

**Table 1.22**  
**Mixed Industries: Production, Exports, Domestic Sales, and Labor Input, 2003**

	(rate of change, percent)						
	Share in manufacturing product (%)	Production	Real increase in exports	Share of domestic sales	Production for domestic market	Hours worked	Capital stock
<b>Mixed manufacturing</b>	<b>34.2</b>	<b>3.5</b>	<b>5.9</b>	<b>54.0</b>	<b>1.5</b>	<b>-0.7</b>	<b>3.4</b>
Chemicals and oil	13.3	5.6	4.2	59.2	6.6	4.3	1.0
Transport equipment	6.3	3.0	5.1	26.1	-2.8	-8.8	-1.6
Plastics and rubber	6.9	6.3	16.7	60.8	-0.4	7.0	3.3
Machines and equipment	3.4	-2.8	1.2	65.5	-4.9	-6.4	3.7
Mining and quarrying	2.7	-2.9	36.4	48.6	-36.5	-3.5	14.6
Jewelry & objets d'art	0.6	-7.0	-11.6	8.8	39.8	0.0	-2.8
Miscellaneous	0.9	11.3	16.3	63.8	8.4	-6.9	-2.8

SOURCE: Based on Central Bureau of Statistics data.

### 3. Agriculture<sup>22</sup>

2003 was a bad year for both agriculture and farmers. The industry's product plummeted by some 11 percent (Table 1.23), while exports rose; agricultural output declined by 4.1 percent, the industry's share of business-sector product fell to 2.3 percent, and employment in it dipped by 2.4 percent.

Exports rose in volume terms by 8.4 percent in 2003. Most agricultural exports consist of field crops, which are naturally subject to wide fluctuations. In 2003, however, most of the increase in exports was due to local-currency depreciation against the euro, improving export terms to the eurozone, the destination of most agricultural exports. This went counter to the long-term decline in citrus exports, which intensified in 2003 due to the intensive uprooting of orchards. The latter trend is intensifying for various reasons—higher alternative yield on land in the Sharon region, the rise in the price of water, and the decline in prices.

In contrast with the long-term trend, agriculture's 'terms of trade' improved in 2003 (Figure 1.16). The price of agricultural input rose by less than that of its output, due to local-currency depreciation against the euro. The price of agricultural input rose mainly because of the marked increase in the price of water for farming; capital input was up by 0.3 percent.

As regards the composition of employment, the long-term upward trend in the share of foreign workers in agriculture persisted, and reached 38 percent—23,300 workers—while the proportion of Israelis declined. The share of self-employed farmers dipped slightly, while the number of Israelis employed fell by 8 percent and their share

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<sup>22</sup> The figures for agricultural product are based on a preliminary estimate; the industry's actual product may be very different.

**Table 1.23**  
**Indicators of Agricultural Activity,<sup>a</sup> 1987–2003**

(annual rates of change, percent)

