton acreage and its share of the crop was even lower. The reduction of irrigated acreage marked the end of an expansion stretching back for many years — including 1968/69 and 1969/70, even though the per dunam yield declined in those years. The smaller average yield can be partly attributed to the fact that the additional acreage in recent years consisted of marginal land. Another weighty factor is the severe water shortage in the peak irrigation months, July and August. During these months cotton is the major crop competing for available water, and presumably this was the reason why, along with the reduction of the irrigated areas, there was a substantial increase in unirrigated acreage. Cotton is sown in the spring, when it is already clear how much rain fell in the winter (the wet season). In addition, in years of heavy rainfall fairly high yields can be obtained without irrigation, and in 1970/71 unirrigated cotton acreage was extended appreciably for this reason.

To sum up, irrigated sugar beet and groundnut acreage was increased in 1970/71 chiefly at the expense of irrigated cotton, but also at the expense of irrigated roughage (see section [e] below).

Producer prices of cotton rose considerably in 1970/71 — 17 percent for fibers and

12. See Bank of Israel, *Annual Report, 1970*, Chapter X, "Agriculture", p. 211.

22 percent for cottonseed. In sugar beet the rise came to only 4 percent and in groundnuts to 6.5 percent. The corresponding figures for 1969/70 were 5 percent for sugar beet and 9.5 percent for cotton fibers and seed, while groundnuts were down about 2 percent.

The changes in cotton and sugar beet acreage cannot, therefore, be explained by changes in their relative prices in 1969/70, and it appears that the influence of the factors mentioned above was sufficiently strong to alter the trends. In 1970/71 the producer prices of cotton rose very rapidly, while those of sugar beet hardly rose at all. The relative price of cotton thus went up as compared with sugar beet, and it is too early to tell whether the new trend will persist or whether the area under cotton will continue to expand and that under sugar beet diminish. This will probably be determined mainly by developments in the international market. Foreign cotton prices advanced strongly in the past two years; the price received by the grower per ton of fiber sold abroad (excluding the export premium) reached IL 3,360 in 1969/70, compared with only IL 3,200 per ton sold to local spinning mills. The differential between the export and domestic prices was greater still if the export premium is taken into consideration, with exports bringing the producer IL 4,070 per ton, so that it would have paid him to market all of his crop abroad. However, exports fell in 1969/70, because contracts to supply local firms had to be fulfilled, while the cotton supply contracted. In 1970/71, too, there was virtually no increase in fiber exports, most of the output increment going to local spinneries. Cottonseed exports declined because of heavier domestic sales.

If the high foreign price of fibers is maintained, foreign and domestic sales will eventually fetch the same price. Sugar prices have also begun to move up in the world market of late, so that it is difficult to foresee the combined effect of these changes on local production of cotton and sugar beet.

(d) Cereals and pulses

The favorable distribution of the ample rainfall in 1970/71 made this a good year for unirrigated field crops, with all cereals giving bumper yields.

Wheat output was up by over 60 percent, with acreage being extended by some 5 percent; in other words, most of the increment was due to higher per dunam yields. But it should be noted that yields were low in 1969/70, the third consecutive year of drought.

Barley was up 29 percent, despite a 9 percent reduction of acreage. The reason for this respectable increase is the same as for wheat. The area sown has been shrinking for several years, since wheat production is relatively more profitable in this country.

Sorghum is a summer crop sown when it is already known how much rain fell in the winter, and hence very little risk is involved. In the year reviewed irrigated acreage was extended by 35 percent and unirrigated acreage by 57 percent. This, along with the higher per dunam yields obtained, resulted in a nearly 90 percent larger output.

(e) Fodder

The real output of roughage contracted by 3.4 percent, after having declined 2.4 percent in 1969/70. This was a planned decrease, reflecting a reduction in acreage and not in yields.

The decline of the last two years can be attributed to the low profitability of dairy farming, the competition for the limited quantities of water available, and the fact that straw and other food wastes are being increasingly substituted for roughage.

