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**Landbruget i Tyrkiet  
Die Landwirtschaft in Türkei  
Farming in Turkey  
L'agriculture en Turquie  
L'agricoltura in Turchia  
De landbouw in Turkije**

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## TURKEY

### INTRODUCTION

In economic terms, Turkey is counted as one of the relatively more advanced developing countries. Although the standard of living has risen rapidly, it is still lower than that of the European countries in the Mediterranean area.

Turkey, like most developing countries, has for many years given priority to industrialization since 1972, the government has also accorded a high priority to the development of agriculture, a policy which is in line with the recommendations of the 'World Development Report' of 1978 and 1979. The political and social unrest in rural areas may well have been a contributory factor in this new development.

Agriculture is Turkey's most important single industry; it accounts for 60% of the country's exports and 23% of GDP (down from 38% in 1963) and provides employment for more than 50% of the working population.

Productivity in the non-agricultural sectors is five times greater on average than in the agricultural sector.

Turkey's exports consist chiefly of agricultural products (tobacco, cotton, hazelnuts) and industrial products processed from (textiles, agricultural products, food stuffs). Tobacco, cotton, nuts and semi-tropical fruits together account for some 60% of export earnings. According to the Turkish Ministry of Agriculture, there has been a decline in Turkish exports to the Community in recent years. In 1973 the EEC countries' share of all agricultural exports from Turkey was 51.3%, in 1974 48% and in 1975 42%. The Turkish government is therefore pressing for more long-term concessions from the Community.

Imports, which in recent years have far outstripped exports - leading to serious balance-of-payments difficulties - consist primarily of industrial products (machinery, machine components, chemical products), although fuel imports are accounting for an increasingly large proportion. This category also includes products which are becoming increasingly important as inputs for agriculture: tractors and other agricultural implements, artificial fertilizers, pesticides and, of course, petrol.

In terms of gross value agricultural production is made up of roughly one-third animal products (beef and veal, milk) and two-thirds vegetable products. Important products belonging to the latter group include cotton, tobacco, vegetables, fruit and nuts but the most important product, without a doubt, is wheat.

The working population employed in agriculture numbered 8.7 millions in 1976, in other words more than the total working agricultural population of the entire European Community (8.6 millions in 1976).

Illiteracy is still widespread, although it is clearly on the decline; in 1965 51% of the population over 5 years of age was illiterate, in 1975 38%. Women, as a group, are more backward: twice as many men can read and write.



## I. DISTRIBUTION OF INCOME

Income distribution in Turkey, in common with that of other medium sized countries such as Mexico and Brazil, is among the most uneven in the world. This applies in particular to the agricultural sector. 10% of agricultural holdings account for more than 43% of total agricultural earnings. 20% of agricultural holdings together account for only 2.7% of the total agricultural earnings, in other words, less than TL 4000 (around 240 \$ per holding), while 20% of all households earn only 3.5% of the total income.

The inequality is more pronounced among wheat producers than tea and hazelnut producers and is less significant for stock-breeders than crop-farmers.

Incomes in the non-agricultural sectors are, on average, five times higher than in the agricultural sector. In fact, this situation became worse between the years 1963/65 and 1973/75, when incomes rose by 17% more in real terms in the non-agricultural sectors.

Productivity (gross value of production per unit of crop land) increased by a mere 16% between 1963 and 1975 (an annual rate of 1.5%).

## II. THE FOURTH FIVE-YEAR PLAN

The Fourth Five-Year Plan, covering the period 1979-1983, was approved by the Parliament in November 1978. The plan is mandatory for the public sector and indicative for the private sector. Its forecasts are somewhat optimistic: the plan assumes an average annual growth rate

of 8.2% (6.7% in 1979; 7.1% in 1980 and a higher percentage in the subsequent years). This optimism is not shared by the World Bank. It forecasts a 3 per cent growth in GNP for 1979 and even then, only if certain conditions are fulfilled.

In 1975 and 1976, Turkey did in fact achieve growth rates of 7.9% and 7.2% respectively. However, growth during the third Five-Year Plan (1973-1977) fell well short of the 8.1% forecast. Although the target for 1977 was an 8.2% growth rate the actual outturn was only 5%.

