

EMERGING
ECONOMIES
TRANSITION

Review of Agricultural Policies

ROMANIA

AGRICULTURE AND FOOD



OECD 

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*Review of
Agricultural Policies*

ROMANIA



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FOREWORD

Agriculture in Romania is a sector of considerable potential – but not under current structural conditions. Employing some 36% of the working population and contributing 15.9% to GDP in 1999, agriculture is economically more important than in any other country in central and eastern Europe except Albania. But its role as an occupational and social buffer has resulted in low labour productivity and hidden unemployment, seriously impeding structural adjustment and modernisation of the agricultural sector and blocking its development in line with comparative advantage. Despite natural conditions conducive to thriving agricultural production and abundant farm labour, Romania has become a net agro-food importer during the transition period.

In this comprehensive review of Romanian agricultural policies during the transition period from 1989 until 1999, the OECD analyses the development of the agricultural sector and, in close collaboration with Romanian experts, draws conclusions to help Romanian agricultural policy-makers shape their medium- and long-term reform strategy. Fundamental changes are called for at both the farm level, especially in terms of land consolidation, as well as in the uncompetitive agroprocessing sector. Government policy should be targeted at developing market infrastructure, market transparency and price information systems. Establishing a viable financial institutional framework is a critical challenge. More attention needs to be paid to environmental issues. A supportive, stable and consistent macroeconomic and institutional framework is indispensable to make these changes feasible.

This study of Romania's agricultural policies, undertaken in the framework of the programme of the OECD's Centre for co-operation with Non-Members, was made possible through voluntary contributions from France and the Netherlands. Andrzej Kwiecinski of the OECD's Directorate for Food, Agriculture and Fisheries led the study with major contributions from Olga Melyukhina and Claude Nenert. Substantial input was provided by Romanian experts, including Dinu Deaconescu, Cristina Esanu, Dinu Gavrilesco, Daniela Giurca, Mirela Rusali, Camelia Serbanescu and Luiza Toma from the Institute of Agricultural Economics and Jacqueline Leonte from the Ministry of Agriculture and Food. The Review benefited from the co-operation of Dutch experts led by Huib Silvis from the Agricultural Economics Research Institute in The Hague as well as from reading and comments by the Romanian experts from the Ministry of Agriculture and Food and from the Ministry of Industry and Commerce. Technical and secretarial assistance was provided by Anita Lari.

The study was reviewed in a roundtable with Romanian officials and experts in Bucharest in February 2000. Subsequently Romanian agricultural policies were examined by the OECD's Committee for Agriculture, meeting in an informal session in April 2000 and bringing together policy-makers from Romania and the OECD Member countries. The report is published under the responsibility of the Secretary-General of the OECD.

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TABLE OF CONTENTS

SUMMARY AND CONCLUSIONS	9
A. The economic and agricultural environment	10
B. International trade relations	12
C. Agro-food restructuring	15
D. Agricultural policies	18
E. Support to agriculture	23
F. Conclusions and policy recommendations	26
Part I. ECONOMIC AND AGRICULTURAL ENVIRONMENT	29
A. General aspects	29
B. Agricultural situation	38
Part II. AGRO-FOOD FOREIGN TRADE	59
A. Trade flows	59
B. Trade relations	67
Part III. PRIVATISATION AND STRUCTURAL CHANGE IN THE AGRO-FOOD SECTOR	75
A. Land ownership in Romania – historical overview	75
B. The process of land and agrarian reform	77
C. Privatisation in the upstream and downstream sectors	85
Part IV. AGRICULTURAL AND FOOD POLICY OBJECTIVES AND MEASURES	97
A. Agricultural policy framework	97
B. Price and income support measures	101
C. Foreign trade measures	119
D. Reduction of input costs	124
E. Infrastructural measures	135
F. Rural development policy	143
G. Social measures	144
H. Environmental measures	145
I. Consumer measures	147
J. Overall budgetary outlays on agro-food policies	148
Part V. EVALUATION OF SUPPORT TO AGRICULTURE	153
A. Aggregate results	154
B. Exchange rate sensitivity	157
C. Decomposition analysis of support	158
D. Analysis of support by commodity	162
Annex I. ENVIRONMENTAL PERFORMANCE OF ROMANIAN AGRICULTURE DURING THE TRANSITION: SELECTED ENVIRONMENTAL INDICATORS	169
A. Introduction	169
B. Total and agricultural land use	169
C. Nutrient use	172
D. Pesticide use	176
E. Water use	176
F. Soil quality	179

G. Water quality	181
H. Organic farming	182
I. Agri-environmental expenditures	182
J. Conclusions	183
<i>Annex II. ASSISTANCE TO ROMANIAN AGRICULTURE</i>	184
Introduction	184
A. Concepts and Methodology	184
B. Estimation of Romanian PSEs and CSEs from 1986 to 1999	188
TABLES FOR CALCULATION OF ESTIMATES OF SUPPORT TO AGRICULTURE – DEFINITIONS AND SOURCES.....	193
BIBLIOGRAPHY	235

List of Boxes

I.1. The Public Management System of Romania (as of end 1999).....	31
II.1. Institutional Framework for European Integration	68
II.2. The European Commission's conclusions on Romanian agriculture and agricultural policy.....	70
III.1. Organisation and management of collective and state farms	77
III.2. Legal framework for the dismantling of the collective and state farms.....	79
III.3. Privatisation of pig and poultry state farms	81
III.4. AgroFam Holding, Ialomita County	84
III.5. Privatisation in the upstream sector	89
III.6. Privatisation of Romcereal.....	92
IV.1. Banca Agricola and its role in providing credit to the agro-food system	126
IV.2. Voucher programme in 1997-1998	133
IV.3. Legislative and institutional framework related to protection of natural resources in agriculture	147
V.1. Definitions of the OECD indicators of support.....	153
V.2. Transfer efficiency in agricultural support policies	157

Annexes

I.1. The OECD soil surface nitrogen balance.....	174
I.2. Major soil erosion impacts from agricultural activities in Romania	180
II.1. Classification of policy measures included in the OECD indicators of support.....	185
II.2. Transfers associated with market price support.....	189

List of Tables

I.1. Selected macroeconomic indicators, 1989-1999.....	33
I.2. The structure of GDP at current prices, 1990-1998	34
I.3. Structure of employment, 1990-1998	35
I.4. Share of agro-food sector in the economy, 1988-1998	39
I.5. Price indices, 1991-1998.....	40
I.6. Changes in gross agricultural output (GAO), 1989-1998	42
I.7. Crops: sown areas, 1988-1999.....	44
I.8. Production of major crops, 1988-1999	44
I.9. Animal numbers, 1988-2000	45
I.10. Production of basic animal products, 1988-1999	46
I.11. Rural population and agricultural employment, 1990-1998	46
I.12. Agricultural employment by farm ownership type, 1985-1997	47
I.13. Agricultural employment by occupational status.....	48
I.14. Agricultural employment by age group	48
I.15. Nominal average monthly salaries 1990-1997, in Lei.....	49
I.16. Nominal monthly average incomes in households, 1997-1998	49
I.17. Fleet of tractors and agricultural machinery in Romania, 1989-1999	50
I.18. Food industry output, 1989-1999.....	52
I.19. Food consumption pattern, 1980-1998	53
II.1. Agricultural trade, 1986-1999.....	59
II.2. The share of net agro-food imports in total value of agricultural production in Romania, 1989-1998	61
II.3. The share of net imports of selected agricultural products in total domestic use in Romania, 1989-1998	61

II.4.	Agro-food imports by group of products and main suppliers in 1998.....	63
II.5.	Tariff rate quotas within Romanian UR commitments.....	72
II.6.	Romanian export UR commitments	73
III.1.	Agricultural land ownership pattern in Romania, 1989.....	77
III.2.	Structure of agricultural land in private ownership, 1993-1999	82
III.3.	Privatisation of food processing enterprises (total numbers, November 1999).....	90
III.4.	The share of private processors in total market supplies of selected food products between 1992 and 1998	91
III.5.	Food retail marketing (billion Lei, current prices)	93
IV.1.	Price support payments in 1990-1998.....	102
IV.2.	Government fixed prices for main crop products in 1989-1996, Lei per kg.....	103
IV.3.	Government fixed prices for main livestock products in 1989-1996.....	103
IV.4.	Grain area, yield and production	107
IV.5.	Maize: procurement, peasant market and average producer prices.....	108
IV.6.	Wheat and rye: procurement, peasant market and average producer prices.....	109
IV.7.	Oilseed area, yield and production	110
IV.8.	Sunflower: procurement, peasant market and average producer prices.....	110
IV.9.	Sugarbeet area, yield and production	111
IV.10.	Sugarbeet: procurement, peasant market and average producer prices	111
IV.11.	Potato area, yield and production.....	112
IV.12.	Potatoes: procurement, peasant market and average producer prices.....	112
IV.13.	Fruits and vegetables area, yield and production	113
IV.14.	Pig inventories and pigmeat production.....	114
IV.15.	Pigmeat: procurement, peasant market and average producer prices	114
IV.16.	Poultry inventories and poultrymeat and egg production.....	115
IV.17.	Poultry: procurement, peasant market and average producer prices.....	116
IV.18.	Eggs: procurement, peasant market and average producer prices	116
IV.19.	Cattle inventories and beef and veal production	117
IV.20.	Beef and veal: procurement, peasant market and average producer prices	117
IV.21.	Cow inventories and milk production.....	118
IV.22.	Milk: procurement, peasant market and average producer prices.....	119
IV.23.	MFN import tariffs for basic agro-food products in Romania, per cent.....	121
IV.24.	Non-tariff export measures for agricultural and food products, 1991-1998.....	123
IV.25.	Annual preferential credit allocations to agro-food sector, billion Lei.....	125
IV.26.	Estimated transfers to agro-food sector associated with preferential interest rates and debt forgiveness, billion Lei	129
IV.27.	Composition of input subsidy in 1986-1990, per cent	131
IV.28.	Composition of input subsidy in 1991-1999.....	131
IV.29.	Romanian system of standards before and after 1990.....	139
IV.30.	Composition of budgetary transfers to agro-food sector in 1986-1990, per cent	148
IV.31.	Budgetary and quasi-fiscal transfers to agro-food sector in 1991-1999 General indicators, billion Lei.....	149
IV.32.	Composition of budgetary transfers to agro-food sector in 1991-1999, per cent	151
V.1.	Aggregate percentage PSEs and CSEs for Romania, 1986-1999.....	154
V.2.	Official and adjusted exchange rates, Lei/US\$.....	158
V.3.	Composition of support to agricultural sector in Romania, per cent.....	159
V.4.	Composition of food consumer support in Romania, per cent.....	160
V.5.	Distribution of total value of PSE by specific commodities, per cent.....	160
V.6.	Romanian percentage PSE, by commodity	162
V.7.	Romanian percentage CSE, by commodity	163
<i>Annexes</i>		
I.1.	Conversion of land to and from agriculture.....	170
I.2.	Agricultural land use	172
I.3.	Water supply by user categories	177
I.4.	Agricultural water abstractions.....	177
I.5.	Water prices by water use, 1997	177
I.6.	Soil depletion factors and the size of affected agricultural area, 1992 and 1997	179
I.7.	Soil erosion vulnerability of agricultural land.....	180

