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Food Security by Agricultural Adjustment Policies: The Turkish Case

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Abstract. Agriculture and food production have long been significant sectors in the Turkish economy. The high capacity for agricultural production and having a rich cropping pattern have enabled Turkey to meet domestic demand for food since the beginning of her history. Providing an adequate and balanced diet for the population and in particular increasing per capita consumption of animal protein, has been a challenge in a country like Turkey which, over the last 60 years, has persistently experienced net rates of population growth above 2% per annum. Raising production levels and yields, closely allied with other objectives has been the central aim of Turkish agricultural policy since the 1930s. The government has set a goal of increasing the volume of total agricultural production by 4.2% per annum in the Sixth Five-Year Development Plan period (1990-1994). Agricultural trade policies accompanied with reduction of input costs were agricultural support policies. Measures intending to improve the production basis of agriculture concern mainly research, training and extension services; inspection, pest and diseases control, and land improvements. Although there has been a little decline in the self-sufficiency ratios between the 1980s and 1990s, at present, Turkey is a self-sufficient and a food secure country, and is likely to stay so in the future.

Keywords. Turkey – Food security – Agricultural adjustment policies – Self-sufficiency – Rapidly growing population – Market oriented strategies – Rapid urbanization.

Résumé. L'agriculture et la production alimentaire ont toujours été des secteurs importants de l'économie turque. La forte production agricole et la diversité des aliments produits ont permis à la Turquie de répondre à sa demande alimentaire depuis toujours. Dans un pays comme la Turquie qui, depuis les 60 dernières années, doit faire face à une croissance démographique de 2% par an, assurer un apport alimentaire adéquat et équilibré, en particulier augmenter la consommation de protéines animales, relève d'un défi. Depuis les années 30, le but principal de l'agriculture était d'augmenter la production et le rendement. Le gouvernement avait fixé à 4,2% le niveau de croissance de la production à atteindre au cours du sixième plan quinquennal (1990-1994). Des politiques de soutien à l'agriculture ont été appliquées, telles que la politique commerciale des produits agricoles et la réduction du coût des intrants. Les mesures visant à l'amélioration de la production agricole concernaient surtout la recherche, les services de formation, le contrôle des maladies et l'amélioration des terres. Actuellement, malgré une légère baisse dans le ratio d'autosuffisance entre les années 1980-1990, la Turquie est un pays autosuffisant en aliments et le restera dans le futur.

Mots clés. Turquie – Sécurité alimentaire – Ajustement agricole – Politiques d'autosuffisance – Croissance rapide de la population – Stratégies orientées vers le marché – Urbanisation rapide.

I – Introduction

Agriculture and food production have long been significant sectors in the Turkish economy. Turkey has a great agricultural production potential arising from its ecological conditions, land property and rich crop pattern. The different agro-ecological conditions throughout the country provide the sector with a unique production diversity. These factors have enabled Turkey to meet domestic demand for food and fiber since the beginning of its history. Agriculture is, still, of particular importance for feeding the rapidly increasing population (over 2% per annum) as well as for contributing to the overall national development efforts.

At present, about 40% of the population is living in rural areas and depends for income, generally, on agriculture. While this percentage was much higher in the past, its present level is regarded as undesirable high, in view of the diminishing share of the sector in the GNP. Until 1978 the share of the agricultural sector has held a top position in GNP. This share, however, has been falling since then due to the

increasing emphasis on industrialization, from 38.2% in 1962 to 16.2% in 1993. It is expected that this trend will continue for the next two decades. But this development should not be interpreted as a decrease in the importance attached to agriculture. The fall of the share in GNP reflects the rapid developments in industry and services.

Agricultural and food products had the major share in the total export revenue until recently. This share has also diminished overtime as a result of the gradual transformation of the national economy into an industry and services-based one. During the Five-Year Planned periods (1963-1993), especially after 1980, the percentage of the export of agricultural products have decreased progressively; 75% in 1970, 57.4 % in 1980, and 15.4 % in 1993. Nevertheless, the volume and the value of the exported agricultural products is presently much greater than in the past. Indeed, the value of agricultural export of the country has increased fivefold; from 447 million US \$ to 2.37 billion US \$ between 1970 and 1993. There is a consistent surplus on agricultural trade, but as mentioned, this is small in relation to total export.