Certain objectives of the fourth Five-Year Plan are directed in particular at institutional problems:

- re-organization of government machinery by reducing bureaucracy and over-manning, and simplification of procedures by encouraging coordination;
- further development of the cooperative movement and cutting out of intermediaries, particularly credit suppliers;
- improving facilities in rural areas in order to check the drift away from the land.

### III. LAND

#### 3.1 Natural environment

Turkey covers a large area (78 million hectares) and has a rapidly growing population of 43 millions. This represents a population density of 55 per km<sup>2</sup>, which seems quite low, especially compared with the population density for the EEC (170 per km<sup>2</sup>). In order to evaluate land availability realistically, however, the following four, more or less connected aspects of the natural environment must be taken into account:

- Height above sea-level: three-quarters of Turkey's land area lies more than 1000 metres above sea-level and nearly a quarter is more than 1500 metres above sea-level. There are no lowland plains as such except in some coastal areas;
- Gradient: the landscape is dominated by steep gradients. Studies have shown that only 16% of the total land area has a gradient of less than 8% (that is to say moderately sloping, gently sloping or flat)<sup>1</sup>;

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<sup>1</sup> H. Oakes, 'The soils of Turkey' (Ankara, Ministry of Agriculture, Soil Conservation and Farm Irrigation Division, 1957).

- Climate: there are considerable variations in climate across the country, from humid to semi-desert. Rainfall varies from 2500 mm east of the Black Sea coast to 250 mm in Central Anatolia. This latter region has a semi-continental climate with short, hot, dry summers and cold, severe winters. This kind of climate limits the growing season quite considerably and, because of the shortage of water, restricts production to a few products;
- Soil quality: good quality soil, that is to say soil that is easy to work and rich in organic and inorganic nutrients, is rare in Turkey. This is partly due to natural circumstances, and partly to the primitive cultivation of the soil over many years.

These factors combined mean that in fact not more than 20% of the land surface is physically suitable for agriculture although this does not mean that only this proportion of land is actually farmed.

### 3.2 Land use

As a result of the rapid population growth over the last decade the man/land ratio has deteriorated appreciably. This has been accompanied by a significant shift in emphasis as between the different categories of land use. More and more land is being used for agriculture, sloping land is being ploughed. This process has been made possible by the advent of the agricultural tractor. The table below shows the shift in the pattern of land use between 1948 and 1975.

It should be noted that the situation has not changed appreciably in fact since the mid - 1960's.

Breakdown of land by category of land use,  
figures for 1948 and 1975 in %

Category	1948	1975
Arable land (incl. fallow land)	18	31
Vegetables, vineyards, orchards and olive groves	2	5
Pasture and grassland	49	33
Remainder (including woodland)	31	31
Total land surface (= 77.7 million hectares)	100	100

Source: Figures for 1948 from 'Agricultural Problems and Regional Development in Turkey', John Dewdney. Figures for 1975 from 'Summary of Agricultural Statistics 1975', SIS.

It is clear from the table that the extension of the area of arable land has taken place at the expense of the area under pasture and grass. So far this trend has helped to boost the production of food crops, but in the longer term it may have a number of adverse effects, namely:

- incorrect land use: a detailed study has shown that some 5 million hectares of arable land now in use are not in fact suitable for this purpose<sup>1</sup>;
- impact on meat production: the decline in grass and pasture area, combined with the increasing numbers of livestock, has placed enormous pressure on the area that remains. The fodder supply is already too low and even greater shortages are anticipated;
- erosion: erosion is a very serious problem, caused not only by incorrect land use but also by unsuitable methods of cultivation (for instance, ploughing with the slope instead of contour ploughing). More than 50% of the total land area is affected by erosion, 17% of it is very severely.

There are certain indications that, on a regional basis, incorrect land use, goes hand in hand with poverty, but it would appear that the first is a result of the second, rather than vice versa. Small subsistence farmers have no alternative but to cultivate sloping land in order to get enough food.