I.8.	Soil erosion intensity of agricultural land.....	180
I.9.	Erosion by land use.....	181
I.10.	Surface water quality.....	181
I.11.	Condition of main waste water treatment plants in 1997.....	182
I.12.	Environmental expenditures.....	183
I.13.	Structure of agricultural environmental expenditures.....	183

List of Graphs

I.1.	Gross domestic product in transition countries in 1998.....	34
I.2.	Share of agriculture in GDP, 1997.....	39
I.3.	Price relationship, 1990-1998.....	41
I.4.	Agricultural output/input price index ratio, 1990-1998.....	41
I.5.	Gross agricultural output, 1990-1998.....	42
I.6.	Production development of some agricultural products in Romania, 1988-1999.....	43
I.7.	Share of agriculture in total employment, 1997.....	47
I.8.	Chemical fertiliser use (active substance Kg/ha) 1988-1998.....	51
II.1.	Romania's agro-food trade balance by product group, 1986-1998.....	60
II.2.	Romania's agro-food imports by regions in 1998.....	62
II.3.	Romania's agro-food exports by regions in 1998.....	62
II.4.	Main suppliers of agro-food products to Romania, 1998.....	63
II.5.	Main export markets for Romanian agro-food products, 1998.....	64
II.6.	Romania's agro-food imports by product group, 1986-1998.....	65
II.7.	Romania's main agro-food imports in 1998.....	65
II.8.	Romania's main agro-food exports in 1998.....	66
II.9.	Romania's agro-food exports by product group, 1986-1998.....	67
III.1.	Farm structures in Romania: shares in total agricultural land in 1989 and 1999.....	82
III.1.	The state managed distribution system under Communism.....	86
IV.1.	Producer wheat price.....	106
IV.2.	Producer pork price.....	106
IV.3.	Producer poultry price.....	106
IV.4.	Producer milk price.....	106
IV.5.	Distribution of price support payments by specific products, mid 1993-1996.....	107
IV.6.	Fixed interest rates under preferential short-term credit, commercial rates and CPI.....	128
IV.7.	Shares of budgetary and quasi-fiscal transfers in the total transfers to agro-food sector.....	150
IV.8.	Composition of budgetary transfers to agro-food sector.....	151
V.1.	PSEs by country and OECD average, 1986-1999.....	155
V.2.	Total support estimate by country, EU and OECD average 1999.....	156
V.3.	PSEs for Romania at adjusted and official exchange rates.....	158
V.4.	Composition of support in Romania, 1990-1999.....	159
V.5.	Percentage PSE for crops and livestock, 1986-1999.....	161
V.6.	Romanian percentage PSE in 1999, by commodity.....	162

Annexes

I.1.	Structure of total land use in Romania, 1995-1997 average.....	169
I.2.	Net changes in total land use, 1985-1989 to 1995-1997.....	170
I.3.	Afforestation in Romania.....	171
I.4.	Structure of agricultural land, 1995-1997 average.....	171
I.5.	Net change in agricultural land, 1985-1987 to 1995-1997.....	172
I.6.	Romania's agricultural nitrogen balance estimate, 1985-1997.....	173
I.7.	Nitrogen balance estimates for Romania and selected OECD countries.....	175
I.8.	Romania: trends in agricultural nitrogen balance, inputs and crop uptake, 1995-1998.....	175
I.9.	Pesticide consumption.....	176
I.10.	Area provided with irrigation facilities and actually irrigated area.....	178
I.11.	Share of main crops in the total area under irrigation in 1997.....	178
II.1.	Exported commodities.....	189
II.2.	Imported commodities.....	189
II.3.	Measurement of the margin between farm gate and frontier.....	191

SUMMARY AND CONCLUSIONS

The dramatic events of December 1989 symbolise the beginning of Romania's return to a democratic and market-oriented system. The first post-communist governments adopted a gradual approach to reforms, which resulted in their fragility, in unequal progress in reforming different sectors of the economy and in structural imbalances. While agriculture has been largely privatised, upstream and downstream sectors have not been restructured and, for the most part, remained until recently in state ownership. Small-scale farming operates on the majority of agricultural land, but the marketing system has been oriented toward servicing large-scale farms. Given the declining production on state owned farms, small farms' weak integration into markets, and an inefficient food processing sector, Romania is a net importer of agro-food products, despite soil and climatic conditions conducive for agricultural production and abundant farm labour. Since 1997, the Romanian government, with the support of international institutions, has made efforts to correct some of these imbalances. But not until the end of 1998, when facing the need for balance-of-payments support from the IMF, did the government adopt an anti-crisis programme which accelerated structural reforms, including in the agro-food sector.

In a deteriorating employment situation agriculture acts as a buffer in labour markets, absorbing 36% of total employment. However, this role imposes substantial economic and social costs on rural areas, as it impedes necessary structural adjustment in agriculture by freezing the highly fragmented land ownership pattern and compounds the problems of low incomes and disguised unemployment in rural areas. It also increases the political pressure on governments to address the symptoms of the structural problems through subsidies and market distorting interventions. The key priority in Romania is to develop a policy targeted at removing constraints that impede the flow of labour from agriculture into activities with higher value added, and thus the growth of employment, incomes, and welfare in rural areas. Within a framework of general economic liberalisation and reforms, such a strategy could include investment in rural infrastructure and education, and the stimulation of rural non-farming activities/enterprises. Such a strategy will be costly and will not bring immediate results, but would address the causes rather than symptoms of agricultural sector inefficiencies.

A stable macroeconomic and institutional framework is essential to agricultural reform in Romania, but the progress in macroeconomic stability achieved over the last three years has not yet been satisfactory. To complement and strengthen macroeconomic reforms, policies aimed at removing market inefficiencies, setting up adequate rural finance institutions, establishing the necessary market infrastructure to link producers with consumers, and fostering transparency in policy implementation are still needed in Romania. The 1997 price and trade liberalisation measures were a move towards less distorted markets, and this momentum should not be lost if more progress in the restructuring and competitiveness of the agro-food sector is to be achieved.

The level of government support for agriculture fluctuated between 1986 and 1999, but indicates that over the whole period under study Romanian producers were subsidised. In particular, the percentage Total Support Estimate (TSE) was high in 1999 at 5% of GDP, compared to the OECD and EU averages at below 2%. Such a high percentage TSE indicates that for a relatively poor country with a large agricultural sector, as in Romania's case, the cost of agricultural support related to a low GDP is very high.

In December 1999 the European Union invited Romania to launch accession negotiations, together with several other CEEC. To face future competition within the European single market, Romania would benefit from adopting open-trade and low price distorting support policies in order to assist and encourage greater agro-food sector competitiveness. Placing greater emphasis on improving the economic efficiency of the whole food chain would enhance its competitiveness and improve the terms of trade for agricultural producers during the period prior to EU accession and thereafter.

A. The economic and agricultural environment

1. Macroeconomic framework

The gradualist approach to reforms led to delays in structural reforms

At the end of the 1980s the Romanian economy was on the verge of collapse and the population was deeply traumatised by Ceausescu's authoritarian rule. The first post-communist governments at the beginning of the 1990s sought popular support through policies to improve living standards in the short term and to minimise the social costs of transformation of the previous economic and institutional structures. Social and "historical justice" objectives such as protecting employment in the restructured enterprises, or distributing the "national wealth" to the population, predominated over the economic objectives of privatisation programmes, such as improving efficiency and attracting capital for the modernisation of Romanian industry. This resulted in a **gradualist approach** to macroeconomic and structural reforms. In particular, structural reforms were lagging with the state support for industry wasted on large state-owned companies, which lacked financial discipline.

Shock therapy of 1997 reshaped the macroeconomic framework, but...