(f) *Vegetables, potatoes, and melons*

The real output of these items was up 7.8 percent in 1970/71, compared with 11.4 percent the year before.

Melons and potatoes were responsible for most of the slowdown, their output rising by only 2-3 percent, as against 6.8 and 20.2 percent respectively in 1969/70. Vegetables posted a 9.7 percent gain, nearly as much as the 10.5 percent recorded in 1969/70.

Vegetables (which accounted for about 75 percent of the total output of this branch, at current prices) continued to expand despite the cold, wet winter of 1970/71; the relatively mild winter of 1969/70 was more favorable, since vegetables do better in warm weather. The 1970/71 increase reflected the expansion of the area under vegetables for export and for domestic industrial processing. Overseas sales continued upward in 1970/71, though not nearly so rapidly as in 1969/70 — by 24 as against 78 percent. The sagging growth rate is explained mainly by the harsh 1970/71 winter, and to a lesser extent by competition between the foreign and domestic markets during the winter. Export vegetable prices dipped 8 percent, despite the increase in the effective rate of exchange; in the winter of 1970/71 there was some diversion of vegetables from the overseas to the home market because of the shortage of supplies and the consequent price rise in the latter market. It should be noted that export production specializes in a limited number of vegetables for shipment during the off-season in overseas markets, and in recent years this has not permitted much shifting between the domestic and export markets.

The labor situation undoubtedly also helps account for the slower expansion of vegetable exports. Vegetable cultivation — especially of export crops — involves a large number of man-days concentrated in short seasons. Under conditions of over-employment, such as obtained during the year reviewed, the manpower constraint increases the risk of export production.

Sales to industry were up 30 percent in 1970/71, chiefly because of the continued expansion in the kibbutzim of the area under tomatoes grown exclusively for processing. This crop, whose cultivation is almost entirely mechanized, has been developed very rapidly by the kibbutz sector, which, owing to its social structure, does not specialize in labor-intensive crops.

As a result of the above developments, the upward trend in the production of vegetables for industry reasserted itself in the year reviewed after being checked in 1969/70.

The supply of vegetables for direct domestic consumption was down 1.5 percent in 1970/71 owing to the severe winter. Prices in the domestic market rose appreciably during the winter, but retreated again with the expansion of supplies in the summer. Over the year as a whole, the rise in producer prices was very moderate, averaging only some 4 percent,¹³ and consequently there was a drop in relative producer prices.

13. See the note on page 199.

Retail prices rose faster than in 1970/71, because of the 30 percent cut in subsidies. Here, too, there was a decline in relative prices despite the contraction of supplies; this is perhaps explained by seasonal variations in the elasticity of demand, which is higher in winter and spring than in summer and autumn.

(g) *Flowers, seedlings, and ornamental plants*

This export-oriented branch continued to advance in 1970/71, in line with the trend of the past several years, with both output and exports rising about 30 percent. Though much below the 70 percent export gain in 1969/70, that posted in the year reviewed was still quite respectable. The slackening of growth must be ascribed partly (as with vegetable exports) to the harsh winter, but mainly to conditions in the labor market. The cultivation of flowers is highly labor-intensive, and (again as with export vegetables) a large number of man-days must be concentrated in short seasons.

3. INPUT

In 1970/71 inputs purchased from other sectors increased by 9.6 percent at constant prices (see Table X-7), about the same as in the previous year (9.4 percent). Real output, however, expanded by 9.6 percent in 1970/71, compared with only 5.6 percent in 1969/70; that is, output growth was stronger in the year reviewed, while that of purchased inputs was not. There were two major reasons for the change in growth rate:

(a) There was ample rain in 1970/71, while 1969/70 was the third consecutive year of drought. This was reflected in the water consumption: whereas in 1969/70 it went up 8 percent, in 1970/71 it fell 4 percent. Since irrigated acreage was expanded at the same rate in both years (3.8 percent), the comparison mainly reflects the difference in rainfall. The steps taken to ensure a more efficient use of water in recent years undoubtedly contributed to the 1970/71 decline in this input. However, the effect of these measures – which entail investment in and the development of new water-saving techniques – can hardly show up much in a comparison of adjacent years. Nevertheless, as Table X-8 shows, average water consumption 1969/70 was below the long-term average for dry years. This must be credited chiefly to the rationalization of agricultural water use.¹⁴

(b) Purchases of feedstuffs, which accounted for 43 percent of total purchased input (at current prices) and are the main variable input in livestock farming, were up only 6.9 percent in 1970/71 compared with 11.4 percent in the preceding year, even though the expansion of livestock output accelerated from 7 to 9 percent during this period.