The progress achieved in the realization of the growth targets set forth in the development plans of Turkey has been rather satisfactory. For instance, during the 5th Five-Year Development Plan (1985-1989), while the added value increased, on the general average, by 3.6% per annum, the agricultural added value increased by 3.3% per annum. Within the 6th Five-Year Development Plan (1990-1994) it has been foreseen that the added value for the agricultural sector be increased by 4.1% per annum, whilst population increase is expected to be around 2% per annum (the added value has been increased by an average of 4.9 % per annum between 1990-1992).

II – Agricultural Adjustment Policies of Turkey

Before 1980, a policy of industrialisation based on import substitution was pursued in Turkey. In 1980, the Government introduced a new economic stabilisation programme which differed from previous programmes in several important aspects. The initial measures were aimed at correcting structural weaknesses in the Turkish economy over the medium term, to create economic structures with an export orientation and encourage inflows of private capital. Two of the primary objectives were to reduce the incidence of Government controls and to introduce instruments that would allow greater emphasis to be put on indirect management of demand. Policies have been more market-oriented since then, encouraging greater competition and private initiative. Policies pursued from 1980 brought considerable liberalisation in import regulations; import protection rates were decreased and import guarantee deposits were reduced.

The main objectives of agricultural policies in Turkey, as set out in the Government's Five-Year Development Plans: (i) to meet the nutritional needs of a rapidly growing population; (ii) to increase yield and output without damaging the environment; (iii) to reduce the vulnerability of production to adverse weather conditions; (iv) to provide adequate, stable incomes for those working in the sector; and (v) to develop the export potential for agricultural commodities.

Providing an adequate and balanced diet for the population, and in particular increasing per capita consumption of animal protein, has long been a challenge in a country like Turkey which, over the last 60 years, has persistently experienced high net rates of population growth. The average inhabitant's diet is still largely derived from grains, fruits and vegetables. As a long term goal, the Government would like to see the consumption of animal protein brought up to levels closer to those of other OECD countries. The data in *Table 1* shows the difference in consumption patterns between Turkey and Italy, as a high-income mediterranean country.

Raising production levels and yields closely allied with other objectives has been the central aim of the Turkish agricultural policy since the 1930s; originally by increasing both the cultivable area and yields. As the limits of the country's cultivable land have been reached in 1960s, any further growth of agricultural output needed to be achieved mainly by reducing the fallow area and increasing the yields through intensive research and development efforts.

Overall, the Government has set a goal of raising the volume of total agricultural production by 4.2% per annum in the 6th Five-Year Development Period (1990-1994). By comparison, the annual average growth

rate in agricultural production during the period from 1979 to 1992 was 2.7%. In the case of crops, the Government has sought to achieve higher yields by promoting greater use of inputs—particularly certified seeds of released varieties and hybrids developed by the national or international programmes, together with appropriate agronomic techniques, pesticides, fertilizers and irrigation water—and, where conditions are suitable by reducing fallow areas and encouraging farmers to plant second crops mainly in Mediterranean coastal area. A growth rate of 4.9% per annum is targeted for animal production. Special emphasis is being placed on Eastern and Southeastern Anatolia, and on expanding fodder crops production, improving the genetic capacity by artificial insemination and importing pure-breed dairy cattle.

Irrigation, besides contributing to higher yields, is also considered as a means of reducing the vulnerability of production to precipitation deficit. The Government has set specific targets for the expansion of irrigation since the First Five-Year Development Plan. In 1990 a target was set of extending irrigation to 53% of total irrigable land by the end of the 6th Five-Year Development Plan (1994). It is estimated that at the end of 1993, a coverage of nearly 47% of total irrigable land have been achieved.

Turkey's drive for self-sufficiency in agriculture and food aims not only at the sector as a whole, but also at individual products. For instance, due to being a net importer in crude vegetable oil, the Government is trying to increase domestic production of oilseeds.

1. Agricultural Support Policies

In the crops sub-sector, supporting measures have primarily concerned domestic price support, bolstered in the past through restraints on imports, and currently through selective tariffs, and at times and for particular commodities supported by market intervention purchases. In the livestock sector, border measures have been the main mechanism to support prices. However, at the same time, the Government has sought to moderate rises in food prices for consumers by regulations. Subsidies to farmers for material inputs and cheap credit have been provided with the aim of boosting yields and hence production and incomes. For most supported crops no limits have been placed on the volume of production, or on sales that can be made to the support purchasing agencies. Some controls on planting acreage exist for hazelnut, sugarbeet and tea.