The elections of November 1996 brought a coalition of centre-right parties and a new President to power. In February 1997, the government put in place a "**shock therapy**" programme of both macroeconomic and institutional reforms. The programme was based on a legislative package of about one hundred laws and included the liberalisation of prices that were still under state control, liberalisation of the exchange rate regime, reduction of import tariffs, removal of subsidies, phasing out of directed credits for agriculture, and the promotion of foreign investment. Financial discipline was to be enforced by the privatisation or liquidation of loss-making state-owned enterprises.

... it was not until the end of 1998 that structural reforms were accelerated

Tight monetary policies helped to achieve some progress in macroeconomic stabilisation in 1998. In particular, the inflation rate (CPI) fell sharply. However, the **Romanian economy contracted** each year between 1997 and 1999, the budget deficit remained high, and the rate of unemployment rose. Privatisation and restructuring were continued, albeit slowly. The banking sector remained under pressure from debt overhang and undercapitalisation. Romania lacked goods that would be competitive on the international markets. This contributed to an increase in the foreign trade deficit in 1998. New impetus to structural reforms, including accelerated privatisation, was given at the end of 1998 with the adoption of the anti-crisis programme. This helped to achieve an agreement with the IMF on a new loan facility in August 1999. In 2000 the GDP is projected to grow at just about 1%, but with the accelerated structural reforms, Romania may finally create adequate conditions for reviving stronger economic growth in the medium term.

2. Agriculture in the economy

Romania is a major agricultural producer

With 14.8 million hectares of **agricultural land** Romania is the second largest agricultural producer in central and eastern Europe, after Poland. Both soil and climate conditions in Romania are conducive to efficient agricultural production.

The share of agriculture in national employment was 36% and its **contribution to GDP** was 16% in 1998, such that agriculture in Romania is more important than in any other central and eastern European country, except for Albania. In contrast to most other countries in the region, the share of agriculture in GDP rose substantially after the start of transition, mostly due to sharp declines in other sectors of the economy as production in agriculture fell in 1990 and remained relatively stable since then. The share in employment was about 8 percentage points higher in 1998 than at the start of transition, partly due to a **rise in agricultural employment**, but also due to a fall in other sectors of the economy. Agriculture has acted as an **occupational buffer** against the socio-economic effects of the transition, by absorbing the labour made redundant by urban industries. While land ownership has the merit of shielding most of the rural population against extreme poverty, a fall in agricultural output coinciding with a rise in employment indicates a fall in output per worker and suggests growing hidden unemployment in rural areas. Such a situation is the main cause of low per farmer income, contributing to high poverty rates in rural areas.

Agriculture's share in GDP and employment remains high

In the second half of the 1980s **food consumption** in Romania fell and was lower than in most other central and eastern European countries, and the Soviet Union. This was partly due to the trade policies of the Romanian authorities, restricting imports and enforcing agro-food exports to repay foreign debts. In 1990 meat and milk consumption substantially increased, reflecting a reversal in the government trade policy in order to increase domestic supplies of food at “affordable” (controlled) prices. However, since 1991 the downward trend in meat and meat products consumption resumed. While milk consumption fluctuated, consumption of other food products stabilised, or showed a slight increase in the 1990s. The increase in consumption of such products as potatoes and cereals reflects the gradual reduction of purchasing power, leading consumers to seek cheaper basic food products. On average, some 59% of total household expenditures was spent in 1997 on food items, demonstrating the relatively **low standard of living** of the majority of Romanian families.

Food consumption has fallen while the share of food in total expenditures is high

Between 1990 and 1998, agricultural input prices rose by about 1.5 times more than output prices, resulting in a substantial **cost-price squeeze** over this period. However, it should be noted that the worsening of the output/input prices occurred in all countries in transition at the beginning of the reform process and relative price changes placed Romania among those countries where the price-cost squeeze was not particularly strong, which included the Czech Republic and Lithuania.

The severe cost-price squeeze...

The volume of **Gross Agricultural Output** (GAO) fell by 3% in 1990 and since then has been fluctuating around the 1990 level. In 1998, the GAO was just 2% lower than in 1990, despite significant worsening of agricultural terms of trade over this period. Of the central and eastern European countries, Romania has been the country with the smallest fall in agricultural production since the transition began, except for Albania. This is due to a relatively high level of support provided for agricultural production in particular up to 1996, but also to the large share in production of the small-scale farming that resulted from the privatisation process. This type of farming, mostly for self-consumption, has been loosely linked with the market and rather immune to the adverse

... contributed to a fall in agricultural production

changes in prices. The same phenomena can be observed in some other countries in transition, such as Poland, but in particular in the household plot production in the New Independent States, such as in Russia. However, given an abrupt change in the land-use pattern in Romania and, in particular, a large share of self-consumption in total production, the data on the volumes produced and consumed in Romania are to a large extent estimated and have to be interpreted with caution.

***Crop production
has fluctuated...***

The share of **crop production** in total GAO has fluctuated in the transition period between 53% and 63%, reflecting large changes in volumes produced from one year to another. Grain output has varied between 12 and 22 million tonnes. These variations are mainly due to weather conditions, to which Romanian farmers are quite vulnerable, as the use of fertilisers and pesticides has dropped to low levels and technologies applied have deteriorated. Other factors contributing to these fluctuations were changes in price conditions, the impact of land reform, and the deteriorating irrigation system.

***... and livestock
production
has fallen***

Livestock sector production rose in 1990, but then fell and in 1998 was about 12% lower than in 1989. The downward trend in livestock production has been caused by the fall in domestic demand for meat, but also by a set of other factors having negative impacts on the livestock numbers, which halved between 1989 and 2000. The main reasons for such a fall were: the dissolution of the co-operatives specialising in livestock production and the unsuitability of their buildings and technical equipment for small-scale farming; the removal of subsidies for and partial privatisation and liquidation of state farms specialising in pig and poultry production; the inefficiency of the upstream and downstream sectors passing their high costs of production onto producers and consumers; the inadaptability of marketing systems to small-scale farming; and rising prices for inputs making them inaccessible for small-scale producers. Due to these problems, small-scale farmers adjusted the livestock numbers to the needs of their own families and to the limited opportunities of selling animal products on the local markets. As opposed to meat, milk production has increased in recent years due to higher milk yields per cow. However, the domination of small-scale milk production is a major impediment to further development of the sector as small farms lack capital for investment and dairies face difficulties in milk collection and enforcing quality standards.

B. International trade relations

1. Agro-food trade

***Romania has been
a net importer
of agro-food products
during transition***

Under the communist regime Romania was a net agro-food exporter, but exports contracted in the second half of the 1980s, even if they were administratively enforced to repay external debts. In 1990 Romania became a net importer of agro-food products and remained such during the whole transition period. However, three phases can be distinguished during this period: 1990-1993 with a strongly negative agro-food trade balance; 1994-1997 characterised by an improvement in the trade balance; and 1998-1999 with strong fluctuations in the trade balance. The main factors contributing to these variations were: changes in trade relations at the beginning of transition; frequent changes in trade policy; fluctuations in the volumes of agricultural production; and, finally, changes in macroeconomic policy, in particular concerning the exchange rate.

During 1997, Romania liberalised its highly protective agro-food import regime, partly due to the pressure from international financial institutions, but also due to Romania's accession to the Central European Free Trade Agreement (CEFTA). Trade liberalisation coincided with a substantial fall in crop production due to unfavourable weather conditions; a strong fall in agricultural commodity prices on international markets; and a considerable real appreciation of the Leu. All these factors contributed to the **rise in the net agro-food imports** to almost US\$0.6 billion in 1998, compared to US\$0.1 billion in 1997. In 1999, the trade balance in agro-food products remained negative, but improved with exports rising and imports substantially falling.

Agro-food imports rose in 1998

During the reform period Romania has become a net importer of agro-food products vis-à-vis most of its trading partners, but in particular the European Union, which accounted for about one half of Romania's agro-food trade deficit. The **European Union is by far the most important trading partner** in agro-food products, absorbing in 1998 some 34% of Romanian agro-food exports and providing 35% of Romania's food imports. The CEFTA is Romania's second largest trading partner in agro-food products. In 1998, Romania's main food suppliers were Hungary, Germany, the USA, and Brazil, and the main export markets for Romanian agro-food products were Italy, Turkey, Germany, and Hungary.

The European Union is the most important trading partner

Despite the persistent negative balance of trade in agro-food products, **Romania has been almost self-sufficient** in the production of all major agricultural products, with the clear exception of sugar. Related to GAO, net agro-food imports peaked in 1992 at 10%, fell to below 1% in 1997, but rose again to about 5% in 1998. A distinct feature of Romania's agro-food trade is the large net imports of processed food, beverages and tobacco. Between 1994 and 1998, imports of foodstuffs, beverages and tobacco represented on average above 60% of the total Romanian agro-food imports. Conversely, exports mainly consisted of non-processed agricultural commodities with a low value added, such as grains, live animals and oilseeds. The only processed products exported in relatively large quantities are sunflower oil and wine.

Romania has been almost self-sufficient in food production, but...

The trade structure suggests that the **inefficient food-processing industry** inhibits improvement in Romania's agro-food balance of trade. Other institutional and structural factors undermining the competitiveness of Romanian agriculture on international markets include: an infrastructure that is not adjusted to collect and handle agricultural products from the dominating sector of small-scale producers; the lack of quality standards fully harmonised with those internationally recognised; poor enforcement of existing quality standards; and poor information about international markets.