	Average				1996	1997	1998	1999	2000	2001	2002	2003
	1987–90	1991–94	1995–98	1999–2001								
<b>Output</b>												
Total output <sup>b</sup>	3.2	1.9	4.0	1.9	5.0	-1.0	2.7	-1.7	4.4	3.1	4.5	-4.1
Inputs	0.2	1.5	0.2	0.5	0.5	-1.9	-3.1	-0.1	1.5	0.0	-0.5	1.8
Gross product (excl. forestry)	6.6	2.3	8.6	3.6	10.3	0.1	10.1	-3.4	7.7	7.0	10.2	-11.2
Total farm real income <sup>c</sup>	-3.5	-0.4	0.7	-2.5	-4.8	-3.6	17.2	-15.1	-5.3	15.4	-7.5	-6.5
Real income from capital and own labor		-4.3	-4.2	-6.5	-17.8	-13.7	39.4	-30.4	-17.2	41.5	-19.1	-16.4
<b>Factor inputs</b>												
Labor	-4.6	4.0	2.8	-3.1	-0.4	2.8	4.8	5.2	-3.0	-11.0	-2.4	0.7
Gross capital stock <sup>d</sup>	-1.6	-3.6	-1.0	0.4	-0.6	-0.3	-0.3	0.5	0.4	0.4	0.9	0.3
Capital/labor ratio	3.1	-7.3	-3.7	3.7	-0.2	-3.0	-4.9	-4.5	3.5	12.8	3.3	-0.4
<b>Productivity</b>												
Labor productivity	11.7	-1.7	5.6	7.0	10.7	-2.7	5.0	-8.2	11.0	20.2	12.8	-11.9
Total productivity <sup>e</sup>	10.3	1.4	7.2	5.4	10.8	-1.4	7.2	-6.5	9.5	14.2	11.3	-11.7
<b>Total exports<sup>f</sup></b>												
Citrus	-4.6	-12.5	3.6	-17.4	-5.5	3.5	-13.7	-15.5	-21.4	-15.0	-30.4	5.7
Other	-1.6	11.9	16.2	-1.2	22.7	9.8	12.6	5.1	0.5	-8.7	-6.0	8.6
<b>Prices</b>												
Output	11.0	8.1	4.9	0.8	7.3	5.5	5.5	1.5	-2.8	3.9	-2.0	7.4
Purchased imports	14.4	9.0	7.4	4.0	17.1	4.7	0.4	6.6	4.4	1.2	6.6	6.2
Terms of trade <sup>g</sup>	-3.1	-0.8	-2.4	-3.1	-8.3	0.8	5.1	-4.8	-6.9	2.7	-8.1	1.1

<sup>a</sup> See notes to appendix tables for agriculture.

<sup>b</sup> Calculated at producer prices (including price subsidies).

<sup>c</sup> At constant prices, adjusted by the CPI.

<sup>d</sup> At constant prices at the beginning of the year. Based on Central Bureau of Statistics investment data.

<sup>e</sup> Weighted by capital and labor at average ratio of 59 percent labor and 41 percent capital.

<sup>f</sup> Based on data of exports in dollar terms at fixed 1993 prices, excluding exports to Judea, Samaria and Gaza. Sources: Foreign Trade Department and Central Bureau of Statistics. Differences between data in this table and data on production for export in the Appendix table derive from differences in definitions and methods.

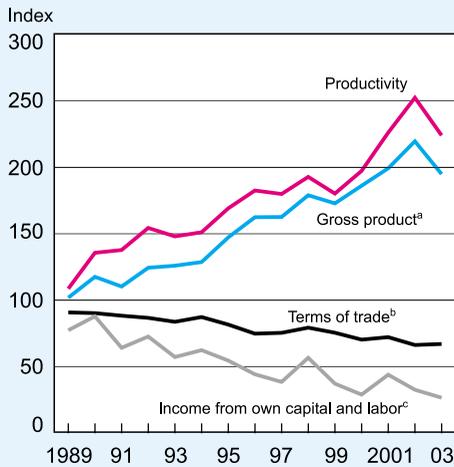
<sup>g</sup> Output/input ratio.

SOURCE: Based on Central Bureau of Statistics data.

plummeted (Figure 1.17). The downward trend in the number of self-employed farmers continued in the wake of the structural and social changes that have been taking place in the farming community for many years, low return on capital, and trend towards large farms which enjoy economies of scale.

According to Ministry of Industry and Trade figures, the average number of permits for foreign workers in agriculture remained the same in 2003 as in 2002, averaging 28,000. The cost of employing foreign workers was increased in 2003 by the imposition

**Figure 1.16**  
Agriculture, Selected Indices,  
1989–2003



<sup>a</sup> Gross agricultural product at constant prices.  
<sup>b</sup> Output/input prices.  
<sup>c</sup> Income from own capital and labor excluding compensation and subsidies, deflated by CPI.

SOURCE: Based on Central Bureau of Statistics data.