A. Agricultural Trade Policies

Changes in Turkey's trade policy regimes affecting agriculture have not been as far reaching as those affecting manufactured products and industrial raw materials. While the aim of industrial trade policy during the period between 1980 and 1992 was to expose the industrial sector to international competition in order to improve its efficiency and to change its orientation from import substitution to export promotion, the aim of agricultural trade policy remained much as it has been in the previous period: (i) to insulate domestic producers from external price shocks; (ii) to promote self-sufficiency in food and agricultural raw materials; and (iii) to stabilise consumer food prices. Thus, in respect of agriculture, the instruments of trade policy were changed, but not the objectives of the policy. The major change following adoption of the 1980 economic stabilisation programme was to gradually phase out quantitative restrictions on many imports and exports. However, quantitative and other non-tariff restrictions on imports were replaced by *ad valorem* and specific-rate taxes, the latter being used in effect as variable levies. Similarly, quantitative and administrative restrictions on export were replaced by taxes or subsidies. More recently, Turkey has made moves to harmonise its trade policies with those of the EC and EFTA countries.

Until 1980, the import of agricultural commodities had been highly restricted. Of those commodities that were allowed to be imported, most could only be imported by a State Economic Enterprises (SEE). Imports of fertilizers and pesticides, which were also controlled by a SEE, were given special treatment by, among other measures, applying a lower exchange rate on such transactions. The economic reform package announced on 24 January 1980 sought to make Turkey's import regime more transparent by assigning different commodities to specific Liberalisation Lists. Through 1984, the import of agricultural commodities was carried out within the framework of these lists. However, products considered critical by the Government, namely wheat, milk, cream and vegetable oil, continued to be imported within the framework of a quota system. This period also sought the introduction of several special levies on

imports, revenues from which were usually earmarked for specific extra-budgetary funds. In June 1982 for example, the Government placed a 2% tax on all imports, with revenues earmarked for a Support and Price Stabilisation Fund. In setting up this mechanism, the Government's primary objective was to secure price stability in domestic markets. As well, some of the revenues collected from this levy were used to subsidise agricultural inputs such as fertilizers, and to subsidise exports of certain agricultural commodities.

With the publication of 1984 Import and Export Regimes, the Government abolished the liberalisation lists and divided imports into three groups: (i) goods whose import were prohibited; (ii) goods subject to an import permit; and (iii) goods whose import were unrestricted. Agricultural products were distributed over all three groups. The quota system applied to imports was formally abolished in the 1984 reforms, and replaced by a system of reduced and graded tariffs, redefined within the framework of Turkey's GATT commitments. With effect from January 1990, the List of Goods Requiring Permission was abolished. As well, only a small number of products remained on the prohibited list. Of these, six were of agricultural origin: angora goats, hemp, cuttings of fig trees and wines, and tobacco and hazelnut plants. In practice, however, the import of critical agricultural commodities, namely cereals (wheat, barley and maize), sugar, sunflower seeds, milk and dairy products continued to be governed by special procedures to protect domestic producers from price fluctuations on world markets.

Reduced customs duties (ranging from 2 to 16 percentage points) were established by 1993 Import Regime, for imports from EC and EFTA member countries, but few major agricultural commodities were affected by such preferential margins. In the 1993 Import Regime, reduced customs duties were applied to vegetable seeds, starches, preserved mushrooms and truffles, oilseeds cake and other solid residues of oilseeds imported from the EC. In addition to these, Turkey extended tariff reductions to EFTA countries on some fish and fishery products, some beverages, coffee and chemical substances relating to agricultural products.

B. Reduction of Input Costs

Some of the inputs used in crop and animal production are subsidised by the State in order to increase their consumption and therefore yields or, in the case of new technologies, to stimulate their using. The overriding concern in recent years has been to keep the prices of inputs low enough to encourage increase farm production. For the most part, they have been channelled through the Agricultural Bank, financed by extra-budgetary funds.

(i) Capital grants: All agricultural investment incentives including reductions in customs duties, incentive credits, certain income tax reductions and Resources Utilisation Support Premium payments are also applied in other sectors on the import of machinery and equipment. In addition, investment incentives in the agricultural sector are available for seed production and greenhouse structures involved in crop production as well as for aquaculture and animal husbandry. Since 1986, grants have been paid to producers from the Resource Utilisation Support Fund for the purpose of promoting the establishment of modern facilities. When an investment project is approved, a grant is made to the investor: 30% of the project cost in top priority development provinces, and 25% in other provinces.

