

CHAPTER XIII

AGRICULTURE

1. MAIN DEVELOPMENTS

A decline in the growth rates of agricultural output was evident in 1977/78, as compared both to 1976/77 and to the average for the period 1971/72 – 1975/76. Output and net product grew in 1977/78 by 4.1 percent and 6.8 percent, respectively, compared to 4.5 percent and 9.0 percent in 1976/77 and the overall average of 5.5 percent and 7.4 percent, respectively, for the period 1971/72 – 1975/76.

The causes of the decline in the rate of increase of both the output and product were those which had spurred the rapid growth of the agricultural sector in the early 1970s, over and above the growth in local demand. In the past, production in the livestock branches substituted for imports; the principal impulse for this came from the rise in world prices due to the world food crisis in the early 1970s. However, the expansion of world supply and the cumulative increase in domestically produced import substitutes perforce slowed the growth of the livestock branches in line with the trend of local demand. The crop farming branches grew at a rapid rate due to a much larger export of a variety of products, a trend that continued in 1977/78; the gain here, however, did not offset the deceleration in the livestock branches.

The income of farm owners from agriculture suffered a real drop (in terms of the Consumer Price Index) of about 7 percent, reversing the steady uptrend of recent years. This was connected primarily with developments in the livestock branches: as mentioned above, these branches were hurt by the decline in world meat prices, together with the government price and subsidy policy, which did not adjust to the rapid rate of inflation which prevailed in 1977/78. This policy greatly worsened the terms of trade of these branches.

The growth of direct agricultural exports accelerated this year: 12.6 percent in 1977/78, compared to 9.6 percent in 1976/77 and an average of 6.7 percent in the period 1971/72 – 1975/76. The main contribution to export growth came from flowers, as well as from industrial crops (cotton). On the other hand, the principal agricultural export branch, citrus fruits, shrank (in constant prices) for the second year in a row, mainly because of the scare caused by the poisoning of fruit in several European markets.

TABLE XIII-1
CURRENT ACCOUNT OF AGRICULTURE, 1976/77 AND 1977/78
 (IL million, at current prices)

	Value		Percent annual increase				
			Quantity		Price		
	1976/77 ^a	1977/78	Average 1971/72- 1975/76	1976/77 ^a	1977/78	1976/77 ^a	1977/78
1. Total output at producer prices	15,971.9	23,763.8	5.5	4.5	4.1	29.1	42.7
2. Agricultural intermediates	1,649.4	1,580.8	3.0	-3.1	0.4	32.5	37.0
3. Agricultural output at producer prices (1)-(2)	14,822.5	22,183.0	5.7	5.2	4.5	28.8	43.2
4. Purchased inputs	6,630.5	9,930.8	4.0	1.5	2.6	30.0	46.0
5. Agricultural product at producer prices (3)-(4)	8,192.0	12,252.2	7.3	4.1	6.1	29.2	40.9
6. Depreciation	1,128.7	1,829.5	5.9	4.1	2.3	29.4	58.5
7. Net agricultural product at producer prices (5)-(6)	7,063.3	10,422.7	7.4	8.9	6.8	28.7	38.2
			Percent increase in value				
			1976/77	1977/78			
8. Net agricultural product at producer prices	7,063.3	10,422.7	40.2	47.6			
9. Drought and war compensation	47.2	100.1	-0.7	112.1			
10. Total income from agriculture (8)+(9)	7,110.4	10,522.8	39.7	48.0			
11. Interest and rent	742.7	1,330.1	56.4	79.1			
12. Wages of hired labor	1,479.0	2,291.0	47.7	54.9			
13. Income of farm owners from agriculture (10)-(11)-(12)	4,888.8	6,901.7	35.3	41.2			

NOTE: The rates of change were calculated from unrounded figures.

^a Rounded figures.

SOURCE: Central Bureau of Statistics.