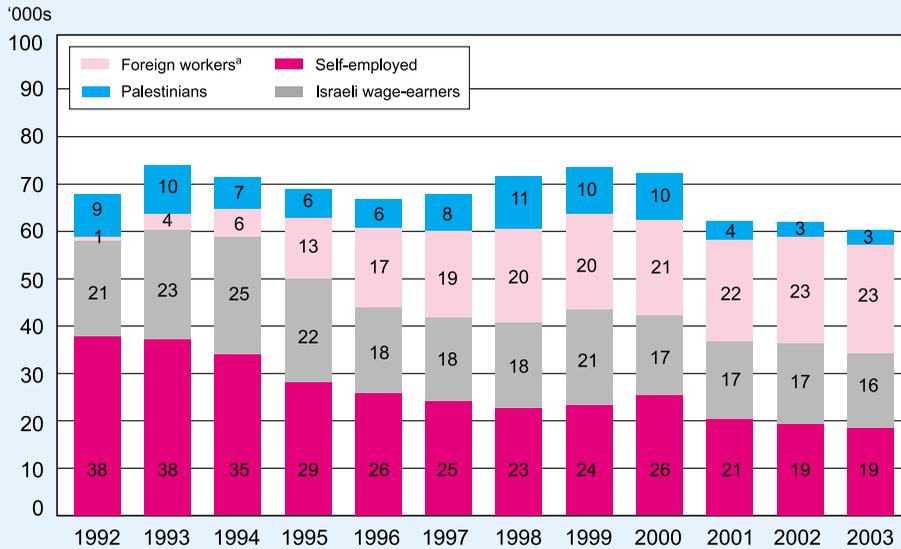
of an annual ‘request impost’ and ‘employment fee,’ each amounting to NIS 1,000 per worker. Note, however, that the annual employment fee for a foreign worker in agriculture is only one quarter of the cost in the construction industry.

The real wage of persons employed in agriculture fell by 1.2 percent. The real wage of Israelis dipped by 1.8 percent—less than in the business sector, possibly because it was low from the outset—while that of foreign workers remained virtually unchanged.

There has been hardly any change in gross capital stock in agriculture since 1996, and this remained the case in 2003. Gross investment was equivalent to scrap, so that the ‘capital consumption’ evident in the industry since 1986 has been arrested.

The long-term increase in the share of foreign workers in total employment in agriculture continued, while the share of Israelis declined.

**Figure 1.17**  
Employment in Agriculture in Israel, by Group, 1992–2003



<sup>a</sup> In 2003 the CBS updated the figure for foreign workers, also retroactively.

SOURCE: Based on Central Bureau of Statistics data.

Income per self-employed farmer, which is not high, declined by 14 percent in real terms. The erosion of profitability in agriculture caused a clear shift to market niches.

Income per self-employed farmer, which is not high, fell in real terms by some 14 percent (Figure 1.18). Because of the erosion of profitability in agriculture, there is a growing trend towards 'niche' farming. Thus, for example, cultivation of tropical fish and aromatic herbs has increased, as has production of goats' cheese and organic produce. The area given over to organic farming has risen substantially in the last few years, and now accounts for 1.7 percent of all cultivated farmland. In 2002 the organic market accounted for 1.5 percent of all food sales in Europe. The output of organic produce in Israel was NIS 190 million in 2002, i.e., 1.5 percent of all output, some 90 percent of it for export.

In contrast with other industries, but in common with the rest of the world, there is a high level of government involvement in agriculture.

#### *The government's involvement in agriculture*

In contrast with other industries but in common with the rest of the world, the government's activity in agriculture is characterized by a high level of involvement. This can be divided into two main categories: direct—generally evident in the budget—and indirect, incurring hidden costs to the economy.

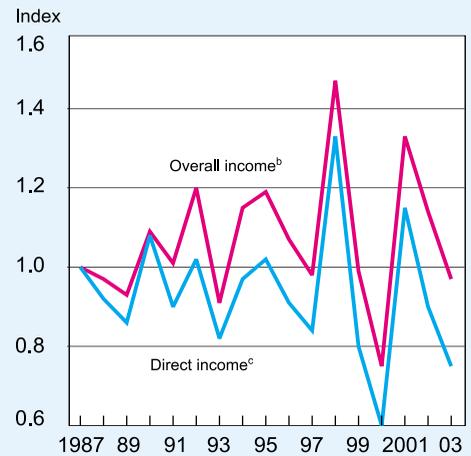
The characteristics of the government's involvement in agriculture are as follows:

1. *Opening the industry to imports:* Israel's import tariff on fresh agricultural produce is 15 percent of accepted production costs—so that it is impossible to import fresh produce. In addition, restrictions intended to protect Israel's flora and fauna are imposed on imports.
2. *Zero V.A.T. on fresh fruit and vegetables:* on the basis of data from the State Revenue Authority, we estimate that in 2002 this benefit amounted to NIS 1.5 billion.<sup>23</sup> Note that in Europe the V.A.T. on fresh fruit and vegetables is generally low, but not less than 5 percent.
3. *Unification of production councils and reduction of fees:* at the beginning of 2004 four field crop production councils (for vegetables, fruit, flowers, and citrus fruit) were unified. This is expected to reduce the fees growers pay the councils.<sup>24</sup>
4. *Reduction of milk monopoly:* a public committee has been set up to examine consumer prices of milk, and to recommend the best supervisory method.

<sup>23</sup> The estimate does not refer to the additional revenue that would be received if the exemption were to be cancelled. This estimate will be less than the exemption for reasons connected with the collection of revenues and because the rise in prices to the consumer will reduce the demand for agricultural produce.

<sup>24</sup> See the equivalent section in Bank of Israel, *Annual Report 2002*.

**Figure 1.18**  
**Real Income per Independent Farmer,<sup>a</sup> 1987–2003**



<sup>a</sup> Index of real income, 1987 = 1.

<sup>b</sup> Including compensation and subsidies.

<sup>c</sup> Excluding compensation and subsidies.

SOURCE: Based on Central Bureau of Statistics data.

5. *Business training*: in line with the activity of the Ministry of Industry and Trade in the framework of the Small Business Authority, the Ministry of Agriculture extends business assistance to farmers. This is done via an outside firm, which chooses the business consultant most suited to the farmer, and the two sign a consultancy agreement. The Ministry of Agriculture bears 75 percent of the cost of the consultancy, within the framework of an overall budget of NIS 1 million.

6. *Subsidies*: subsidies for agricultural output rose by 7 percent<sup>25</sup> in 2003, to approximately 2.4 percent of its value.<sup>26</sup> This is due to the increase in the subsidy for water, which incorporates compensation to farmers for the reduction of water quotas. According to the National Budget, the subsidy comprises direct subsidies and transfer payments but does not include the subsidy implicit in the unrealistic price of water for agriculture. The Ministry of Agriculture also extends subsidies for public goods which have a positive external effect, such as meadows, eradication of pests, marketing campaigns abroad, etc. In addition, the Ministry extends aid in the form of compensation for natural disasters, as is customary throughout the world.

#### **Box 1.4**

#### **Agriculture and the Preservation of Open Spaces**

Agriculture benefits society beyond its intrinsic value to the farmer. Consequently, the extent of agricultural activity due solely to market forces could fall below that which is beneficial to society at large. In some cases, therefore, there is some justification for government intervention in order to maintain the extent of farm activity. One example of this is the potential contribution of agriculture to the preservation of open spaces.

Farmland constitutes 27 percent of Israel's open spaces, and some 56 percent of the open spaces north of the Negev.<sup>1</sup> These areas are extremely important for various reasons—protection of nature and the landscape, preservation of open spaces for recreation, penetration of rainwater into the aquifers, etc. Government intervention is necessary in order to preserve the open spaces because market forces do not fully internalize these considerations, leading to the neglect of the spaces or their over-use for

<sup>1</sup> These data, as well as the estimates which follow, are taken or calculated from the 'Document of Policy and Instruments for Preserving Open Spaces,' published (in Hebrew) under the auspices of the Ministry for the Environment, the Ministry of the Interior, the Ministry of Finance, and other entities (available at: [www.environment.gov.il](http://www.environment.gov.il) and [www.ios.org.il](http://www.ios.org.il)).

<sup>25</sup> According to preliminary data only; the subsidies may be larger.

<sup>26</sup> Excluding capital cost subsidies against agriculture's share in the water system, as well as the subsidy implicit in protecting domestic produce against competing imports, although this component has contracted at the margin.

construction and development. The significance of open spaces is particularly great in a small, crowded country such as Israel, especially north of the Negev.<sup>2</sup>

In the last few years there has been tangible erosion of open spaces.<sup>3</sup> In only four years (1997–2000) the designation of 1.5 percent of the open space north of the Negev was changed for construction and development purposes.<sup>4</sup> In addition, large segments of farmland, particularly in the central region, are neglected and left untended, even without having their function redefined. According to one estimate, some 17.5 percent of total farmland is currently untended. This land, especially if it is close to residential or business areas, is exposed to unauthorized use for inappropriate purposes, and could become a blight on the landscape. Development pressures, on the one hand, and the difficulties of the farm community, on the other, embody the threat of further damage to open spaces in the future.