... the unrestructured food-processing industry and infrastructural deficiencies undermine competitiveness

2. International trade agreements

The collapse of the Council for Mutual Economic Assistance (CMEA), the new political environment and the abolition of the foreign trade monopoly required **new trading arrangements**. Romania signed the Uruguay Round Agreement in 1995 and its trade policy is undertaken within the principles and rules of the WTO. In December 1992, Romania signed the European Free Trade Agreement and in February 1993 the EU Association Agreement. In October 1993, Romania received Most Favoured Nation (MFN) Status from the US. In

Romania has negotiated new trading arrangements

December 1994, a Free Trade Agreement with Moldova was signed followed by a similar agreement with Turkey, signed in April 1997. In July 1997 Romania became a member of the Central European Free Trade Agreement (CEFTA).

The impact of the EU Association Agreement on trade flows remains limited

Romania's strategic goal is to join the European Union. The **EU Association Agreement**, or Europe Agreement, was ratified in 1995. Trade provisions were already included in the Interim Agreement implemented in 1993. In practice the liberalisation of agricultural trade provided in the framework of the Agreement has not been substantial and its impact on Romania's agro-food exports has been minor. Tariff-quotas have been little utilised by Romanian exporters partly due to the fact that the agreed quotas do not reflect the current export potential of Romanian agriculture, as reshaped by the land privatisation and farm restructuring policies of the 1990s. Other explanations relate mostly to the more general impediments to Romanian export growth. Romania's agro-food imports from the European Union have increased significantly during the period of the Agreement's implementation, but this is due to the low competitiveness of the Romanian agro-food industry and general liberalisation of Romanian agro-food imports rather than to the Agreement as such. At the December 1999 Helsinki summit the European Union extended an invitation to Romania to start accession negotiations, along with several other associated countries. Official negotiations were opened in February 2000 and prospects for EU membership will have a growing impact on Romania's policy making.

CEFTA membership had a relatively strong impact on agro-food imports

In 1997 Romania joined the **CEFTA**, considering accession to this agreement an important step in its strategy of integration into the European Union. The accession to the CEFTA resulted in further regional liberalisation of Romanian agricultural trade, most often within fixed quotas. Under CEFTA rules, only those countries are eligible for membership, which have signed EU Association Agreements, are members of the WTO and have signed bilateral free trade agreements with all CEFTA members. CEFTA membership contributed to a substantial rise in agro-food trade with the CEFTA members, particularly in imports. Claiming disruptions on domestic markets caused, among others, by cheap imports from Hungary, the Romanian government temporarily suspended tariff concessions on imports of Hungarian wheat and wheat flour. This measure was discontinued at the beginning of 1999, but in mid-1999 the government decided to suspend for one year the tariff reductions on imports of meat, meat products and canned meat from Hungary. As CEFTA lacks policy harmonisation between its members, members are rather reluctant to advance the liberalisation process, pressures occasionally build up as between Romania and Hungary, and import countries frequently apply countervailing measures, allowed within CEFTA as a temporary measure against import surges.

Romania maintained developing country status within the WTO

Within the GATT and since 1995 within the **WTO**, Romania has maintained **developing country status**, a unique case among central and eastern European countries. After the expiry of its current commitments in 2004, Romania is expected to change its WTO status to that of a developed country, in preparation for EU accession. Its developing country status enabled Romania to benefit from the "special and differential treatment" which allowed the country to set high tariff bindings for agricultural products and to benefit from lower reduction commitments and longer implementation periods. As a developing country, Romania also excluded certain domestic support from the WTO reduction commitment and, consequently, has no commitment to reduce total

Aggregate Measurement of Support (AMS). The *de minimis* provisions on developing country domestic support have been applied. Romania's commitments related to export subsidies are expressed in constant 1986-1989 prices, in order to protect subsidies from inflationary erosion. The list of products covered by export subsidy commitments incorporates the most important agricultural products, including cereals, oilseeds, sugar, cheese, butter, live animals and meat.

Up to now, the domestic support and export subsidy **commitments have not been constraining** Romania's agricultural policy or trade flows. However there is little room, also for budgetary reasons, for Romania to subsidise exports either within existing commitments or within future ones, which may be based on developed-country status. In submissions to the WTO, Romania has emphasised its support for a continuing process of multilateral trade liberalisation, including further liberalisation of agricultural trade, built on stronger harmonisation of agricultural policies applied across WTO members.

The WTO commitments have not constrained agricultural policy

C. Agro-food restructuring

1. Emerging farm structure

Farm restructuring and land privatisation in Romania included two different processes: **decollectivisation**, mainly through the restitution of land used by Agricultural Production Co-operatives (CAPs) to previous owners and distribution of the remaining land to farm workers and other eligible Romanian citizens; and **privatisation** of state owned land through sales, lease and concessions.

Decollectivisation and privatisation...

While the privatisation of former collectively owned land is completed (although a significant percentage of owners still have to receive ownership titles), the reform of state farms has hardly started, largely due to the unclear legal status of the land. The structure of land ownership changed radically and different types of farming emerged. The **private sector became dominant** operating on 85% of agricultural land. Excessive land fragmentation is considered one of the major obstacles to the development of a healthy agricultural sector. One of the objectives of the present agricultural policy is to increase the average size of private farms. Laws and regulations have recently been amended to allow for larger plots of land to be restituted to owners ("the second wave of restitution"), and to facilitate land leasing and selling.

... transferred most agricultural land into private ownership

Family farms

At the beginning of the land privatisation process new private landowners had the choice to start individual farming or to join newly established (formal or family) associations. The vast majority of them decided to establish individual private farms. In 1999, there were 4.1 million family farms, accounting for 68% of the agricultural area in Romania, with an **average size of 2.4 hectares**. Almost 70% of these farms owned less than 5 hectares and only 2%, more than 10 hectares. Surveys show that the typical farm household is made up of an elderly self-employed farmer with below average education, and female non-paid family workers. Given their sometimes extremely small scale, the majority of family farms play mainly a **social function** of providing basic means of subsistence for rural and, partly, urban populations. Self-consumption

Small private farms dominate, but...

leaves almost no production left to be sold on the market. It may be estimated that family farms contribute about 85% of the total value of agricultural production in Romania, but as on average only about 20% of family farms' production is marketed, their share in the marketed production may be at about one half. This implies that a large part of individual farms generate little or no cash income from agricultural activities and their future economic viability as commercial agricultural producers seems to be rather limited.

Farm associations

... farm associations and...

Some of the new private landowners decided to contribute their land to form large farms. Most often they decided to join formal or family (informal) associations. While **formal associations** are legal entities with a minimum number of members of at least 10, **family associations** are entities without legal status and are based on agreement between at least two families to pool their assets to produce, process and/or market their goods. The main motivation for joining the association was the high cost to start up an individual farm. Both the number of associations and the area cultivated by them have been declining. In particular, family associations tend to split into individual farms. In 1999 associations cultivated about 2.3 million hectares, which was 16% of total agricultural land in Romania.

Agricultural private companies

... private companies play an important role

In some regions, another option for small-scale landowners was to lease land to **emerging private companies** led by individual entrepreneurs. These companies have provided a constructive example of reallocation and concentration of land use in some regions in Romania in the situation of excessive fragmentation of land ownership and rather unfriendly legislation for large scale private farming (in particular up to 1997). They also demonstrate the potential for rapid development of agro-business in Romania, provided that reliable markets are found.

State farms

Privatisation of state farms is lagging behind

The public sector accounts for about 2.2 million hectares of agricultural land in Romania, or 15% of the total. About 1.7 million hectares are cultivated by agricultural commercial companies, averaging almost 3 000 hectares and scheduled for privatisation. The remaining 0.5 million hectares are to remain under public ownership. By November 1999, out of the 547 agricultural commercial companies foreseen for privatisation, only 20 were actually privatised. The remaining ones were **still mainly state-owned**, with the State Ownership Fund owning the majority of shares. Privatisation of state farms is lagging behind partly due to problems related to the legal status of the land. However, there has also been quite strong political opposition to privatisation of these farms, considered a crucial element of Romania's food security. Many of these farms are strongly indebted, which makes them unattractive for private investors and the liquidation procedure is seldom applied.

2. Land market transactions

The problem of excessive fragmentation of land ownership...

The process of land restitution and distribution has resulted in a **highly fragmented land ownership pattern**. By imposing a 10-hectare maximum for restitution and distribution, Romania attempted to combine the considerations of historical justice and equity. Efficiency considerations played a less

important role. Land reform in Romania resulted in a rather equitable distribution of land ownership. Romania is also one of the very few transition countries in which agricultural production has not fallen substantially since the transition started. However, land fragmentation is generally considered a major obstacle for technological progress in Romanian agriculture, as the majority of the subsistence farms will never have the financial means to invest in new machinery and other equipment. The additional transfer of about 1.7 million hectares of agricultural land within the second wave of restitution will probably strengthen a part of family farms. But the average size of land owned by households will increase by a maximum of 0.4 hectares to about 2.8 hectares, meaning that the problem of excessive fragmentation of land ownership will not be solved.

At the early stage of the reform, the consolidation of small plots into voluntary associations and/or agricultural private companies was relatively easy, as land was not yet divided into individual plots in physical terms. As a result quite an active land lease market developed, dominated by informal arrangements. This process has been poorly reflected in statistics as available data show the ownership pattern rather than **land use pattern**. Therefore, while land fragmentation within the family farm sector is a real problem in Romania, it is probable that an important part of land owned by rural and urban households is actually used by large farms. It is not until 2002, that the agricultural census is to be organised and the actual results of the land privatisation and farm restructuring will be known.