### 3.3 Land ownership

Unlike pasture and grassland (and also often fallow land), which is in many cases still communally-owned, agricultural land is under private ownership. The same applies to the majority of farm holdings, although tenancy and share-cropping arrangements are not uncommon. Some 20% of farmers are tenants or share-croppers. In spite of a lack of reliable, up-to-date information, it is generally recognized that the situation can be summarized as follows:

- extremely uneven distribution of land ownership:  
some 2 million holdings, more than 70% of the total, are smaller than 5 hectares. Only 100,000 holdings, approximately 5% of the total, are

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<sup>1</sup> Land use and Production Planning, Publication No 49 of the Union of Chambers of Agricultural Engineers of Turkey, Ankara, 1974.

larger than 20 hectares, although taken together they account for more than one-third of the land under ownership. 4000 of these holdings are in excess of 100,000 hectares;

- extensive fragmentation and the existence of communally owned land, as a result of the Islamic inheritance law;
- numerous disputes over land, which is still a very important factor in social relations (representing status, political power);
- an inadequate and inefficient registration system.

These problems, which indicate the desirability of some kind of land reform, also make it a difficult objective to achieve. An attempt was made with the 1973 Land Reform Act, but in 1977, i.e. after a few years during which only a very limited amount of land was redistributed in one province, Urfa, this Act was repealed by a decree of the constitutional court.

#### 3.4 Land reform

The aim of the fourth Five-Year Plan, like that of the third, and of Article 39 of the EEC Treaty, is drastically to increase productivity. It ought to be possible to increase productivity three or even four-fold in the long term. The '1968-2000' plan sets this increase as its target. The implementation of the Five-Year Plan is closely linked with land reform.

The 1973 Land Reform Act<sup>1</sup> provides for the gradual introduction of land reform region by region, but progress has been painfully slow. While the Bill was going through Parliament the area involved (i.e. the land to be redistributed), was halved and the level of compensation to be paid to the large landowners was doubled. A start was made in Urfa province, however, less than half of the area originally intended for nationalization was in fact nationalized for redistribution among the farmers. The requirement that farmers should organize themselves in cooperatives met with little success. It also became obvious that, in practice the nationalized land had effectively returned to the control

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<sup>1</sup> The Act stipulated the maximum size of agricultural holdings and provided for the expropriation and redistribution of land, the establishment of cooperatives and of a Land Reform Organization.

of the large landowners. In 1977 the constitutional court put an end to the land reform experiment by declaring it in conflict with the constitution and therefore invalid. The Ecevit government was to draw up a new Bill. The government continues to attach great importance to land reform for social, political and economic reasons.

### 3.5 Agricultural land use

The following table gives a breakdown of agricultural land by main categories of land use. Since this breakdown (in percentage terms) varies little from year to year, the situation in 1975 can be taken to be sufficiently representative.

Breakdown of agricultural land by category of land-use

Figures for 1977 in '000 hectares and %

Category	'000 hectares	Percentage of area under cultivation	Percentage of total agricultural land
Cereals	13,610	80.4	56.3
Pulses	570	3.4	2.3
Industrial crops	1,170	6.9	4.9
Oil seeds	1,200	7.1	5.0
Root crops	250	1.5	1.0
Fodder crops	130	0.8	0.5
Sub-total (area under cultivation)	16,930	100.0	70.0
Fallow land	7,250	-	30.0
Total agricultural land	24,180	-	100.0

Source: Summary of Agricultural Statistics 1975,  
State Institute of Statistics (SIS)

The table shows that 30% of agricultural land lies fallow every year and furthermore that more than 80% of the remainder is under cereals. These two facts are connected and explain how the majority of cereal production is carried out, namely by leaving the land fallow every third year and not by any particularly intensive cultivation.

Cereals therefore take up by far the largest proportion of agricultural land and one cereal in particular, namely wheat, predominates. This can be seen from the following table:

Area under cereals

Figures for 1977 in '000 hectares and %

Type	'000 hectares	Percentage of total area under cereals
Wheat	9,250	68.0
Barley	2,600	19.1
Maize	600	4.4
Rye	600	4.4
Rice	60	0.4
Other cereals	500	3.7
Total	13,610	100.0

Source: Summary of Agricultural Statistics 1975,  
State Institute of Statistics (SIS)

Wheat is grown on nearly 70% of the area under cereals, barley on around 20%. As an indication of the size of the area under wheat it is worth remembering that the area under cereals in the EEC is not much larger than in Turkey (a ratio of approximately 11 to 9). However, production in the EEC is much higher.