This development is explained by the rise in the price of purchased feedstuffs at the end of 1969/70 because of the import surcharge; since the import component of this input is very high, the surcharge brought up the price by 15.4 percent (see Table X-7). Dairy farmers responded to this by shifting to types of fodder whose relative price fell. In poultry farming such substitution is not possible, and purchased feedstuffs must be used

14. Another factor reducing the average water input per irrigated dunam is the change in the crop program, with the share of water-intensive crops declining.

Table X-7
INPUT OF MATERIALS AND SERVICES IN AGRICULTURE,^a
BY SOURCE, 1969/70 AND 1970/71^b
(IL million)

	Value at current prices		Percent increase or decrease (-) in 1970/71		
	1969/70 ^c	1970/71	Value	Quantity	Price
Purchases from other sectors					
Feed	345.1	425.7	23.4	6.9	15.4
Water	65.1	73.0	12.1	-4.1	17.0
Packing materials	91.0	126.8	39.3	18.2	17.8
Fertilizers	39.6	42.6	7.6	6.3	1.2
Transportation	60.1	73.4	22.1	18.3	3.2
Spare parts, repairs, and tools	49.7	64.0	28.8	10.1	17.0
Fuel, lubricants, and electricity	23.4	27.1	15.8	3.0	12.4
Pesticides and veterinary preparations	50.5	72.0	42.6	25.1	13.9
Insurance and Government services	44.1	52.4	18.8	10.2	7.8
Miscellaneous	21.6	26.2	21.3	7.4	12.9
Total	790.2	983.2	24.4	9.6	13.5
Wages of hired labor	240.0	290.7	21.1	-	-
Interest and rent	70.0	90.0	28.6	-	-
Intermediate goods	165.0	184.4	11.8	6.7	4.7
Depreciation	151.5	182.9	20.7	9.6	10.1
Grand total	1,416.7	1,731.2	22.2	-	-

^a Excluding capital and labor.

^b See the note to Table X-1.

^c Revised figures.

SOURCE: Central Bureau of Statistics.

even when their price rises. The substitution in dairy farming did not involve an increased consumption of roughage (whose supply contracted in 1970/71), because of the greater utilization in recent years of farm wastes (straw, sugar beet tops, orange peel, etc.). The supply of these waste products was considerably larger in 1970/71.

The real input of transport and packing materials increased in 1970/71 at a rapid rate, consistent with the expansion of farm marketings in general and of citrus and other export crops in particular (see Table X-7).

There were also much heavier purchases of pesticides, the real rise coming to 25 percent as against 12.5 percent in 1969/70. This may reflect not only the actual incidence of disease and pests, but also increased consumption for preventive purposes.

Most purchased inputs became dearer in 1970/71 (see Table X-7), and the average price rise was roughly the same as for output - 13.5 as against 14.4 percent. In 1969/70 the price of purchased inputs went up only 2.2 percent.

The rise in input prices is largely explained by the import surcharge of August 1970,

Table X-8
WATER INPUT IN AGRICULTURE, 1958/59 TO 1970/71

	Unit	Average for dry years ^a	Average for rainy years ^b	1966/67	1967/68	1968/69	1969/70 ^c	1970/71
Irrigated area	'000 dunams	—	—	1,616	1,645	1,662	1,724	1,790
Quantity of water	million m ³	1,176	1,065	1,116	1,265	1,235	1,330	1,275
Water consumption per dunam of irrigated area								
Actual consumption	m ³	781	716	690	769	743	771	712
Index (1963/64 = 100)		112.0	102.1 ^c	98.6	109.9	106.1	110.8	102.3

^a Dry years — 1958/59, 1959/60, 1961/62, 1962/63, 1965/66, 1967/68, 1968/69 and 1969/70.