... may be somewhat mitigated by the actual land use pattern...

At the current stage of reform, the negative impact of excessive land ownership fragmentation can be gradually diminished only by **active land transactions**. The 1991 Land Law explicitly prohibited land sales, which impeded the consolidation of privately owned land into viable family farms. The more recent legislation passed in 1998 removed some previous constraints related to procedures and conditions for leasing and selling land between individuals, but the number of transactions has been low. Farmers receiving back their formerly owned land after so many years, may be unwilling to transfer their land to others. Moreover, in a highly unstable economic framework small holders prefer to keep their land as social security asset. Therefore, economic growth combined with higher real incomes and wider employment opportunities should stimulate land market transactions enhancing the emergence of viable family farms.

... but to further restructure Romanian agriculture active land market transactions are needed...

Several **restrictions to land transfers remain**, as subleasing is not allowed, and lessees are obliged to undertake formal training in agriculture. It is also required that land be used for farming, while in some locations land may be more productive in other uses. Moreover, land sales and land leasing to foreigners as physical persons are not allowed. In addition to legislation on ownership and land transfers, a proper land registration system would contribute to a well-functioning land market. At the end of 1999 there were about 25% of landowners who had not received their land titles. Temporary property certificates are common but may not be transferred, nor are they accepted as collateral for credits and loans.

... which require appropriate legislation

Agents throughout the food chain need to be privatised and commercially linked

3. Privatisation of upstream and downstream industries

The revitalisation of agriculture and its sustainable development will depend to a large extent on the privatisation and restructuring of the upstream and downstream enterprises. The economic *raison d'être* for privatisation is to create an **enabling environment** for the transfer of productive assets to those who have an active interest in using them in the most effective way and who are able to improve these assets through new investment. In turn, the creation of competitive commercial relationships between all agents in the food chain is a precondition for efficiently linking farmers with domestic and foreign markets through stimulating these agents to cut processing and handling costs.

Delays in privatisation need to be made up

However, while a large number of small-scale private food processing enterprises emerged in the 1990s, Romanian medium and large-scale upstream and downstream industries are characterised by a low level of productivity, over-capacity, outdated technologies, a lack of adaptation to demand and a monopolistic position vis-à-vis producers. This is largely due to the delays in structural reforms resulting from the Romanian government's **gradualist approach** to reforms. In late 1996 the newly elected government committed itself to accelerate the speed of privatisation and to put the privatisation policy into a wider programme of structural reforms, but it was not until late 1998 that the government gave new vigour to the process.

Linkages between small-scale producers and the downstream sector are weak

The volume of processed agricultural products has shown a downward trend since 1990, in particular of dairy products. The overall **downward trend** can be explained by reduced domestic demand, low competitiveness of the food industry on domestic and foreign markets, and reduced supply of agricultural products for processing. The latter results from an overall fall in marketed production, partly due to the lack of restructuring of market-oriented, large-scale agricultural enterprises, but even more to a substantial shift in land ownership to small-scale producers, producing mostly for own consumption and loosely linked with the market.

The inflow of FDI is small and privatisation methods have failed to inject necessary marketing and business skills

Foreign capital inflows remain small in Romania and the agro-food sectors benefited relatively little from FDI projects, as the pace of privatisation and restructuring was slow. The only sectors that attracted substantial FDI inflows up to the end of 1997 were the brewing, soft drinks, and confectionery industries. The privatisation of small and medium-size state enterprises has been dominated by the **Management-Employee Buyout** (MEBO) which transferred state ownership to employee associations, quite often lacking capital, management skills and experience in dealing with market conditions. For social reasons, the **bankruptcy** law has rarely been applied, blocking the flow of resources to more effective owners.

D. Agricultural policies

1. Policies in the pre-reform period

Agricultural policies in the pre-reform period...

The **main objectives** of Romania's agricultural and food policy in the pre-reform decade were: to guarantee the domestic food supply, with a special emphasis on securing the needs of the urban population; to ensure low and stable food prices; and to increase foreign currency earnings from agro-food trade. These objectives were to be achieved within the framework of the

command system, which was based on fixed prices, strict control of farms' output, direct budgetary financing of most of general services for agriculture and large-scale capital investments.

State planning imposed self-sufficiency at all levels, from local to national. State farms, agricultural co-operatives and even households having land plots were subject to production plans targeted at output maximisation. This stimulated production against efficiency considerations and led to **misallocation of resources**. There was an increasing conflict between the goal of supplying agro-food products for domestic consumption and that of enhancing agro-food export earnings. The political choice was to maintain export earnings at any cost, putting severe limitations on domestic consumption. Food rationing, possibly the most stringent and pervasive of any known by the central and eastern European countries, was established in Romania during the 1980s.

... led to misallocation of resources and to a severe food rationing system

2. *New agricultural policy objectives in the reform period*

The reform programme presented by the newly elected Romanian government in May 1990 set **food security** and development of **sustainable agriculture** as the main objectives of agro-food policy. Privatisation, improvement of producer incentives and stabilisation of agro-food markets were declared the major policy guidelines.

Policies applied after 1990...

Up to 1996, the government's commitment to improve food availability and minimise social costs of transition to a market-based agro-food system were tackled by large-scale **price interventions**, subsidies to producers and consumers and maintenance of substantial **state control** over the food production and distribution system. The policies continued to target the large-scale farms and reacted weakly to a major shift in the land ownership pattern, dominated by smallholders.

... relied on administrative controls...

Overall, agro-food policies applied in Romania up to 1996 were highly **distortive**, impeding restructuring and the development of market mechanisms. Despite the declared consumer protection goal, the policies exposed Romanian consumers to inefficient domestic agro-food agents operating in an overall environment that created few incentives for increased efficiency. Moreover, these policies involved high fiscal and quasi-fiscal costs, which grew to unsustainable levels and contributed to the destabilisation of the macroeconomic situation towards 1996. As a result of the change in political leadership in Romania and international pressure for reform, agro-food policies were **radically liberalised** in 1997. The policy reform largely followed the conditions of the World Bank's US\$350 million Agricultural Sector Adjustment Loan (ASAL) to Romania.

... and remained highly distortive. The 1997 radical liberalisation...

After the radical changes in 1997, agro-food policies were limited to the support for input purchases and *ad hoc* measures to stabilise selected commodity markets. Several legislative and organisational steps have also been taken to move Romanian policies **closer to the EU framework**, concerning such areas as rural development, environmental protection, extension, and quality and sanitary control.

... changed the policy framework

3. New policy instruments

Trade measures

Export bans and quotas...

In 1990, the state foreign trade monopoly was abolished, import restraints removed, and compulsory exports were stopped. However, **export bans and quotas** on major agro-food products were introduced in 1990, justified by the Romanian authorities on the basis of food security considerations. In the following years, export restrictions were gradually relaxed, and finally in 1997-1998, in compliance with the ASAL conditionalities, all unilateral export bans and quotas were lifted. Furthermore, as of 1997, as permitted under its WTO commitments Romania started applying export subsidies to alleviate occasional surpluses on the domestic market.

... combined with a mix of import tariff and non-tariff measures were applied in the early stage of transition...

Romania's import regime evolved through four stages. **Between 1990 and 1992**, the set of import measures was mixed, combining rather low tariff protection with a wide set of non-tariff barriers such as minimum import prices, licensing of imports linked with quantitative restrictions, and excessive sanitary controls. **From 1993 to mid-1995**, tariff protection for agricultural products was increased according to the new Tariff Schedule, but non-tariff barriers were reduced. **Between mid-1995 and 1996**, Romania's import regime was highly protectionist. This resulted from the implementation of the WTO tariff bindings because its **developing country status** allowed Romania to negotiate high tariff bindings, although non-tariff measures were discontinued. The trade weighted tariff on agricultural products jumped from 25% in the first half of 1995 to 75% in the second. **The 1997 "shock therapy"** programme reversed the protective trend of agricultural trade policy towards liberalisation. Import tariffs decreased substantially in the course of subsequent reductions conditioned by the ASAL. After the latest reductions (May 1999), import tariffs for sensitive commodities were at 45% and for all others did not exceed 40%.

... followed by trade liberalisation in 1997

Since 1997, agro-food trade policy in Romania has developed towards **freer trade** and the removal of barriers between domestic and world markets. However, the Romanian government did not resist pressures to raise protection temporarily for selected products once regional and international competition grew. For example, as of August 1998 Romania applied minimum import prices on poultry and pigmeat. Trade measures were also used to resolve current account problems, which was the case when a surcharge on all imports was imposed in the last quarter of 1998. This measure is to be phased out by the end of 2000.

Price support and market regulation

Price controls dominated up to 1996, but the 1997 reform removed all price interventions

Social concerns (particularly in the early reform period) and producer support considerations dictated price policies in Romania up to 1996. Until mid-1993, a wide range of agricultural and food products was still covered by **state price controls** applied along the whole marketing chain. Between mid-1993 and 1996 this range was reduced to a few basic products. Large **direct budgetary subsidies** were built into this regulation mechanism as a way to support both producers and consumers. The system was highly distortive, creating substantial barriers to market signals and impeding enterprise restructuring and entry of private agents into the agro-food market. The price regulation regime also posed a significant burden on state finances. In 1997,

all these direct **price interventions were removed**. However, in the following years the pressure for producer support was growing, in part due to increased international competition. To date (early 2000), the Romanian government has continued to resort to temporary *ad hoc* measures for the protection of domestic producers.