Although wheat is almost equally important in all regions of Turkey, the greatest concentration is found in Central Anatolia. A comparatively recent development is the spread of wheat production to the coastal areas, where rainfall is more plentiful and soils more fertile (Adana province).

#### IV. INPUTS

The record harvests of recent years cannot be attributed solely to the good weather. The increase in the use of modern inputs has also been an important factor:

##### 4.1 Irrigation

Since the start of state planning in the early 1960s high priority has been given to the development of irrigation. In 1976, 1.5 million hectares were covered by public irrigation schemes (approximately 1.3 million hectares under private schemes), as against 0.2 million hectares in 1962. It is estimated that, taking economic constraints into account, the area can be extended to 5.5 million hectares. Another important issue is the considerable under-utilization of existing capacity. Only two-thirds (1.0 million hectares) of the irrigated area is equipped to make use of the existing infrastructure, and on only half of this area (0.5 million hectares) are these possibilities fully utilized. Moreover, irrigation is used predominantly for cotton and, in second place, wheat production.

60,000 hectares of irrigated land were added in 1977 (target 100,000 hectares) and the fourth Five-Year Plan provides for 200,000 hectares of new irrigated land annually. However, irrigation installations alone are not sufficient. The farmers must be in a position to make optimum use of these facilities, and this requires a judicious combination of the use of drainage, artificial fertilizers, pesticides, insecticides and certified seeds. There is also apparently a lack of practical assistance to the farmers from agricultural consultants.

Since responsibility for the development of irrigation is shared between two different ministries, namely the Ministry for Energy and Natural Resources (the 'DSI'-State Hydraulic Works) and 'Topraksu' (Land and Water Resources Development), a department of the Ministry for Rural

Affairs, problems arise in practice with regard to the implementation and coordination of projects. The Ministry for Food, Agriculture and Animal Husbandry is also made up of two completely independent departments: one responsible for agriculture and the other dealing exclusively with animal husbandry. Since these government departments enjoy a large degree of autonomy, coordination suffers as a result.

The World Bank has financed and supervised independently set-up projects such as the 'Seyhan Irrigation Project' and the 'Fruit and Vegetables Project' which appear to be economically viable. Nevertheless, there is strong opposition in Turkey to the creation of a new project of a similar kind to be financed by the World Bank, since this conflicts with traditional structures and results in inadequate coordination. The structure of the various departments involved is one of the reasons why irrigation facilities are not used to the best advantage.

The European Investment Bank has loaned a total of 25 million u.a. for land improvement projects in Turkey (in the Gediz valley to the north of Izmir), covering irrigation (107,000 hectares; construction of two dams), reduction of soil salt levels, measures to counter land erosion and modernization of forestry. A special information service is supervising the coordination of the projects.

#### 4.2 Mechanization

The degree of mechanization, judged by Western standards, is low, but is increasing rapidly especially in the large holdings. The number of tractors increased nearly five-fold from only 65,000 in 1966 to 312,000 in 1976, although it must be pointed out that these tend to be used more for transport than for field work. According to the Turkish Ministry of Agriculture 70 to 80,000 tractors are likely to be needed annually.

Apart from the obvious influence of mechanization on productivity, it has also meant that 2.5 to 3 million hectares of land which was formerly used for grazing can now be ploughed and made suitable for agriculture.

#### 4.3 Seed

Little accurate information is available about the quality of seed that the Turkish farmer uses for cereal production, but it can be assumed that it is not very good. Generally the seed from the previous harvest is used. The production of certified seed, though on the increase, is still far from adequate. (On the other hand, the supply of seed for cotton and sugar beet production is quite satisfactory.)

#### 4.4 Fertilizers and pesticides

The use of both artificial fertilizers and pesticides has increased rapidly over the last ten years (an average increase of more than 15% per year). Although some artificial fertilizer is produced domestically, a large proportion has to be imported. The current shortage of foreign exchange (in 1979) has meant problems in this area.

According to FAO calculations the use of fertilizers can generally speaking, increase production by 35 to 40%. For Turkey this figure is likely to be even higher.

The following figures show the remarkable increase in the use of fertilizers in Turkey since 1960:

1960 :	107,000 tonnes
1967 :	1,537,000 tonnes
1977 :	5,640,000 tonnes

The fourth Five-Year Plan sets a fertilizer consumption target of 8,217,000 tonnes for 1982. The combination of these two factors, artificial fertilizers and irrigation, leads to an increase in productivity of around 60%. If one also takes land redistribution into account the overall increase may attain 80 per cent.