2. OUTPUT DESTINATIONS

The share of direct exports in total agricultural output continued to rise in 1977/78, reaching about 30 percent, compared to 27.0 percent in 1976/77 and some 22 percent in 1975/76. The biggest advance was made in noncitrus crops, which increased by about 28 percent (as against an increase of 12.6 percent in total agriculture exports), continuing the trend of recent years.

Production for domestic private consumption increased for the second year running, more rapidly than the population and the long-run trend. In contrast, the growth of industry-oriented production shrank because of the decline in citrus output in 1977/78 and the reduction of sugar production in Israel, which brought about a decline of about 65 percent in the sugar beet crop.

3. MAIN BRANCHES

A. LIVESTOCK

There was a dramatic worsening in the terms of trade¹ in 1977/78 in all livestock sub-branches with the exception of meat production. It is likely that there was also a worsening of profitability; the livestock branch was the principal cause of the real decline in the income of farm owners from agriculture. The worsening of the terms of trade here stemmed, to a large extent, from institutional arrangements (see below).

1. Meat Production

Meat production in Israel consists mainly of fowl (broilers and turkeys). Meat production declined by 1.5 percent in 1977/78. The average producer price rose in step with the prices of most inputs. Of all the livestock branches, the terms of trade are more vulnerable for poultry-meat, production of which is affected by fluctuations in the world market. When a worldwide meat shortage, accompanied by a rise in prices, developed in the early 1970s, meat production in Israel (especially fowl) increased, with strong government support. In 1975/76 large surpluses of fowl began to accumulate, while the profitability of its production declined. As a consequence of the glut on the domestic market, farmers began to export fowl in ever increasing amounts, especially broilers (whose export is not profitable for the economy). Towards the end of 1977/78 there was a change in meat production: a worldwide beef shortage developed, and its prices rose. This led to a greater demand for turkey meat, and export of turkeys from Israel to Europe became worthwhile: the export disposed of market surpluses, and also caused a rise in

¹ Prices of purchased inputs rose more than output prices.

TABLE XIII-2

TOTAL AGRICULTURAL OUTPUT BY ECONOMIC DESTINATION, 1976/77 AND 1977/78
(IL million, at current producer prices)

	Value		Percent annual increase				
			Quantity			Price	
	1976/77 ^a	1977/78	Average 1971/72- 1975/76	1976/77 ^a	1977/78	1976/77 ^a	1977/78
1. Direct domestic consumption	4,894.4	7,717.5	2.8	4.7	3.3	29.7	41.9
2. Industry	4,776.0	6,696.6	9.5	2.1	-0.6	26.6	41.1
3. Direct exports	4,316.0	7,087.1	6.7	9.6	12.6	41.4	45.8
4. Total output marketed (1)+(2)+(3)	13,986.4	20,961.2	5.9	5.2	4.8	35.2	43.0
5. On-farm consumption	459.2	648.1	2.2	1.3	-0.8	33.3	42.3
6. Capital goods	330.3	514.5	12.1	-5.0	0.3	37.7	55.8
7. Agricultural raw materials (intermediates)	1,149.4	1,580.8	3.0	-3.1	-0.9	32.5	37.0
8. Output retained on farms (5)+(6)+(7)	1,938.9	2,743.4	3.8	-2.4	-0.7	32.8	41.4
9. crops destroyed	46.6	59.2	-	58.6	-3.9	52.2	32.1
10. Grand total (4)+(8)+(9)	15,971.9	23,763.8	5.5	4.5	4.1	29.1	42.7

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

^a Revised figures.

SOURCE: Central Bureau of Statistics.