(ii) Interest concessions: A multiplicity of loans are available to farmers in Turkey at concessional rates of interest, mostly provided in one way or another by the Agricultural Bank and disbursed either directly by the Banks branch offices or through intermediaries such as Agricultural Sales Cooperatives and Agricultural Credit Cooperatives. The interest rates charged on these loans are set out for the period 1979-1993 in *Table 2*. As it is seen in the table, through this period, interest rates have been set well below not only the rates charged on commercial non-agricultural loans, but also the rate of inflation. In other words, these loans yield positive dividend for the farmers. Furthermore, since 1986 the Agricultural Bank has particularly favoured livestock farming by offering short-term credit at interest rates ranged from 8 to 13 percentage points below those available for crop production.

The organisation of agricultural credit in the sugarbeet industry is separated from that of other crops, and is financed through the Sugar Bank (SEKERBANK). As for other farmers, sugarbeet growers are offered concessional interest rates, as well as subsidised loans to help growers develop livestock rearing facilities.

(iii) Fertilizer subsidies: The practice of subsidising the domestic manufacture and consumption of fertilizer dates from 1961. From then until 1986, when a new system of support was introduced, both ex-factory and farmer prices for all types of chemical fertilizers were determined by the Government, so as to support domestic production of fertilizers while, at the same time, stimulate consumption by farmers. Starting first of July 1986, the constraints on chemical fertilizer imports and exports were totally removed. Domestic producers were allowed to determine ex-factory prices under competitive market condition. As a consequence, Government's direct involvement in fertilizer distribution and pricing was sharply reduced. The liberalisation of trade in fertilizer also necessitated a change in the system for subsidising the price for farmers. Under the new system the Government announced by decree (generally twice a year) the per kilogramme rebate it will pay to distributors of fertilizer.

(iv) Seed subsidies: In 1985, the Government began supporting the sale of seeds to farmers through a refund payment. This subsidy is available for Ministry-certified producers of hybrid maize, hybrid sunflowers and soybeans.

(v) Pesticide subsidies: Support for pesticides used by farmers consists of both protective measures taken by the State when epidemic crop diseases or pest infestation occur, and support for protective measures taken by the farmers themselves. In the first form of support, the producer pays no fee for this service, as all inputs are financed by the State. The second form of support introduced in May 1987, authorises the Agricultural Bank to pay farmers a 20% rebate on the value of pesticides they buy; the rebates are financed out of the Support and Price Stability Fund.

(vi) Irrigation subsidies: All water rights, with minor exceptions, are vested in the State. This principle, however, allows private withdrawal of ground water and surface water by riparian owners. No fee is charged to farmers for the resource value of the water they used for irrigation, though farmers who grow crops sown on irrigated land do at least contribute towards the cost of operating and maintaining the infrastructure. Since the 60s the Turkish Government has invested heavily in irrigation, roughly at the rate of 800,000 hectares per decade. With regard to State Hydraulic Works (DSI), operated schemes (which represent about one quarter of the total irrigated area of Turkey) from which farmers benefit are charged on an annual, area-based, fee. Irrigation costs are kept lower through subsidised tariffs for electric pumping. In 1985, the Turkish Electricity Board (TEK) lowered tariffs charged for electricity used in pumping ground water for irrigation to 50% to 60% of the tariff applied to the industry.

(vii) Improvement of breeding stock: Government programmes to promote artificial insemination (AI) began in 1949, with the aim of improving Turkish Livestock breeds through the use of purebred sperm. Currently, frozen semen production is carried out mainly at three State-owned AI-laboratories. About 915,000 cattle were artificially inseminated with semen provided by these laboratories in 1993. In remote villages and settlements, the Government provides breeding bulls to farmers free-of-charge. Similar programmes have been operated aimed at upgrading sheep breeding stock. The private sector was given permission to provide AI-services in 1985. Farmers using these services are paid a rebate from the Agricultural Bank for every cow successfully impregnated by AI. Dairy cattle and breeding stock have been imported from European Countries and the United States since mid-1987 under a programme administered by the Ministry of Agriculture and Rural Affairs. In 1988, the private sector was given permission to import breeding beef and dairy cattle. The major aim of this programme is to increase the proportion of high-yielding genetically advanced breeds within the native cattle population and to encourage the development of intensive dairy production. About 150,000 pregnant cattles have been imported since 1987.