^b Rainy years — 1960/61, 1963/64, 1964/65, 1966/67, and 1970/71.

^c Revised figures.

SOURCE: Central Bureau of Statistics

which affected items with a high import component, such as purchased feed, packing materials, spare parts, and fuel. But water rates also rose in 1970/71 – by as much as 17 percent.

The labor input, as measured by manpower survey data, continued to drift downward, in line with the trend in evidence since the early 1960s.¹⁵

The total labor input (including workers from the administered areas) declined by 3.6 percent in terms of man-hours, compared with 2.3 percent the year before. The 1970/71 decline somewhat exceeded the 2.5 percent average annual rate of the past decade. According to manpower surveys, the entire 1970/71 contraction was concentrated in nonhired labor, while in 1969/70 it was in hired labor (including workers from the administered areas). The input of nonhired labor dropped 9.2 percent in 1970/71 in terms of man-hours, compared with an increase of 2.4 percent in 1969/70. Hired labor (including that from the areas) went up in 1970/71 by 7.4 percent (0.8 percent in the case of Israeli employed and 52.5 percent for area workers). The share of hired labor (including the areas) thus rose from 34 percent in 1969/70 to 38 percent; measured by the number of employed persons, the increase was from 35 to 37 percent. The proportion of workers from the areas rose appreciably – from 5 percent of all persons employed in agriculture in 1969/70 to 7.3 percent in 1970/71, and from 14.5 to 20 percent of all hired workers.

The labor situation in agriculture must be viewed against the backdrop of the general boom conditions of 1970/71. Nonhired farm workers were apparently able to find alternative employment offering a higher income; this applied in particular to the kibbutz sector, where the shift from farming to industry and services is now in full swing (in this way the kibbutz is solving the problem of utilizing the manpower released from agricultural work). The number of nonhired farm workers taking on nonagricultural jobs rose proportionately faster than the decline in the labor input. This made it necessary to increase the input of hired labor; the number of workers went up by 4.7 percent during the year reviewed, with most of the additional help coming from the administered areas.

The changes in the composition of output in the past two years probably contributed to the change in the sector's labor structure: the output of branches requiring considerable hired labor – such as citrus, other fruit, vegetables, and flowers – grew very rapidly in the year surveyed. In 1969/70 the citrus crop increased but much less than in 1970/71, the output of other fruit did not rise at all, and vegetables and flowers both posted similar gains in these two years. On the other hand, both cattle and poultry farming, which provide work chiefly for nonhired workers, expanded in 1969/70, whereas in 1970/71 nearly all of the growth was in the poultry branch. The labor input coefficient is about 25 percent lower in poultry than in cattle farming.

The full employment conditions prevailing in the country in the past year made it difficult for agriculture to obtain hired labor without raising wages substantially, and the sector's wage bill increased by 21 percent in 1970/71 (according to data of the National

15. The labor input figures (especially the breakdown for hired and nonhired labor) should be treated with reserve, because of rather large standard errors in the source data.

Insurance Institute). Hourly wages went up 12.7 percent on an annual average (according to National Insurance data) and man-hours by 7.4 percent (according to manpower survey data, including the administered areas).¹⁶ While the growth of the total wage bill trailed behind the national average, it was by no means a negligible increase, especially in view of the structural change in the agricultural labor force; the proportion of workers from the administered areas rose, and despite a notable increase in 1969/70, their wages are still lower than those paid Israelis. Thus, while the rise in wages per farm worker exceeded the national average, hourly wages fell below it.

Depreciation was up 9.6 percent (in constant prices), compared with some 7 percent in both 1969/70 and 1968/69. The acceleration in the year reviewed reflected the continued trend toward mechanization.