TABLE XIII-3

MARKETED AGRICULTURAL OUTPUT BY ECONOMIC DESTINATION, 1976/77 AND 1977/78
(IL million, at current producer prices)

	Value		Percent annual increase			
			Quantity		Price	
	1976/77 ^a	1977/78	1976/77 ^a	1977/78	1976/77 ^a	1977/78
	(IL. million)		(percent)		(percent)	
Crops						
1. Direct domestic consumption	2,305.6	3,534.3	-1.3	6.3	37.6	44.3
2. Industry	1,916.3	2,816.2	12.8	1.1	28.7	45.1
3. Direct export	3,996.6	6,618.9	8.3	12.3	24.3	47.4
4. Total output marketed :						
(1)+(2)+(3)	8,218.5	12,969.4	6.5	8.0	31.4	46.1
Livestock						
5. Direct domestic consumption and industry	5,448.5	7,528.6	2.6	-0.6	24.1	39.0
6. Direct export	319.4	468.2	30.1	15.8	25.6	36.6
7. Total output marketed						
(5)+(6)	5,767.9	7,996.8	3.8	0.3	28.9	38.2
8. Total agricultural output marketed (4)+(7)	13,986.4	20,966.2	5.3	4.8	28.3	43.0

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

^a Revised figures.

SOURCE: Central Bureau of Statistics.

domestic prices. Broilers are a poorer substitute for beef than turkeys, so the beef shortage did not affect them as much as it did turkey production. Thus the price of turkeys rose by about 50 percent in 1977/78, while the price of broilers rose by only about 37 percent. This in itself should have increased the profitability of turkeys and broilers, but its influence on the latter was offset in part by price policy in the branch. The price of broilers to the consumer is regulated and subsidized, and marketing is organized through a number of slaughterhouses. The deficiency price paid to farmers is calculated according to a basket of inputs whose prices are updated with a lag; therefore, in a period of rapid inflation, this arrangement worsens the terms of trade of the branch and lowers its profitability. This is reflected in a decline of the share of the subsidy in the consumer price, which rose less than the price of the inputs.

2. Dairy Farming

Total milk production in 1977/78 was similar to that of the previous year. The price of (cows') milk rose by about 26 percent, in contrast to a rise of more than 40 percent in most of the inputs to the subbranch. The reason for this worsening in the terms of trade lay, as already stated, in the deficiency price arrangements.

In addition to the lag in price adjustment, the input basket according to which the deficiency price payment is calculated was updated in 1977/78. Because of technological advances in this subbranch the new basket imputes less input per unit of output. This brought about a decline in real support per unit of output. The effect of the lag in determining the deficiency price payment and the change in the basket caused a relatively small rise in the producer price.

3. Egg Production

The production of eggs for the table increased quantitatively by 5.6 percent in 1977/78, while the producer price rose about 29 percent. There was a worsening in the terms of trade, here too a result of the aforementioned arrangements.

Despite the decline in profitability, real output of eggs rose. The export of surplus eggs, which is unprofitable for the economy, continued and even increased during the year. It is possible that the growth in production stems from the fact that on some farms the labor input in this subbranch consists partly of marginal workers (housewives, children, etc.), so that production is worthwhile despite the decline in profitability.

B. CROPS

The central development in crop farming in 1977/78, as in previous years, was the rapid expansion of production for export, despite the slight retreat in the sale of citrus fruits, which created a structural change among the subbranches. Leading the advance were flowers and cotton. Exports of flowers grew by about 73 percent in 1977/78, following an increase of some 58 percent in 1976/77 and a 23 percent average in 1971/72

TABLE XIII-4

DIRECT AGRICULTURAL EXPORT^a, 1976/77 AND 1977/78
(IL million, at current producer prices)