Credit policies

Up to 1996, the state was the major supplier of credit to the agro-food system, providing funds through fiscal or quasi-fiscal sources. The government's policy was to support state-controlled food production and distribution. **Preferential credits** were given to producers who supplied this system and to state agencies (so-called market integrators) purchasing agro-food products for the system. The government made allocation decisions, setting the price of credit and controlling its administration. Loan allocation procedures were purely administrative and quantities to be produced rather than creditworthiness criteria guided this process.

Up to 1996, the state was the major supplier of credit benefiting state-purchasing agencies...

Over 70% of preferential credit was channelled to state entities (state farms and purchasing agencies). Poor collection rates led to traditional debt rescheduling and write-offs. **Large-scale transfers** to the agro-food sector, linked with preferential credits, reached between 5% and 6% of GDP in 1992-1996. Preferential credit impeded enterprise restructuring, created significant distortions, and crowded out private investors from the agro-food credit market. Moreover, being largely backed by money emissions, it had destabilising macroeconomic effects. At the end of 1996, the new government decided **to phase-out preferential credits**. As a result, the credit-related transfers to the agro-food sector fell significantly in 1997 and 1998. The state Banca Agricola, through which the bulk of preferential credit was allocated, underwent a profound restructuring programme whereby a substantial share of the Bank's bad loan portfolio was absorbed as public debt.

... and state farms...

With about 85% of agricultural land transferred into private hands in the course of the land reform the demand for agricultural credit changed considerably. During most of the transition period, small-scale producers have operated with **minimal or no use of credit**. The low borrowing activity of small-scale producers can be partly related to the fact that many of them are subsistence farmers with minimal use of inputs, but even more importantly, to the fact that the existing credit facilities are not adequate to meet the needs of small-farmers.

... leaving small-scale producers out of the system

A **viable and stable credit system for agriculture** has not yet emerged in Romania. Commercial bank lending to this sector continues to be weak. Low profitability in agriculture, significant gaps in the legislative and institutional framework, as well as an unstable macroeconomic environment have made risks of agricultural lending extremely high. This substantially limits the supply of commercial loanable funds, making their cost prohibitive for most agricultural borrowers. The sharp reduction of state preferential lending (a positive development as such) and the Banca Agricola's diversification from agro-food to other sectors, which is a part of its restructuring strategy, further widen the gap between agriculture and access to credit.

A new credit system adapted to the new farm structure is yet to emerge in Romania

Input subsidies

State farms benefited most from input subsidies...

Rapid growth in input costs and the decline in output in the early reform period led the government to introduce a set of **direct aids** to lower input costs and to support current production operations. The largest part of input subsidies was spent for land improvement and crop production, with the smaller share allocated for reduction of feed costs and animal health measures. Most input subsidies existing before 1997 were conditional upon deliveries to state purchasing agencies or directly channelled to state farms. As a result, large-scale farms were the major beneficiaries of input support.

... but the voucher system introduced in 1997 targets small-scale producers

The **voucher programme**, introduced in 1997, became the biggest component of budgetary transfers to agro-food sector and marked the radical re-orientation of policies from large-scale (mostly state-owned) farms to small-scale producers. This policy, by supporting production and income of small land-owners, performs an important social security function. Changes in the programme being introduced in 2000 aim at switching the beneficiaries of the programme from land-owners to land-users and at linking the number of vouchers to be received by each producer to the type of crop to be produced. This will mean further bureaucratisation of the programme that strengthens arguments for its discontinuation.

4. General services

Research, education and training

Research, education, training and extension services lack funding, co-ordination and relevant skills

The extensive agricultural research, education and training system created in the pre-reform period, faces considerable **financial difficulties** as a result of reduced state financing and a very poor private resource base. Research and education institutions rely to a large extent on revenues from their production operations and on funds coming from projects sponsored by foreign donors. The agricultural education system lacks specialists in economics, business and marketing, with university and college *curricula* still focussing excessively on production skills. Development and extension activities before the reform were carried out directly by the research institutes and stations and no specialised extension network existed. After 1989, some research institutes started specialised extension activities; on the state level extension groups were created by MoAF in each of its county offices. In 1998 these functions were taken over by the National Agency for Agricultural Consultancy.

Marketing systems

Market infrastructure is critical for linking producers with consumers

The general policy framework that was in place until 1997 impeded the emergence of private marketing infrastructure and delayed orientation of existing downstream enterprises to the market. Substantial reduction of state intervention in the agro-food sector as a result of the 1997 policy reform created a more favourable environment for the development of market-oriented marketing systems. The Romanian government supported construction of six regional **wholesale markets** as well as the one in Bucharest. However, these markets are poorly integrated into the existing formal and informal flows of products between producers and consumers and their use is limited at best. Under co-operative project with the European Union, a **market information** system was set up to provide weekly information on price and agro-food market

developments across the country. Recent attempts to commercialise this system failed, and at the beginning of 2000 it seemed to have been discontinued.

5. Rural development

The rural population accounts for 45% of the total population and rural areas represent 89% of the country's surface. However, until recently, no specific rural development policy was implemented. Only in December 1996 was rural development first mentioned as a goal in the government's programme. New opportunities emerge with the substantial PHARE funds and pre-accession structural funds (Special Accession Programme for Agriculture and Rural Development – **SAPARD**) to be made available to Romania by the European Union between 2000 and 2006. The funds are to be used to finance improvement of agricultural marketing and processing, upgrading the quality of food products, development of rural infrastructure, diversification of the rural economy, and implementation of agro-environmental measures. At present, Romania is preparing its national rural development strategy, which includes selection of priorities, creation of an appropriate institutional base and earmarking own financial resources necessary to co-finance selected projects.

A badly needed rural development policy is at an early stage of formulation

6. Environmental measures

Agriculture in Romania is both a cause of selected environmental problems, but even more importantly suffers from pollution generated by other human activities, particularly in communities situated close to industrial centres. Pressures on the environment from agricultural production eased considerably during the transition with the dismantling of the majority of large livestock complexes contributing to water pollution, reduction of water use for irrigation and a sharp fall in fertiliser and pesticide use. The trend in the nitrogen balance, calculated in accordance with OECD methodology and measuring the difference between nitrogen inputs into and outputs from the agricultural system, shows a sharp drop in the surplus at the beginning of the 1990s that evolved into a deficit in 1997 and 1998. If the deficit continues, it would raise concerns about the potential sustainability of agricultural systems in Romania. The fragility of these systems is compounded by declining soil quality, partly due to a lack of resources to support land conservation, but also due to improper land cultivation practices by new farmers having little experience in farming. In 1990, an **ambitious National Programme** for Environmental Protection was formulated, aiming at legislative improvements, institutional capacity building, state environmental monitoring and development of sustainable agriculture. However, environmental quality improvement is low on Romania's production dominated policy agenda. Legal instruments are insufficiently developed and poorly implemented. Similarly, the institutional capacities, as well as financial and human resources are far from adequate to address environmental problems.

The institutional and legal framework for the implementation of environmental policy needs to be developed

E. Support to agriculture

The level of support to Romanian agriculture has been estimated using the OECD methodology. The main indicators used for analysis have been the **Producer Support Estimate** (PSE) and the **Consumer Support Estimate** (CSE). The PSE has been calculated for all OECD countries and more recently for several central and eastern European countries and Russia. The PSE measures the

The level of support to Romanian agriculture measured by OECD's PSE shows that...

money value of transfers from consumers and taxpayers to agricultural producers arising from government policies. The percentage PSE gives an indication of the proportion of total farm revenues originating from support, whether that support comes through domestic prices higher than on world markets or through budgetary allocations. Such budgetary transfers include, among others, subsidies paid directly on outputs and on the use of inputs. The CSE measures the implicit transfers from/to consumers as a result of higher/lower domestic prices maintained by Market Price Support (MPS) policies as well as direct consumer subsidies. The estimated results should be interpreted with caution as the MPS element, measuring a price gap between domestic and foreign reference prices, captures the impact not only of agricultural policies as such, but also of macroeconomic policies and of inefficiencies in the downstream sector which separate producers from developments on world markets. This qualification is important for all countries in transition, including Romania.

... Romanian producers were subsidised and consumers taxed, except in 1992 and 1997

The results fluctuate, but indicate that over the whole period of 1986-1999 Romanian producers were subsidised. On the contrary, consumers were implicitly taxed over the whole period, except in 1992 and 1997. The percentage PSE was high during the **pre-reform period**, averaging 50% between 1986 and 1989 compared to the OECD average of 41%. Most of the support was provided in the form of MPS as a result of high government-fixed domestic prices in Romania compared to the world reference prices used in the estimates. The direct budgetary support to the agro-food sector was low compared to MPS and included limited input subsidies and support to general services in infrastructure, mainly for irrigation and drainage systems.

During the reform period the level of support...

During the transition period changes in the level of measured support reflected the Romanian government's gradual approach to reforms and a lack of continuity in Romanian agricultural and macroeconomic policies:

... fell at the beginning of transition...

– During **1990-1992**, the strong depreciation of the currency was the major factor determining the decline in the percentage PSE, from 46% in 1989 to 8% in 1992. The fall in this period was accelerated by the partial liberalisation of agro-food imports and substantial restrictions imposed on agro-food exports, in particular in 1990. However, producer prices remained above the international reference prices due to the high, government controlled procurement prices, and a lifting of the upper limit on prices at peasant markets.

... rose between 1993 and 1996...