Another means of increasing productivity is the use of pesticides. Technological advance has made this input the cheapest (leaving aside the ecological aspects).

When pesticides are used, production increases by 10 to 30 per cent and drops by 50 per cent when they are abandoned.

To achieve a production of 2,000 kg. per hectare requires 23.1 kg. of artificial fertilizer and three-quarters of a kilo of pesticide, while a crop of 3,000 kg. per hectare requires 69.3 kg. of artificial fertilizer and 2.1 kg. of pesticide. (In the United States, which presents many similarities in terms of products, climatological and ecological conditions, 1.5 kg. of pesticides were used per hectare in 1963, giving a yield of 2,600 kg./ha.)

The most recent year for which pesticide figures are known is 1966; when 5,250 tonnes were used. It is planned to increase the use of pesticides ten-fold. For 32 to 35 million hectares of farmland the Turkish Ministry of Agriculture plans to use 50,000 to 69,000 tonnes of pesticides in the year 2000.

#### V. AGRICULTURAL COOPERATION

The cooperative movement in the agricultural sector is important in Turkey. At present in Turkey there are about 10,000 agricultural cooperatives:

- Agricultural credit cooperatives began to develop in 1972.

In 1977 2,060 agricultural credit cooperations embrace a total membership of 1.3 million farmers. The 1977 Yearbook of agricultural cooperation estimates the cultivated acreage benefiting from this form of cooperation at 70%<sup>1</sup>.

- Agricultural marketing cooperatives: with the exception of wheat, tea and tobacco, some 700 cooperatives (265,000 members) are engaged in the marketing of agricultural products. The government does its support buying<sup>1</sup> through these cooperatives.
- Multi-purpose village development cooperatives (5,500<sup>1</sup> which serve one million members), for instance refrigeration stores, dairy processing plants, concentrated fruit juice, tomato paste factories. These cooperatives draw their resources from savings of Turkish workers employed abroad.
- Soil and water cooperatives (1,300 with 78,000 members) set up by the Ministry, helping farmers who want to irrigate their land with credit facilities and technical assistance.
- Cooperatives for special products (sugar beet, fishery products, tea, forestry products, etc.), about 100 in all.

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<sup>1</sup> The figures taken from different sources tend to vary.

Despite the fact that many cooperatives have already been set up, they have had little influence on the modernization of agriculture and the marketing of products. There are a number of possible reasons for this, such as the fragmentary nature of legislation (five different laws, each with a different policy, regulate the activities and the establishment of cooperatives), the lack of capital, the absence of a cooperative bank, the inadequacy of centralized organization of the cooperatives where it exists at all, the absence of audits. The latter factor in particular does little to promote the confidence of members and outsiders.

An Act passed in 1972 dealing with both the regionalization and centralized organization of cooperatives, as well as the setting up of unions of cooperatives, did not have the success which was expected of it. The state aid provisions were insufficient and the cooperatives were not in a position to obtain aid from private money lenders.

In 1974, the responsibility for the development and the supervision of cooperatives (a priority objective of the five-year plans) was entrusted to one single ministry (Ministry for Rural Affairs and Cooperatives). This move led to a more effective policy.

It was not until 1977 that a central union of credit cooperatives was set up. One of the most important and most difficult tasks is the education and training of the rural population. At the present time this is solely the responsibility of the state administration, or to be more specific, a department for cooperative education. A good deal of ground has still to be covered in the field of cooperatives and cooperative unions. The magnitude of the problem becomes clear when one realizes that 38% of the population is still illiterate.

## VI. CEREALS

### 6.1 Production and consumption

With a production of 16.7 million tonnes in 1977, Turkey is among the world's biggest wheat producers. Approximately 30% of the harvest consists of durum wheat, of which Turkey is probably the world's second largest producer after the U.S.S.R. Various bread wheats are also grown, both winter and summer varieties. Some of the summer varieties are comparable in quality to the red summer wheats of North America.