The value of intermediate inputs rose slowly in 1970/71 compared with other agricultural output; the figure was up 6.7 percent (after edging down 1 percent in 1969/70). The low growth rate can be ascribed mainly to the fact that roughage output (which accounted for 36 percent of total output of intermediates) did not rise at all. However, the output of sorghum and barley for on-farm consumption gained 79.1 and 33.3 percent respectively, owing to the wet season. Sorghum acreage was extended by 44 percent, and barley acreage was reduced by 10 percent. The output of hatching eggs was up 15 percent.

4. PRODUCTIVITY

Both total¹⁷ and factor¹⁸ productivity increased rapidly in 1970/71, after three years of virtual standstill. The gain in total productivity came to 5.5-6.5 percent, compared with 0, 2.3, and 2.4 percent in 1967/68, 1968/69, and 1969/70 respectively; factor productivity increased more rapidly — by 11-13 percent as against 4, 4.3, and 4.4 percent respectively in the three preceding years.¹⁹

Because of the strong influence of the weather and other natural factors, little significance should be attached to annual changes in agricultural productivity. The 1970/71 advance can be ascribed chiefly to the higher yields, with the favorable weather being the major contributory factor. The fact that consumption of purchased feedstuffs was only slightly higher in the year reviewed and that of roughage failed to grow, while the output of livestock and livestock products expanded rapidly, also helped, as did the decline in the water input (see section 3 above). The labor input continued downward (faster than in 1969/70), and the growth of real gross capital stock, though more rapid

16. National Insurance data relate to the number of jobs, which declined 2 percent. This figure would result in a 23 percent increase in wages per job. It is difficult to accept the National Insurance data on the change in jobs and the derived figure for wages per job, because the change in the composition of the labor force should have slowed the average increase in wages per employee.

17. The index of real output (including agricultural intermediates) divided by the weighted index of input.

18. The index of real product divided by the weighted index of the labor and capital inputs.

19. The method of estimation is presented in the appendix (in Hebrew only).

than in 1969/70 (2.7 percent as against 2.1 percent), was still below the product growth rate.

5. INCOME

After dipping slightly in 1969/70, income originating in agriculture (i.e. net agricultural product at producer prices) jumped 29.3 percent in the year reviewed, the result of both the 10.2 percent increase in real product and that of 17.3 percent in its prices. This is the fastest gain since 1959/60, when the growth rate began to sag. The previous high was in 1962/63, when net product was up 27 percent, and both real product and prices advanced strongly. In 1966/67 the net product expanded by 20 percent even though prices retreated. The respectable gain in the year reviewed reflected both quantity and price increases – notably the price of citrus exports and the domestic price of meat.²⁰

Because of the ample rain in 1970/71 and the absence of any serious natural damage, drought and other compensation payments contracted from IL 23.7 million in 1969/70 to IL 17.8 million; part of the latter amount was on account of 1969/70, since there is usually a lag in such payments. Total income from agriculture (i.e. the net product plus drought and other compensation) thus increased less than the net product at producer prices – by 28 percent (compared with 1.2 percent in 1969/70).

Wage expenditure rose 21 percent in 1970/71, compared with 12 percent in the previous year, while outlays on interest and rent went up 28.6 percent (11 percent in 1969/70). Income of farm proprietors from agriculture (the net product at factor cost, less wage expenditure, rent, and interest) rose by an unprecedented 30 percent in 1970/71, since total income originating in agriculture outstripped the growth in these three expenditure items.

This impressive gain came after a 2 percent decline in 1969/70, due entirely to citriculture, for which this was a poor year. The vigorous 1970/71 expansion was also concentrated primarily in citrus, the higher prices here accounting for IL 139 million out of a total increase of IL 199 million in farm owners' income from agriculture. It follows that the price increases in themselves resulted in some 70 percent of the incremental income going to citrus growers, whose share in total output for the year came to 22 percent (19 percent in 1969/70). Since the fruit-bearing area under this crop remained virtually unchanged, the physical expansion of citrus output was due almost entirely to higher per dunam yields, and required additional inputs only in harvesting, packing, and transport, but not in any other inputs or fixed overheads. Hence the 70 percent estimate for the share of citriculture in the incremental income, which takes account only of the price increase, is a conservative figure.