	Value		Percent annual increase				
			Quantity		Price		
	1976/77 ^b	1977/78	Average 1971/72- 1975/76 ^b	1976/77 ^b	1977/78	1976/77 ^b	1977/78
Field and industrial crops	1,000.0	1,829.5	20.4	16.3	25.4	28.3	45.9
Vegetables, potatoes, melons	376.8	591.6	7.3	9.2	12.9	47.3	39.1
Noncitrus fruit	300.5	518.7	18.7	13.6	5.9	27.7	63.0
Flowers, seedlings, ornamental plants, vegetable seeds	346.8	777.3	23.4	58.3	71.4	20.8	30.8
Total crops, excl. citrus	2,024.1	3,717.1		20.5	28.1	30.0	43.4
Citrus	1,972.5	2,901.8	2.1	-1.8	-3.8	28.5	47.1
Total crops	3,996.6	6,618.9	4.8	8.3	12.3	24.3	47.4
Eggs and chicks	176.4	238.8	9.4	16.4	19.2	23.1	13.5
Meat	77.5	132.8	33.4	30.2	15.7	23.2	48.0
Fish	18.6	37.4	77.4	61.8	43.5	29.2	40.1
Misc. livestock ^c	46.9	59.2	3.7	22.5	-7.9	39.6	37.0
Total livestock branches	319.4	468.2	6.2	30.1	15.8	25.6	26.6
Total agricultural exports	4,316.0	7,087.1	6.7	9.6	12.6	29.0	45.8

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

a Includes exports to administered areas.

b Revised figures.

c Including honey, export of livestock, wool, fur animals, etc.

SOURCE: Central Bureau of Statistics.

TABLE XIII-5
 CURRENT AGRICULTURAL OUTPUT^a BY TYPE OF FARMING, 1976/77 AND 1977/78
 (IL million, at current producer prices)

	Value		Percent annual increase or (-) decrease			
			Quantity		Price	
	1976/77 ^b	1977/78	1976/77 ^b	1977/78	1976/77 ^b	1977/78
Crops	9,190.3	14,340.4	5.5	7.2	31.6	45.5
Field crops	3,019.4	4,482.1	9.9	3.0	28.2	44.1
Vegetables, potatoes and melons	1,589.9	2,428.6	3.7	11.9	35.0	36.7
Citrus	2,375.6	3,561.0	0.0	-3.8	28.1	55.8
Other fruits	1,712.8	2,866.3	-1.0	12.5	43.0	67.4
Flowers, ornamental plants, and misc.	492.6	1,002.4	52.7	52.7	24.0	33.3
Livestock and their products	6,465.8	8,908.9	2.5	0.0	25.2	37.8
Meat	2,897.2	4,234.9	4.6	-1.5	22.3	48.6
Milk	1,872.4	2,362.9	3.5	-0.5	31.8	26.9
Eggs and chicks	1,248.1	1,648.7	1.3	4.3	21.9	26.8
Fish	283.7	430.0	1.0	0.3	27.3	51.1
Miscellaneous	165.4	232.6	16.4	1.9	28.5	43.3
Total	15,656.1	23,249.3	4.2	4.2	28.9	42.5

a Excluding capital goods.

b Revised figures.

SOURCE: Central Bureau of Statistics.

—1975/76. Despite the rapid growth, there was no drop in the prices fetched abroad in 1977/78. Nevertheless, there was a slight rise in producer prices this year (about 31 percent). Part of this small rise may be attributed to the larger quantity of flowers destroyed due to marketing considerations. This small rise in the producer price (which represents a drop in real terms) may suggest the beginning of difficulties which will become more pronounced next year. It is important to note that this decline in the real price was not reflected in the behavior of the producers; they increased their investments (and output) in the flower branch by a significant amount in 1978/79.² The growth in export has been accompanied by the direction of most agricultural investment in recent years to export branches, especially flowers and fruit.

Citrus output was down 3.8 percent this year, due partly to the adaptation of the branch to a lower profitability compared with other crops, especially subtropical fruit; citrus exports shrank to a similar extent, mainly because of the scare caused by the poisoning of fruit in several European markets.

4. FACTORS OF PRODUCTION

The labor input (in terms of hours) increased by 5.4 percent in 1977/78 and the capital stock by 4.7 percent. The gross product grew by 6.1 percent, while productivity rose by less than 1 percent.³ This productivity gain is very low compared to the rates recorded in the past: an average of close to 7 percent a year between 1971/72 and 1976/77. The decline in productivity can be ascribed partly to the relatively low growth of the product, and principally to the large growth of the labor input (close to 6 percent), after a persistent downward trend lasting more than 10 years. The extra labor input resulted from a decrease in the number of Jewish wage-earners, and an increase in the number of non-wage-earners. The number of Arab workers also increased. Among all categories there was an appreciable rise in the number of hours worked per week. It is difficult to relate the increase in labor input to any known developments in the sector.