III – General Services

There are a wide range of sector-wide measures in place in Turkey that are intended to improve the production basis of agriculture. These measures concern mainly research, training and extension services, inspection, pest and diseases control, and land improvements. Some technical assistance and agricultural extension work have also been financed with loans from the World Bank and The International Fund for Agricultural development (IFAD).

1. Research, Training and Extension Services

Agricultural development has been achieved through the investment in agricultural research, as a major component of agricultural policies since 1926, when the first research station was established only three years after the establishment of the Republic. But the development was slow until the 1950s. A rapid increase in production occurred shortly after the 1950s because of: (i) a marked increase in the cropping area, largely cereals, due to mechanisation; and (ii) a more gradual and less uniform increase in yield due to the introduction of improved varieties and advanced agronomic techniques, especially in fallow management and replacement. Investment in human resources to develop and maintain a qualified research staff has been the key success of agricultural production and food security in Turkey. During the last 40 years, Turkish agricultural development has been quite substantial and profitable. Turkey has doubled its cereal production since the initiation of the National Winter Cereals Project in 1969. Today, Turkey ranks seventh in the wheat and barley world production. The country has also become a world leader in export of lentils and chickpeas as a result of the Fallow Reduction Project initiated in 1983.

The Turkish Government has recognized the danger of food insecurity and the importance of agriculture in the development of the national economy and especially in human nutrition. Turkey, at present, has sufficient food supply and surpluses in some items, and more importantly, has a very high potential of production to meet local or external demands for the future. As it is known, the role of National Agricultural Research System (NARS) is to sustain and improve this capacity. Agricultural growth and/or food crop yield increase or stabilization is the major responsibility of NARS.

At present, agricultural research activities are carried out at national and regional levels by a total of 65 institutes, employing some 1,250 active researchers. Agricultural research is regarded as a public good by the Government and, therefore, is performed by governmental institutes; a major part of the research is carried out by the Ministry of Agriculture and Rural Affairs and the Universities. TÜBİTAK (Scientific and Technical Research Organisation of Turkey) supports the research activities in various fields of agriculture, food preparation and preservation as well. The Association of Atomic Energy and Nuclear Research Center carries out studies on plant nutrition and breeding, soil fertility, food storage and animal health by utilizing nuclear techniques. Apart from these state institutions, several national and multinational seed companies conduct variety development programmes and adaptation trials on some important plant species such as vegetables, sunflower, maize, soybean, millet, and safflower.

There are 4 Central Research Institutes, attached to the General Directorate of Agricultural Research, which carry out research across the country on field crops, horticulture, animal husbandry and animal diseases; 8 Regional Research Institutes which concentrate on problems specific to their region; and 42 Subject Research Institute which carry out research on an individual commodity, groups of commodities or economic problems that have priority in their particular region. There are 11 Research Institutes attached to the General Directorate of Rural Services which undertake research relating to soil and water resources, soil fertility, soil rehabilitation, sustainable water use and irrigation. In 1991, these institutes were involved in over 1,700 research projects in all disciplines.

After the First and Second Fruit and Vegetable Projects implemented in 1970s with the World Bank financing, the Government of Turkey started a US \$ 200 million Agricultural Extension and Applied Research Project in 1984, partly using World Bank and IFAD credits, with the objective of upgrading and strengthening the national agricultural extension system, and the link between farmers-extension-research. The first phase of the project ran for 6 years and implemented in 18 provinces and 5 research institutes. The second phase which started in 1990 and is due to run through 1997 (at a total cost of approximately US \$ 114 million), extends the implementation area to another 21 provinces and 14 research institutes. The Government plans eventually to extend the project to cover all provinces throughout the country. Recently, a new project called Turkey Agricultural Research Project, also supported by the World Bank has been initiated aiming at strengthening the agricultural research capacity of the country with particular emphasis to research providing significant benefits to the less developed Southeast and East Regions. The Research Master Plan Preparation for the 1996-2005 period, Preparatory Works for the Establishment of an Agricultural Economic Research Institute and Farming Systems Researches are some of the activities being undertaken within the framework of this project.