With the extension of the area under wheat, production has more than doubled in the last 20 years. Nevertheless, there have still been significant fluctuations from year to year. By far the majority (90 per cent) of wheat cultivation is on non-irrigated land and the yield therefore depends very much on rainfall. The extent of this dependence is shown clearly by the following table, when one remembers that 1973 and 1974 were drought years and that 1975 and 1976 were characterized by exceptional rainfall.

Area under wheat, yield and production  
since 1971

Year	'000,000 hectares	100 kg/ha	'000.000 ton
1971	8.7	15.2	13.3
1972	8.7	14.0	12.2
1973	8.9	11.3	10.0
1974	8.8	12.6	11.0
1975	9.3	15.9	14.8
1976	9.3	17.8	16.6
1977	9.4	17.8	16.7

Source: FAO

The yield per hectare, which in 1971 was around 1500 kg., fell to around 1200 kg. in 1973 and 1974 (a drop of 20%). In subsequent years record harvests were achieved (between 1700 and 1800 kg. per hectare). Naturally, these figures are overall averages, which conceal the existence of large regional variations. In some regions the yield is twice as high as in others.

Even within the individual regions yields vary considerably, especially as between irrigated and non-irrigated land. This is not only due to differences in water availability and soil quality, but also depends on the extent to which modern inputs are used (tools, seed, pesticides).

Barley is Turkey's second main cereal crop after wheat. In recent years barley production has reached 4.5 to 5 million tonnes. Other cereals are relatively less important. For the sake of completeness the production figures for cereals are given in the table below:

Cereals production since 1975 (in '000 tonnes)

Type	1975	1976	1977	1978 <sup>x)</sup>
Wheat	14 750	16 578	16 720	16 000
Barley	4 500	4 900	4 750	4 700
Maize	1 200	1 310	1 265	1 300
Rye )	1 140	740	690	690
Oats )		415	370	370

x) provisional figures

Source: FAO

Cereal production

1975-1977 (average)

Country	Cereals Total (1)	Wheat
EUR-9	97 167	38 506
Turkey	23 408	16 041

Wheat yield (total)  
for the EEC (the Nine) and Turkey

Year	100 kg/hectare			
	EEC (the Nine)	Highest yield (Netherlands)	Lowest yield (Italy)	Turkey
1977/78	43,2	65,7	26,5	17,8

<sup>1</sup> without rice

Production and yield of wheat and maize in Turkey  
compared with some other countries

1978

	Country	Production (1000 MT)	Yield (Kg/ha)
WHEAT	Turkey	16 000	1 778
	France	20 900	4 946
	Fed. R. Germany	8 118	5 013
	U.K.	6 590	5 218
	Netherlands	792	6 567
MAIZE	Turkey	1 300	2 167
	France	9 200	5 041
	U.S.	179 889	6 353
	Italy	6 040	6 572

Source: F.A.O.

Monthly Bulletin of  
Statistics, No 2, 1979

Production and consumption of cereals  
in the Community in 1973/74 and 1976/77  
 (1000 tons)

	1973/74			1976/77		
	Usable production	Domestic use	Degree of selfsufficiency	Usable production	Domestic use	Degree of selfsufficiency
Total cereals (without rice)	104 718	115 530	90.6	89 988	109 732	82.0
Total wheat	41 008	39 888	102.8	38 835	37 719	103.0
Soft wheat	37 954	35 648	106.5	35 319	33 611	105.1
Hard wheat	3 054	4 240	72.0	3 516	4 108	85.6

Source: Yearbook of Agricultural Statistics  
 1974-1977  
 Eurostat

Wheat (like maize) is grown mainly for human consumption in the form of bread and constitutes the staple food of the Turkish population. The wheat consumption of 230 kg. per head is one of the highest in the world. The main fodder cereal is barley; virtually the whole harvest (4.5 million tonnes) is used to feed livestock.

## 6.2 Trade

As mentioned in the introduction, agricultural products play an important role in Turkey's export trade. As far as cereals (wheat) are concerned the situation is fairly variable. A great deal depends, of course, on the domestic production, which in turn is largely dependent on the weather conditions.