In the light of all this, farmers could be given incentives to preserve open spaces. However, a distinction should be made between the two kinds of threats to these areas: changing the designation to enable construction, on the one hand, and ceasing to cultivate land although its function has not been changed, on the other. Incentives to farmers will not serve to protect agriculture and open spaces from a change in designation, because the pecuniary benefit from releasing land for construction and development—especially in high-demand areas—outstrips the value of agricultural production, even with generous government subsidization, as is evinced by the pressure to release fertile farmland in the central region. The extent of land released should be restricted by government policy that aims at using open spaces wisely, in terms of planning policy that restricts the use of land reserves for land-intensive construction and development (such as low-rise housing, the establishment of new settlements, and the development of large business and sales centers outside the cities), as well as via economic incentives aimed at reducing the demand for these uses, e.g., by increasing taxes on low-rise housing and granting incentives (to local authorities) for

<sup>2</sup> Awareness of the importance of open spaces is expressed *inter alia* in the national masterplans, the plan for Israel 2020, and the policy document mentioned above.

<sup>3</sup> The extensive change in designation of recent years does not attest *per se* to the wasteful use of open spaces. Thus, for example, some of it may be a one-off increase for infrastructure purposes, which will not recur in the future. The issue of whether the land area whose purpose was reclassified has been used efficiently is not addressed here.

<sup>4</sup> In 1991–96, too, extensive farmland area was released, but it is not known how much of it was redesignated for construction and development and how much remained open space. In 1997–2000 the area redesignated for construction and development accounted for about half the redefined farmland. Notwithstanding, redesignation for construction and development purposes does not necessarily mean that construction work was in fact approved and/or implemented.

the construction of high-rise housing. The justification for intervention of this kind is that individuals and developers who benefit from land-intensive uses do not internalize the full extent of the damage incurred by society through the reduction of open spaces and restriction of farming.

While these measures are required in order to curb the extent to which the land-use designation of open spaces is changed, incentives for farmers should be deployed as a supplementary procedure which will focus on preventing the neglect of farmland whose purpose has not been changed.

A recent policy document (see note 1) proposes *inter alia* that subsidies be given for the cultivation of farmland, and that fines be imposed on failure to do so. Resorting to both positive and negative incentives will increase the efficiency of the incentive, given the budget limitations. The document even describes steps taken elsewhere to encourage cultivation of farmland.

It is important to use such incentives wisely so that they can achieve their aim at a reasonable cost. First, the incentive should be limited to the cultivation of open farmland, since the objective is to preserve open spaces and the landscape. Hence, the incentive should be restricted to field crops, orchards, etc., and not extended to agricultural activity that damages the landscape (e.g., greenhouses, chicken-coops, and cow-sheds). Second, since the purpose is to cultivate as large an area as possible (in those regions marked as suitable), it is necessary to give the subsidy in accordance with the land area cultivated rather than for inputs or other factors of production. For example, the subsidy should not take the form of a lower price for water, as this would encourage cultivation of water-intensive crops whereas the idea is to encourage the cultivation of land-intensive crops. Third, the incentive should be focused on areas which would probably not be cultivated without a subsidy and on those where agricultural activity is particularly important in order to preserve open spaces, e.g., those whose location would enable the preservation of a continuous open area or an uncultivated area adjacent to a built-up one. Note that in some cases part of the functions of open spaces are also achieved by uncultivated ones. Budgetary limitations will make it necessary to find the correct balance between the generosity of the incentive per dunam of land and the extent of area to which incentives may be applied.

#### **4. The infrastructure: transport, communications, energy, and water**

The infrastructure industries are essential for economic activity and growth because they serve to connect economic units with one another—e.g., outlying regions with centers of employment—and with abroad, and also because economic activity depends on the provision of such vital services as electricity, water, sewage services, transport, and communications.