Direct subsidies on agricultural output rose 9.6 percent in 1970/71 (see Table X-9), compared with 1.3 percent in 1969/70, despite the Government's declared intention of cutting agricultural subsidies.

Toward the end of 1969/70 the market prices for cow's milk and eggs were raised

20. See section 2.

Table X-9
AGRICULTURAL SUBSIDIES, 1969/70 AND 1970/71
(IL million)

Item or type of subsidy	Value at current prices		Percent increase or decrease (-) in 1970/71		
	1969/70 ^a	1970/71	Value	Quantity	Price
Citrus sold to industry	2.3	3.8	65.1	65.1	0.0
Eggs	21.9	16.8	-23.3	7.5	-28.7
Poultry	9.0	21.2	135.6	21.6	93.8
Cow's milk	44.4	46.2	4.1	2.7	1.4
Beef	2.2	0.7	-68.2	1.9	-68.8
Mutton	0.3	0.6	100.0	-1.6	103.3
Fish	1.8	0.7	-61.1	17.7	-67.0
Vegetables and potatoes	6.8	4.8	-29.4	8.7	-35.1
Wine grapes	1.7	1.0	-41.2	2.7	-42.7
Other fruit	3.4	2.4	-29.4	12.0	-37.0
Groundnuts	0.2	0.2	0.0	13.4	-11.8
Sugar beet	3.0	3.3	10.0	7.8	2.0
Cotton	-	4.5	-	-	-
Tobacco	0.8	0.7	-12.5	-32.5	28.9
Wheat	5.7	6.5	14.0	61.0	-29.2
Subsidies by the Jewish Agency Settlement Dept.	0.1	0.1	0.0	0.0	0.0
Total subsidies on output	103.6	113.5	9.6	10.7	-1.0
Fodder	2.9	24.2 ^b	734.5	6.9	680.6
Water	21.0	21.0	0.0	-4.1	4.3
Fertilizer	4.7	3.3	-29.8	6.3	-34.0
Total factor subsidies	28.6	48.5	69.6	0.7	68.4
Drought compensation, etc.	23.7	17.8	-24.9	-	-
Total subsidies	155.9	179.8	15.3	-	-

NOTE: A change in quantity reflects the real change in subsidized output. A change in price reflects the change in the average subsidy rate per unit of subsidized output or input.

^a Revised figures.

^b Excluding IL 8.5 million in devaluation differentials and IL 5.0 million in subsidy payments due to an increase in stocks.

SOURCE: Ministry of Agriculture.

substantially in order to compensate farmers for the trimming of the subsidies on these commodities. In 1969/70 they accounted for 65 percent of total subsidies on agricultural output. The cut in these support payments was partly offset by the reimbursement of milk and egg producers for the dearer cost of feedstuffs because of the import surcharge.

The net decline in the egg subsidy came to nearly 30 percent per unit of subsidized output (see Table X-9), while for milk the subsidy was about the same as in 1969/70, despite the rise in the market price. This is because in the second half of the year the Government recognized for purposes of the subsidy the milk produced in excess of the quota, with the object of encouraging dairy farming after it had been experiencing a standstill.

At the end of 1969/70 the Government raised the minimum price of beef and poultry-meat as compensation for the dearer cost of feed, and this was reflected by a much heavier subsidization of poultry-meat. The sharp fluctuations in the supply of this commodity during 1970/71 depressed its first-quarter prices to such a low level that in October and November 1970 alone the Government paid IL 17 million (out of a total of IL 21 million for the entire year) to shore up the price. In addition, with a view to inducing farmers to slaughter hens, the Government paid incentive prices, and this too boosted the poultry subsidy in 1970/71. Consequently, the subsidization of poultry-meat was more than doubled – from IL 9.0 million in 1969/70 to IL 21.2 million.