– Between **1993 and 1996**, the percentage PSE increased again to about 14% on average reflecting stronger support for producers through higher minimum guarantee prices. Moreover, budgetary and quasi-budgetary support for producers rose strongly in this period, mostly through the preferential credit system for state farms. Much higher tariffs introduced in the second half of 1995 also had some impact on the rise in protection.

... and fluctuated between 1997 and 1999

– **In 1997**, the price and trade liberalisation led to the drastic drop of MPS and consequently of the percentage PSE to 3%. Moreover, transfers related to credit programmes decreased sharply, leading to a reduction in budgetary support. The fall in the measured support in 1997 was followed by its sharp rise to 25% in **1998**. This was mainly due to the combined effect of the dramatic fall in international reference prices not

reflected in domestic prices and the real appreciation of the Leu that widened the price differential. In 1999, the percentage PSE fell to 20%, mostly due to a depreciation of the Leu. The share of MPS in total 1999 PSE was 83% and the remaining 17% was provided through budgetary transfers.

The **evolution of producer support in Romania differed** from that observed in most other countries in transition where the support sharply dropped at the beginning of transition to negative numbers, reflecting significant depreciation of the currency and the overall liberalisation of the economy, but subsequently increased with the appreciation of the currencies and more protective policies for producers. In 1999, the percentage PSE in Romania (20%) was lower than the OECD average of 40%, but was close to the levels estimated for other central and eastern European countries that ranged between 15% in Estonia and 25% in the Czech Republic, Poland and Slovakia.

The CSE was negative during the whole period under review, except in 1992 and 1997. The negative CSEs in the **pre-reform period**, meaning the implicit tax on consumers, mirrored developments in positive Market Price Support. Consumer subsidies were introduced in 1991 and they compensated, in particular in 1992, for the market transfers from consumers to producers. As a result, in 1992 the CSE was positive at 5%. **Since 1993** the CSE has constantly been negative, except in 1997. In 1999 the percentage CSE was minus 21%, representing a substantial implicit tax on consumers.

Distribution of support between the different commodities indicates that in the pre-reform period support to livestock dominated. In the reform period the share of support for specific livestock and crop products in the total PSE varied, which would indicate that government policy was not consistently supportive of any particular type of production. However, there was a striking divergence in the level of support between 1991 and 1993 when the support for crop products was high at 27% on average compared to just 3% on average for livestock products. Indeed, sugar, wheat, maize and potatoes were the most supported products during this period. In addition, high support for crop producers had the effect of taxing livestock producers through high feed costs.

The level of support to the agro-food sector in Romania has also been measured through the **Total Support Estimate (TSE)**. This is a wider measure that includes all transfers covered by PSEs, but also general services and budgetary payments to consumers, not included in the PSEs. The percentage TSE relates the value of these transfers to the value of GDP. The estimates show a striking rise in the percentage TSE to 8% of GDP in 1998, resulting from high domestic producer prices compared to falling world market prices. In 1999, it fell to 5%, but was still the third highest among all countries for which OECD has measured the level of support, next only to Turkey and Korea, higher than in all countries in transition and several times higher than the OECD and EU averages at below 2%. Moreover, a dominant part of support to the Romanian producers is provided through Market Price Support policies and input subsidies. These are policy measures with the lowest transfer efficiency, meaning that only a small fraction of support is effectively received by producers.

The level of support in 1999 was close to the levels estimated for most other transition countries

Negative support to consumers reflected the positive support to producers

The government policy was not consistently supportive of any particular type of production

The percentage Total Support Estimate indicates that for a poor country like Romania the cost of agricultural support may be excessively high

F. Conclusions and policy recommendations

- The key priority in Romania is to develop a **policy strategy targeted at removing constraints that impede the flow of labour from agriculture** into activities with higher value added, and thus the growth of incomes, employment, and welfare in rural areas. Such a strategy could include: general economic liberalisation and reforms, investments in rural infrastructure and education, and the stimulation of rural non-farming activities/enterprises. Policy makers should actively seek to shift wasteful support policies to better-targeted **public goods** policies to improve the physical and human infrastructure in rural areas.
- **Overall liberalisation**, still fragile, but basically achieved in Romania through the 1997 reforms, should, after a difficult period of consolidation and adjustments, stimulate growth and inflows of FDI. Moreover, liberalisation also lowers intersectoral mobility costs and is conducive to necessary labour adjustments in agriculture. The more liberalised the economy, the more flexible the different production factors are likely to be and the greater scope for allocating them to their most efficient use. **Economic growth** would also ease the tendency in Romania to keep land as a social security factor. With more options on labour markets, landowners would be more inclined to sell or lease their land to others, which, in turn, would help to ease the problem of the excessive land fragmentation in Romania.
- **Slow progress in the privatisation** of large agro-food enterprises and the domination of the MEBO method for the small and medium enterprises undermine the restructuring process of the Romanian agro-food industry. This in turn impedes the recovery of the agricultural sector which depends on high quality, tailored to the size of farm, reasonably priced, and timely inputs and on reliable, financially solvent, efficient purchasers and processors able to produce and sell high quality food products at prices attractive to domestic and foreign consumers. The acceleration of the privatisation since late 1998 should contribute to the real restructuring of the Romanian agro-food industry, including through stronger involvement of foreign investors, to the benefit of farmers and consumers.
- The **progress** made by Romanian agriculture **towards developing a market oriented agricultural policy** framework can be measured by the trend in the **Producer Support Estimate**. The results show that agricultural policies applied up to the end of 1996 were highly distortive and costly for both consumers and taxpayers, but did not solve structural problems encountered by the agro-food sector. Thus, the **substantial cost** of such policies imposed on the economy **was wasted**. After the 1997 price and trade liberalisation, producer support fluctuated, but was relatively high in 1998 and 1999, partly due to a slow adjustment of the domestic agro-food markets to falling world prices. In particular, the very high percentage **Total Support Estimate** in 1998 and 1999 indicates that for a relatively poor country with a large agricultural sector, such as Romania, the cost of agricultural support related to a low GDP is extremely high.
- Despite the declared objective of making food available to consumers at “affordable” prices, in fact consumers were implicitly taxed between 1986 and 1996 as reflected by the strongly negative **Consumer Support Estimate** in this period (except in 1992 and 1997). Bearing in mind that food alone accounts for 59% of household expenditures, consumer interests would be better served through more efficient agriculture that would contribute to lower food prices, as well as food safety measures such as adequate legislation on and enforcement of food quality standards linked with internationally recognised standards.
- The **1997 price and trade liberalisation** was the right move towards less distorted markets, and this momentum should not be lost if more progress in the restructuring and competitiveness of agro-food sector is sought. The establishment of a properly functioning price stabilisation system in Romania would require significant administrative and financial resources, hardly at Romania's disposal in current circumstances. Furthermore, poorly gauged and implemented price interventions can destabilise the market more than no interventions at all. Therefore, policies aimed at

development of **market infrastructure, market transparency and price information** appear to be more adequate solutions to the price stabilisation problem. Substantial gaps in physical infrastructure and poorly developed marketing services need the government's response.

- A **stable and predictable trade regime** creates a more favourable environment for the sector's adjustment. An increase in border protection places an additional burden on consumers, but rarely produces expected changes in agricultural sector efficiency. Moreover, under imperfect agro-food markets the major gains from increased border protection are likely to be captured by food chain operators, rather than by farmers.
- At the current stage of reform, the negative impact of excessive **land ownership fragmentation** can be gradually diminished by active **land market transactions**. Easing the remaining restrictions on land transfers combined with a proper land registration system would contribute to a well-functioning land market. Speeding up the process of owners' land titling would to some extent improve the creditworthiness of the farming sector, resulting in better access to capital, which in turn would assist the restructuring process.
- **Reliable statistics** are necessary to assess the results of reforms undertaken so far and to formulate proper policy responses. The land use pattern in Romania seems to be less fragmented than land ownership, but adequate statistics do not exist to assess the situation correctly. The general agricultural census has been postponed until 2002 and the government should be firmly committed to provide sufficient resources to make it feasible.
- **Privatisation of state farms** should be accelerated. The current situation of prolonged uncertainties undermines investments in the potentially most productive part of Romanian agriculture.
- Stimulating the development of a **financial institutional framework** to provide credits to viable businesses in agriculture on a competitive basis represents one of the most urgent and difficult challenges for agricultural policy in Romania.
- The **research, education, and extension systems** in Romania should be better adapted to a radically changed production structure, which requires creation of services and structures targeting the newly emerged small farmers who have little or no farming experience and no business skills.
- Agricultural policy in Romania has not sufficiently addressed **environmental issues and sustainable use of resources** in agriculture. While substantial progress in the adoption of basic environmental laws and institutions has been made, efforts should be concentrated on the development of proper policy instruments and, in particular, enforcement mechanisms. The launching of mechanisms of penalties adequate to the environmental damages made, in accordance with the Polluter Pays Principle, is urgently needed to enforce environmentally sound practices.
- The **voucher programme**, being currently the major item of the state agricultural budget, needs **careful assessment** as to what extent it manages to go further than a mere social aid and contribute to increased economic viability of small-scale producers and their integration into the market. The programme was initially designed as a temporary one, but the government may face significant political difficulties to phase it out. To ease these difficulties, the government may consider replacing this programme with a package of coherent credit, marketing and rural development measures, which would assist the process of transforming small-scale farms into viable, family units. Such a strategy could replace the current input subsidy programme (voucher system) by a more future oriented approach assisting rural areas in resolving their structural problems.
- An **integrated rural development policy**, meaning a policy that embraces **economic, social and environmental aspects** of rural development, could be an option to be considered by the government. Such a policy, aimed at improving access by the agricultural workforce to employment in the rest of the economy, could contain two basic components: the **creation of non-agricultural employment opportunities in rural areas; and lowering intersectoral mobility costs**, by improving availability of education and training and by decreasing physical mobility costs. Stimulating private sector investments in the rural areas, by both local inhabitants and outside sources, is important for the creation of non-agricultural employment in rural areas.