The Southeastern Anatolia Project (GAP), constructed on the basins of the Euphrates and Tigris rivers is one of the most important projects of Turkey. The region comprises 8 provinces in southeastern Turkey, covering 75,000 sq. km of land which correspond to 9.5% of the total area of the country. The longest irrigation water tunnels in the world (two parallel tunnels about 26.4 km of 7.62 m inner diameter each) are in this project area. GAP is expected to be completed by 2001. Beginning from 1991, 150,000 ha of land has been brought under irrigation each year. After the realisation of irrigation systems (about 1.7 million ha) and due to the application of technological innovations, this area is going to be one of the most important ones for growing food and industrial crops. There will be a major break through in agricultural production in this region.

2. Inspection

The General Directorate of Protection and Control is responsible for carrying out inspections of imports in order to safeguard domestic crops and livestock from diseases that can be brought into the country from abroad for monitoring and supervising animal movements, and for imposing quarantine orders, as appropriate. The production plants and produces about 25,000 food factories and 300 mixed feed factories are inspected by the same general directorate. Food inspectors employed by the provincial agricultural directorates carry out regular food analysis at 38 food control laboratories.

IV – Food Supply and Demand

The rapid growth in urbanisation and real per capita income has led to a faster expansion of food demand than agricultural production and to a shift in consumption patterns towards the livestock products, especially since 1980. One of the consequences of this shift in consumer demand has been that the consumption share of some particular commodities from domestic resources has decreased over the last decade and that although, overall, Turkey is currently a net exporter of food product, imports particularly of dairy products and beef are tending to grow at a faster rate than exports.

Turkey's self-sufficiency in the main agricultural commodities can be regarded quite stable. The self-sufficiency ratios for major foodstuffs are given in *Table 3* as 3-year averages for 1980-1982 and 1990-1992 to show the trend for a decade. As it is seen in the table, there has been a general decline in the self-sufficiency ratios between the 80s and 90s. But this should not be interpreted as a decline in the agricultural production potential ; instead, it is a result of the trade liberalisation policy of the Government. Nevertheless, it can be concluded that, at present, Turkey is a self-sufficient and food secure country and is likely to stay so in the future.

The export-import balance of selected food products is summarized in *Table 4*. As outlined in the table, the major agricultural export item of the country is fruits (including nuts) and vegetables representing 932 million US \$. Turkey is a net exporter of pulses, fruits and vegetables, live animals, wheat flour and tomato paste, and net importer of crude vegetable oils, oil seeds, some dairy products and other animal products. For other items, the export-import balances are not stable and subject to change according to climatic conditions and incentive policies implemented by the Government.

V – Conclusions

The growth in agricultural output has largely been achieved through increases in yields. While the cultivated and sown lands has been increased nearly twofold between 1940 and 1992 (14.8 and 27.3 million hectares, respectively), crop production has been multiplied by 3 to 25 ; there have been impressive increases in livestock yields but all of them still remain low relative to yield levels in Europe and OECD countries including Mediterranean countries.

Turkish agriculture still suffers from a number of chronic structural and institutional weaknesses. Farms are characteristically small and fragmented; most of them rely on family labour and, typically, educational attainment levels are not satisfying. The total work force in Turkish agriculture has remained virtually stagnant over time, the number of farm enterprises has increased, and the average farm size has decli-

ned. Elements of the social infrastructure such as schools and advisory services, are improving, yet with no great impact on the transformation of the traditional Turkish farmer into a market-oriented producer using modern scientific practises, except for the growers of high-value crops, particularly vegetables and cut flowers grown under protection.

One consequence of fragmentations, together with the related lower capital intensity of Turkish agriculture and less frequent resort to advanced technologies, is that productivity and the value added per worker in agriculture is well below the level observed in the rest of the economy. Not surprisingly, considering the low productivity of the sector, agricultural incomes are only around one-fifth to one-quarter of incomes in non-agricultural sectors.