The minimum guaranteed prices of beef were also raised, but the market price was so high in 1970/71 that the subsidy rate per unit of subsidized output plunged nearly 70 percent. Fruit and vegetables subsidies, which take the form of Government participation in joint funds, decreased because of smaller surpluses.

The heavier subsidization of agricultural output in 1970/71 thus reflected the IL 7.1 million increase in poultry support payments (on eggs and poultry-meat) and the resumption of the cotton subsidy to compensate for the low price received from local spinning mills as compared with international prices (see Table X-9).

The only significant change in factor subsidies was for purchased feed, where there was a big increase in 1970/71; the increase in international grain prices was absorbed by the Government, which undertook to keep feed prices stable after the imposition of the import surcharge in August 1970. Between 1967/68 and 1969/70 the subsidy on this input was gradually reduced, until it came to less than IL 3 million in 1969/70. But the rise in foreign feed prices in 1970/71 and the Government's commitment to keep down the price to the farmer changed this trend, and in 1970/71 this input was subsidized to the tune of IL 24.2 million. The Government also covered the IL 8.5 million exchange rate differential on feed imports arising from the devaluation of August 1971. In addition, anticipating further price increases abroad in 1970/71, it bought feed in excess of current requirements, and the subsidy on these stocks came to IL 5 million. All told, the subsidy on purchased feed increased by IL 36 million in the year reviewed.

Total agricultural support payments – output and factor subsidies and compensation for drought and other natural damage – rose from IL 155.9 million in 1969/70 to IL 179.8 million; less the subsidy on purchased feed stocks and exchange rate differentials, this comes to over 15 percent.

6. INVESTMENT

(a) *Investment and capital stock*

Agricultural investment continued upward in 1970/71, though rather more slowly than in the preceding year: real gross investment in agriculture (excluding afforestation) and irrigation increased by 4 percent, compared with an average of 7 to 8 percent per annum between 1966/67 and 1969/70 and over 14 percent in 1969/70.

From 1957/58 to 1965/66 the level had fallen steadily. It was not until 1966/67, when the decline of the early 1960s in the product growth rate was arrested with the annual rate stabilizing at 5-7 percent, that real gross investment began to turn upward.

It is too early to tell whether the sagging 1970/71 growth rate signifies the start of a new trend, or whether it was due to random factors.

The livestock inventory expanded appreciably in 1970/71 (for the third year running), as did investment in machinery and equipment, land reclamation and conservation, and drainage (see Table X-10).

Expenditure on farm structures contracted after a big rise in 1969/70, while the figure for orchards and afforestation continued downward.

Table X-10
ESTIMATED GROSS INVESTMENT IN AGRICULTURE, 1970-71
(IL million)

	Value at current prices		Percent increase or decrease (-) in 1971		
	1970 ^a	1971	Value	Quantity	Price
Orchards	19.7	20.1	1.9	-5.9	8.3
Livestock	9.2	15.8	72.2	21.2	42.1
Farm installations ^b	81.9	79.0	-3.6	-15.4	14.0
Machinery and equipment	90.3	115.2	27.6	16.1	9.9
Land reclamation and conservation, drainage, natural pasture, etc.	20.9	23.3	11.5	5.2	6.0
Afforestation	14.4	14.9	4.0	-7.1	12.0
Total investment in agriculture	236.4	268.3	13.5	1.2	12.2
Water projects	51.9	67.1	29.3	13.3	14.1
Total investment in agriculture and water projects	288.3	335.4	16.3	3.4	12.5

NOTE: Data on investment from agricultural output relate to the end of agricultural years; other data relate to the end of calendar years.

^a Revised figures.

^b Farm buildings, fish ponds, and local irrigation networks.

SOURCE: Central Bureau of Statistics.

The 16 percent growth in machinery and equipment investment followed a contraction in 1969/70 and chiefly reflected increased mechanization, although the proportion of replacement investment in the total stock of machinery and equipment has been rising rapidly, owing to the comparatively short economic life of these assets.