Turkey's foreign trade in wheat since 1970/71  
in '000 tonnes

Year	Export	Import	Net Balance
1970/71	-	568	- 568
1971/72	18	554	- 536
1972/73	560	30	+ 530
1973/74	-	697	- 697
1974/75	-	1 017	- 1 017
1975/76	-	13	- 13
1976/77	450	-	+ 450
1977/78	1 400	-	+ 1 400

Source: International Wheat Council

The chief importers of wheat over the last few years have been the countries of the Middle East and the Eastern Bloc. Barter arrangements have been concluded with some of these (e.g. Iran and Iraq) under which wheat is exchanged for oil. Recently Turkey has fallen behind in meeting its export commitments. The limiting factor here is not, as some maintain, the grain shipping capacity of the ports, but rather the problem of transporting the grain from the interior.

### 6.3 Price policy and storage capacity

The price policy pursued by the Turkish government in the agriculture sector is virtually all-embracing. Practically all inputs are subject to price controls and most are subsidized. As far as market organization is concerned, there is also a price and market policy for cotton, sugar, olive oil and tea. There is no market organization for fresh fruit and vegetables.

The administration of the market organization in the cereals sector is the responsibility of the Bureau for Agricultural Produce (T.M.O.). Its duties involve, in particular, the purchase, transport, storage and export of cereals. Each year the Council of Ministers fixes the support prices, which fulfil a similar function to the intervention prices in the EEC. The T.M.O. is in fact obliged to buy up the quantities offered at these prices. Every year the Bureau buys 20 to 40% of the wheat intended for the market.

In years when the harvest is good, the problem of financing and storing these 'intervention' stocks arises. This has become more pressing in the last few years. Although the storage capacity is barely two million tonnes, current grain stocks are estimated at 5 million tonnes. Consequently, considerable quantities have to be stored outside in air-tight and dry conditions, covered by a layer of earth. Efforts are being made to extend storage facilities, with assistance from the FAO and the IBRD (World Bank).

Price levels differ little from those of other wheat producing countries, although they are slightly higher than the major wheat-exporting countries (lower than EEC prices).

### 6.4 Degree of self-sufficiency

Over the last 20 years both government and foreign experts have announced many times that Turkey had become self-sufficient in wheat. Despite these optimistic claims, however, Turkey has remained dependent on imports, except in good years. While there is expected to be a continuing surplus of wheat, there is likely to be an increasing shortage of rice and especially of food cereals. On balance, therefore, taking all cereals together, this will give a degree of self-sufficiency of around 100. The means to increase this percentage do exist, but will they be utilized?

## VII. OTHER AGRICULTURAL PRODUCTS

### 7.1 Fruit and vegetables

In 1975 3.5% (1,798,000 hectares) of land under cultivation was used for fruit production<sup>1</sup> and 1% (490,000 hectares) for vegetable production. In terms of value, fruit production represents 13% of the total agricultural production (in 1974). These shares of production increased between 1968 and 1974 by 4.5 and 6% respectively.

Of the total fruit crop in 1975 grapes take first place (in quantitative terms) with 47%, followed by apples (13%), oranges (7.81%), hazelnuts (4.75%), lemons (4.18%), pears (3.46%), figs (2.52%), plums (1.87%), walnuts (1.69%), mandarines (1.51%), and apricots (1.44%). Citrus fruits together account for 13.5% of the total quantity. The situation in the case of vegetables is as follows:

melons	41.8%
tomatoes	24.0%
aubergines	5.0%
cabbage	4.7%
cucumbers	4.0%
leeks	2.3%
green beans	2.6%

Vegetables and fruit are grown in all agricultural areas.

Exports are hampered considerably by the absence of proper marketing structures. Products are brought to the market immediately after being picked; storage, either short or long-term, is virtually unheard of and involves such small quantities as to have no price-regulating effect.

An FAO experiment in Yalova has shown that the income situation of fruit and vegetable producers can be improved if the market can be supplied outside the actual picking season.

Olive production in 1976 amounted to 1,097,000 tonnes, olive oil production amounting to 178,000 tonnes.

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<sup>1</sup> Vineyards are not included.

## 7.2 Tobacco

Turkey is one of the biggest tobacco producing and exporting countries in the world. It exports only to Europe and the United States. The tobacco is grown primarily in the Aegean region and along the Black Sea.

### Production (in thousand tonnes)

1975:	200
1976 :	314
1977 :	223

The state tobacco agency had to destroy 27,000 tonnes of low quality tobacco in 1977, in order to make storage space available for better-quality varieties.