The strengthening policy reform to achieve the longer-term objectives of lower support and market orientation in the agricultural sector clearly needs to take into account Turkey's specific conditions and level of economic development. Such a reorientation of agricultural policy could involve the following key actions aimed at better targetting policy measures and consolidating reforms already made or underway: (i) reduce overall support, especially for those commodities that currently receive highest levels of support; (ii) prepare a time table of annual reductions in support, shift to alternative measures, and make regular and publicly available assessments of the progress achieved towards a market-based agri-food sector; (iii) focus policy measures more on education, training, research and development, extension, and on upgrading the quality of produce and its marketing; (iv) move away from price support, import restrictions, and input subsidies; reduce import tariffs over time as production patterns shift towards Turkey's comparative advantage; and (v) increase the role played by targeted direct payments to deal with the structural adjustment consequences of reform and, in the context of a comprehensive rural development policy, in addressing the problem of rural poverty.

Achieving these long term objectives will require time; and in pursuing them consideration will have to be given to maintaining an appropriate balance between feeding the population (above 60 million), addressing rural problems, protecting the environment, and providing economically efficient employment opportunities.

References

- **Anonymous** (1993). *Review of agricultural policies in Turkey*. OECD Cooperation and Development Directorate for Food, Agriculture and Fisheries, Committee for Agriculture COM/AGR/APM/TD/WP/(93)105.
- **Anonymous** (1993). *Turkey horticulture sub-sector review*. Ministry of Agriculture and Rural Affairs, Food and Agriculture Organisation of The United Nations Investment Center, FAO/World Bank Cooperative Programme.
- **Uzunlu, V. and Bayaner, A.** (1993). National agricultural research systems strategies towards food security: the case of Turkey. In *Agricultural Research and Food Security*, CIHEAM/CCE-DGI, Vol.1, no. 5, pp. 53-59, Cahiers Options Méditerranéennes. Montpellier: CIHEAM.
- **Eryilmaz, A.** (1994). *An overview of Turkish agriculture*, 62nd IFAD Annual Conference, May 9-12, 1994, Istanbul.

Table 1. Per capita consumption of agricultural products in Turkey and Italy

Product	Turkey			Italy
	1979-80 kg	1984-85 per person	1987-88 per year	1987-88
Cereals	243	183	194	115
Pulses	9	13	13	3
Fruits & vegetables	288	278	278	288
Meat	25	26	24	86
Milk (fresh)	21	26	40	74
Eggs	4	4	5	11
Fish	5	7	6	13

Source: OECD, Food Consumption Statistics, 1991.

Table 2. Interest rates charged for loans to farmers compared with interest rates on commercial loans in Turkey (1979-1993) (%)

	Interest rates charged on loans for animal husbandry	Interest rates charged on loans for crop prod. (*)	Interest rates charged on commercial loans	Annual increase in wholesale price index (%)
1979	15	15	18.3	64
1980	16	16	25.7	107
1981	23	23	34.2	37
1982	21	21	36.0	26
1983	21	21	34.0	32
1984	28	28	53.3	51
1985	32	32	60.0	39
1986	22	32	58.5	30
1987	22	32	55.9	36
1988	29	42	74.9	71
1989	38	46	85.0	64
1990	38	46	78.3	51
1991	38	46	81.5	53
1992	38	46	85.0	61
1993	38	46	85.0	58

(*) Excluding sugarbeet growers.

Sources: Interest rates, Agricultural Bank; changes in the wholesale price index, OECD Economic Surveys (1985-1993).

Table 3. Self-sufficiency ratios for some important agricultural food products

Commodity	Self-sufficiency ratio (%)	
	1980-1982	1990-1992
Wheat	145	114
Barley	106	112
Maize	100	95
Rice	n.a.	46
Sunflower	95	83
Soybeans	n.a.	19
Sugarbeet/sugar	122	100
Milk (*)	99	95
Beef & veal	104	86
Mutton-lamb	125	110
Chicken meat & eggs	102	100

(*) Cows milk only.

Source: Based on Statistics provided by The State Planning Organisation (SPO).

Table 4. Export and import values of some food products in 1992 (million US \$)

Commodity	Export value	Import value
Cereals	415,5	155,7
Pulses	200,0	/
Oilseeds	13,3	57,6
Fruits & Vegetables	932,0	/
Live animals	125,8	109,0
Beef & veal	8,6	30,0
Aquacultural products	49,9	19,1
Refined sunflower oil	90,0	/
Refined sugar	122,0	4,0
Wheat flour	92,0	/
Tomato paste	100,0	/
Crude sunflower oil	/	139,0
Other crude veg. oil	/	194,0
Milk powder	/	11,0
Butter	/	7,0
Cheese	/	8,0

Sources: Undersecretariat of the Treasury; Foreign Trade.