It is important to note that data on the rise in farm employment and calculations of productivity based on them show the same pattern as for the entire business sector, and as with the other branches of the business sector there is no satisfactory explanation of

² The Central Bureau of Statistics changed its method of calculating flower export prices in 1977/78. This reduces the magnitude of the price change in the two preceding years in comparison to earlier estimates.

³ Productivity is calculated according to the average weights of capital and labor for the years 1969/70—1971/72.

TABLE XIII-6

INPUT OF MATERIALS AND SERVICES IN AGRICULTURE^a, 1976/77 AND 1977/78
(IL million)

	Value		Percent annual increase			
			Quantity		Price	
	1976/77 ^b	1977/78	1976/77 ^b	1977/78	1976/77 ^b	1977/78
Feed	3,010.2	4,240.7	1.7	0.0	33.8	40.9
Water	553.2	904.9	-5.7	3.2	26.4	58.5
Packing materials	589.2	818.5	4.4	4.6	25.9	32.8
Fertilizers	260.3	400.2	2.9	4.9	20.3	46.6
Transportation	448.2	730.9	2.1	0.1	33.0	62.9
Spare parts, repairs, tools	257.7	392.8	-14.5	-2.1	25.5	55.7
Fuel, lubricants, electricity	349.7	600.2	6.9	10.5	19.1	55.3
Pesticides and veterinary preparations	505.2	931.3	4.9	13.4	12.8	62.6
Insurance and government services	380.1	558.0	4.7	0.8	30.2	45.6
Miscellaneous	276.7	353.3	12.5	3.7	45.6	23.1
Total purchases from other sectors	6,630.5	9,930.8	1.5	2.6	30.0	46.0
Wages of hired labor	1,479.0	2,291.0				
Interest and rent	742.7	1,330.1				
Intermediate goods	1,149.4	1,580.8	-3.1	-0.9	32.5	37.0
Depreciation	1,128.7	1,829.5	4.1	2.3	29.4	58.5
Grand total	11,144.8	16,962.2				

^a Excluding labor and capital of farm owners.

^b Revised figures.

SOURCE: Central Bureau of Statistics.

TABLE XIII-7

AGRICULTURAL OUTPUT, SUBSIDIES, 1976/77 AND 1977/78
(IL million, at current prices)

	Value		Subsidies as a Percent of producer prices ^a		
	1976/77 ^b	1972/78	Average 1970/71- 1975/76	1976/77	1977/78
Eggs	257.3	326.7	15.5	22.1	19.8
Poultry	510.0	558.2	9.6	25.2	19.1
Milk	764.6	1,023.7	31.4	40.8	43.3
Other livestock	6.6	—	1.4	0.8	0.0
Total livestock	1,556.5	1,908.6	14.1	24.1	21.4
Total crops	101.2	149.6	1.2	1.1	1.0
Total output subsidies	1,657.7	2,058.2	6.7	10.6	8.8

^a The value of the subsidy divided by the total output of the branch.

^b Revised figures.

SOURCE: Ministry of Agriculture.

this phenomenon. It is possible that there is an error in the estimate of the labor input of farm owners; this shows an increase this year, but the statistical reliability of the figure is lower. A number of factors may explain some of the decline in productivity: the aforementioned structural change in the sector could cause unemployment of physical capital and manpower in the livestock branches, so that their growth does not actually represent any increase in their services to the sector. In addition to this, many investments in crop farming have not yet begun to yield results (subtropical and deciduous fruit for export), but already require an input of labor. It is reasonable to assume that these investments have grown in recent years in light of the growth in their profitability.