Investment in orchards has been drifting downward since the early 1960s. That in afforestation has been falling off since 1968, reflecting the steadily mounting general demand for labor and the consequent reduction of unemployment relief work in afforestation.

Outlays on structures were down more than 15 percent in real terms. This was the resultant of two conflicting trends: on the one hand, more was invested during the year on poultry runs following the rapid development of the branch; on the other hand, there was a sharp contraction in the case of local irrigation networks, following the exceptionally heavy investment in 1969/70, due mainly to the need to provide irrigation facilities to new settlements.

The real gross capital stock of agriculture increased a little faster in the year reviewed – 3.5 percent as against 2.7 percent in 1969/70. This continued the upswing in the growth rate which began that year.²¹

(b) *Financing*

Institutional farm credit, excluding that granted by the Jewish Agency, was up IL 228 million (19 percent) in 1971, compared with IL 174 million (17 percent) the year

Table X-11
GROSS STOCK OF FIXED ASSETS IN AGRICULTURE,^a 1970-71
(IL million)

	Value at current prices		Percent increase or decrease (–) in 1971		
	1970 ^b	1971	Value	Quantity	Price
Orchards	1,254.7	1,380.2	10.0	1.6	8.3
Farm installations ^c	2,135.3	2,553.8	19.6	4.9	14.0
Machinery and equipment	496.4	558.9	12.6	2.5	9.9
Livestock ^d	313.2	457.9	46.2	2.9	42.1
Total	4,199.6	4,950.5	17.9	3.5	13.9

NOTE: Rates of change have been calculated from unrounded figures.

^a Excluding land and financial assets. Data on investment from agricultural output (orchards and livestock) are for the end of agricultural years; other data are for the end of calendar years.

^b Revised figures.

^c Farm buildings, local irrigation networks and water projects, afforestation, land reclamation and conservation, drainage, natural pasture, etc.

^d Excluding broilers and fish.

SOURCE: Based on estimates of A.L. Gaathon (Bank of Israel) and Central Bureau of Statistics data.

21. See Bank of Israel, *Annual Report, 1970*, pp. 219-20.

before (see Table X-12). The banking system provided 46 percent of the additional credit, and financial institutions the balance.

Nearly all the incremental funds from the former source consisted of directed credit (IL 101 million). Part of the increase can be attributed to the expansion of output, but to some extent it also reflected improved financing terms. The most striking example of the latter is found in citriculture, which received much more directed credit in 1971. All of the additional financial institution credit came from concerns specializing in farm credits, in the main the Israel Bank of Agriculture and the Ya'ad Agricultural Development Bank; the amount of financing supplied by other institutions declined in 1970/71. The notable expansion (by 20 percent) of credit from the former group of institutions is explained by the growing number of settlements having recourse to short-term supervised credit, as well as the rapid implementation of the agricultural development program, which is being partly financed by a World Bank loan disbursed through these institutions.

Table X-12
OUTSTANDING INSTITUTIONAL CREDIT TO AGRICULTURE,^a 1970-71
(IL million)

	1970 ^b	1971	Increase	
			IL m.	%
Banking system				
Directed credit ^c	286.6	387.5	100.9	35.2
Nondirected credit ^d	246.7	251.0	4.3	1.7
Total bank credit	533.3	638.5	105.2	19.7
Financial institutions				
Agricultural credit funds ^e	635.8	762.0	126.2	19.8
Other financial institutions	16.9	13.4	-3.5	-20.7
Total financial institutional credit	652.7	775.4	122.7	18.8
Grand total	1,186.0	1,413.9	227.9	19.2

^a Excluding credit granted by the Jewish Agency.

^b Revised figures.

^c Including credit granted against Government deposits, which amounted to IL 23.8 million in 1970 and IL 38.5 million in 1971.

^d Including bill brokerage credit.

^e The overwhelming share of the credit under this head was granted by the Israel Bank of Agriculture, and a smaller part by the Ya'ad Agricultural Development Bank, Nir Ltd., and various funds and other financial institutions.