In view of the export difficulties and the size of tobacco stocks, the government has taken steps to discourage farmers from planting tobacco, at least in fertile soil.

## 7.3 Cotton

Turkey is the sixth largest cotton producer in the world. Production figures in 1975/77 were:

Soviet Union	2,650,000 tons
United States	2,420,000 tons
China	2,426,000 tons
India	1,109,000 tons
Pakistan	515,000 tons
Turkey	508,000 tons

Turkey's Five-Year Plan estimates cotton production in 1983 at 675,000 tons, of which 290,000 tons for export.

Source: 'El Campo'  
Bolletín de Información agraria  
del Banco de Bilbao, No 70, 1979

#### 7.4 Sugar beet

This is a traditional product which is being grown increasingly. Production is growing faster than domestic consumption, with the result that a surplus of 9% is forecast for 1985, increasing to 17% in 1990, on the basis of the present degree of self-sufficiency.

#### Sugar beet area, production and yield

Year	in 1000 ha	in 1000 tons	kg/ha
1974	187	5,707	30,507
1976	248	9,400	32,233

#### 7.5 Livestock products

Meat production in 1975 amounted to 616,000 tonnes from a livestock offtake of 28.6 million head, broken down as follows: 32% cattle, 26% sheep, 13% lambs, 8% goats.

According to an unpublished report by the World Bank, productivity in the livestock sector is extremely low; in fact this sector is operating at only 15% of its potential productivity.

Meat consumption in Turkey is much lower than the average of other Mediterranean countries:

1969 : 14.5 kg per capita  
 1972 : 17.8 kg " "  
 1975 : not known (FAO and OECD)

Meat consumption in 1975 :

Italy : 65 kg  
 Greece : 40 kg  
 Spain : 48 kg

Consumption is also on the increase, growing faster than production.

#### 7.6 Soya beans

Year	Area under cultivation (ha)	Production (tons)	Yield (kg/ha)
1974	3,500	8,500	2,429
1975	6,200	6,750	1,089
1976	6,400	8,500	1,328

The figures show that although the area under soya beans is increasing, the yield is extremely variable. Production is largely concentrated in the Black Sea region, which is not really suited to this production because of its very high rainfall (2,000-3,000 mm/year).

With the help of an American aid organization, a soya bean experiment was set up in 1977 in the Adana region. This project appears to be running successfully; initial yields have reached 2,000 kg/ha.

TURKEY  
GENERAL FACTS

Population

1978:	43,190,000		
Rate of population increase (%) :	2.4		
Density of population (km <sup>2</sup> ) :	52		
Distribution of population :	urban	41.8	
	rural	58.2	
Economic active population (%) :	agr.	60.5	
	industr.	12.7	
	services	13.0	
Distribution of G.N.P. (1975) :	agr.	22.4	
	industr.	25.7	

<u>Area (km<sup>2</sup>)</u>	779,452		
Anatolia	755,688		
Thrace	23,764		
Distribution of land cultivated :	246,000		
	forests	201,700	

Administrative districts

Provinces	:	67	
Districts	:	572	
Villages (Belediye and Muhtarliks)	:	36,114	
Total settlements	:	<u>±</u> 70,000	

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Annex b

EEC IMPORTS FROM TURKEY

(in '000 EUA CIF) (round figures)

Year	Hazelnuts	Tobacco	Grapes	Cotton	Figs	Olive oil	Citrus fruits
1974	70 570	31 850	40 325	88 690	10 130	14 970	6 220
1975	71 840	29 170	31 215	74 220	10 360	1 120	6 760
1976 (first 9 months)	61 490	34 615	26 560	135 470	2 160	50	3 470

Annex c

G.D.P. PER AGRICULTURAL AND NON-AGRICULTURAL WORKER

Year	Total	LT at 1968 prices		Agr. as % of non- agr.
		Agricultural	Non-agricultural	
1968	7,830	3,477	17,551	19,8
1972	9,569	4,195	19,305	21,7
1975	11,175	4,538	21,467	21,1

G.D.P. per worker has improved slightly more in the agricultural than in the non-agricultural sector. 3.1% versus 2% in real terms from 1965 - 1975.

Source: Turkish State Planning Organization

Annex d

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