- To support rural development policies, government programmes could focus on improving access to credit for starting up **non-agricultural small and medium enterprises** and on **improving the infrastructure** necessary to stimulate private sector development. This could include investment in roads, water supply, waste water treatment and modern communications facilities. In turn, labour market policies should include both active labour policies such as vocational retraining programmes, and long-term investments in all levels of education. This should help to ensure that the skills learned are those that are demanded by potential employers in non-agricultural sectors. The strategy might also include the retraining of local administrators, provision of local communities with a proper tax base, decentralisation of the decision making process, support for non-governmental institutions active in rural areas, and the creation of a transparent institutional framework with clearly identified responsibilities for rural development policies. Such a strategy would also help Romania to create an adequate institutional framework and co-financing capacity to absorb productively the EU pre-accession funds made available to the associated countries.
- Like other transition countries associated with the **European Union** and engaged in the **accession process**, Romania is facing a dilemma about moving the policy focus to adopt (costly) EU policies, and greater market orientation. As the accession is not to happen in the near future and the EU Common Agricultural Policy continues to evolve, Romania would benefit most if it adopts open-trade and low support policies in order to sustain and encourage greater industry competitiveness. Placing greater emphasis on improving the economic efficiency of the whole food chain would enhance its competitiveness and improve the terms of trade for agricultural producers during the period prior to EU accession and thereafter.

ECONOMIC AND AGRICULTURAL ENVIRONMENT

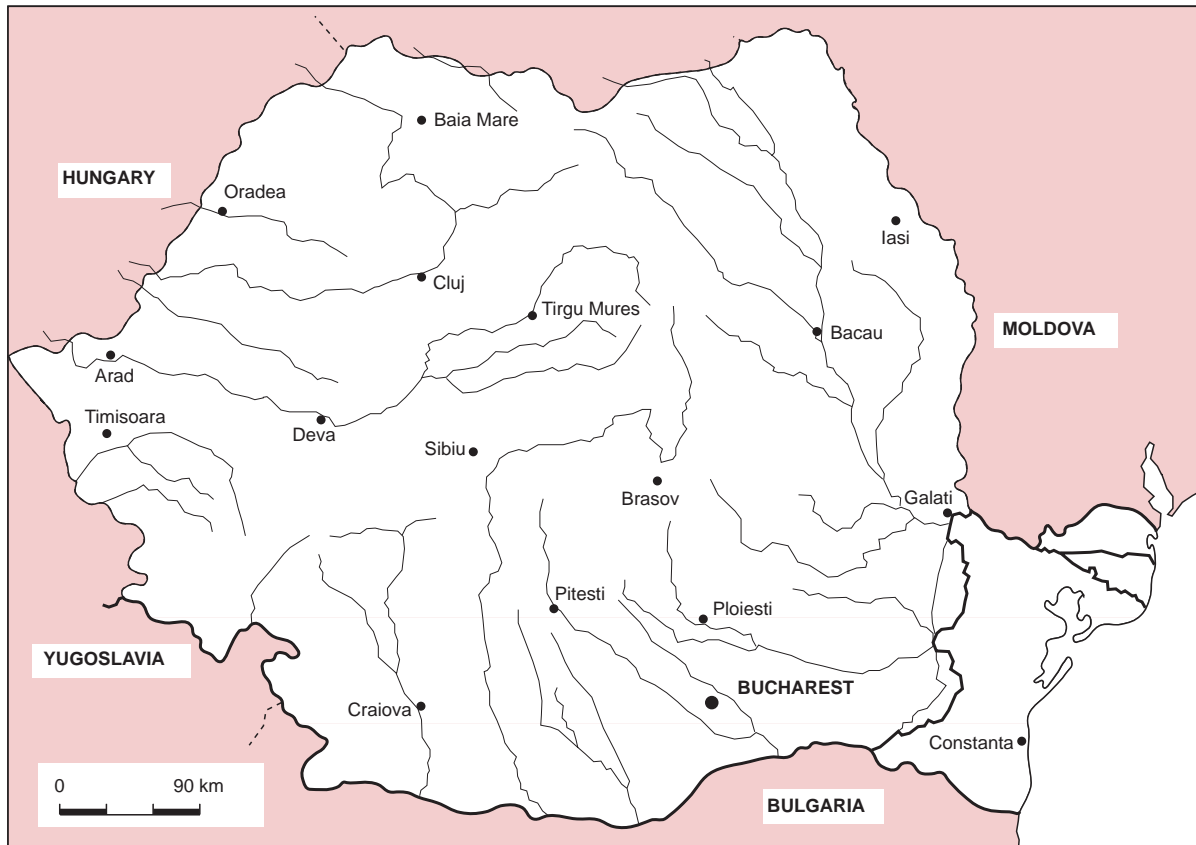
A. General aspects

1. Background data

With a territory of 238 391 square kilometres, Romania is the 13th largest country in Europe, ranking between Belarus and the United Kingdom in size. Situated in the south-eastern part of Central Europe, it is bordered to the north and north-east by Ukraine and Moldova, to the west by Hungary and to the south and south-west by Bulgaria and Yugoslavia. To the east, the Black Sea coastline border is 194 kilometres long.

Romania's landscape is varied with hills, plateaux and plains lying concentrically around the Carpathian Mountains. In the north-west, the Carpathians and the Transylvanian Alps surround the Central Transylvanian

Map of Romania



Basin. In the eastern and southern regions of Moldavia, Oltenia and Muntenia plains are predominant. The Transylvanian plateau and hills cover about 36% of the country's surface, while mountains dominate about 31% of the country's total area. Plains cover the remaining 33%. The highest point is Mount Moldoveanu with 2 544 metres.

About 62% of the Romanian territory is used for agricultural production, 28% is forested; about 4% is covered by water; and the remaining 6% is used for other purposes. Of the agricultural area 63% is arable land, 23% permanent pasture, 10% meadows and about 4% vineyards and orchards. Some two-thirds of the agricultural area is characterised by soil conditions conducive to agriculture, which are of the steppe, forest or forest-steppe soil type. The alpine and under-alpine zones on the other hand, are areas with poor soils, inadequate for agricultural crops. Most of these areas are used for pasture.

The climate varies from continental in the north-east to temperate in the south-west. The average temperature varies from 23°C in July to -3°C in January. The average annual precipitation is some 637 millimetres and varies from 375 millimetres on the Black Sea shore to above 1 000 millimetres in the mountains. Romania's natural resources consist of oil and gas reserves (both declining), coal, ferrous and non-ferrous minerals, bauxite, salt, timber and valuable mineral water springs.

In mid-1998 Romania's population was 22.5 million (10th in Europe) and the average density of population was 94 inhabitants per square kilometre. The population grew steadily until 1990, but has decreased since then by 700 000 mainly due to the negative rate of natural increase (at about -0.2% a year) and to emigration. The life expectancy at birth is 69 years (65.2 for men, 73.0 for women). The share of urban population is 55% and some 31% of the total population lives in large cities of over 100 000 inhabitants, including 9% in Bucharest, the capital.

The majority of the population consists of Romanians (89%). Romania has several ethnic minorities like Hungarians (8.9% of the total population), Gypsies (1.6%), Germans (0.4%), and smaller groups such as Ukrainians, Russians, Turks, Slovaks and Serbs. The official language is Romanian, originating from ancient Latin. The main religion is Orthodox (87%), linking Romania to the eastern European culture.

2. *Political and administrative framework*

In December 1989 the communist system in Romania was abolished. Romania started to return to a system of multiple parties and respect of human rights. Romania's new system of public institutions corresponds to that of a semi-presidential republic (Box I.1). Local, parliamentary and presidential elections have been held three times since 1989. In May 1990, the National Salvation Front won a strong mandate due to promises of gradual economic reform to a deeply traumatised population. In 1991, an attempt to introduce market-oriented policies was abandoned after demonstrations by miners. After the 1992 election, a minority government was formed, but its reliance on the parliamentary support of nationalist and neo-communist parties reinforced its caution over the pace of reform. The elections of November 1996 were won by a grouping of centre-right parties, the Democratic Convention (DC), and the Government tried to introduce radical market-oriented economic reforms (see Part I.A.3. below). Since then there were several changes in the Government within the same coalition, including changes in the post of Prime Minister in April 1998 and December 1999. The next elections are scheduled for 2000.

3. *Recent macroeconomic developments*¹

Main economic reforms

State ownership and administrative planning shaped the framework of the Romanian economy up to 1989. The communist ideology of industrialisation and self-sufficiency determined the structure of the economy and its trade orientations. In the framework of the Council for Mutual Economic Assistance (CMEA) Romania assumed the role of petrochemical supplier, based on its endowment in oil and gas. The industrialisation strategy led to the development of gigantic, energy-intensive industrial units strongly dependent on supplies of domestic energy resources and on imports of raw materials. By the end of the 1960s Romania had become dependent on oil imports. As a result of the oil shocks of the 1970s and heavy borrowings from

Box I.1. The Public Management System of Romania (as of end 1999)*

Constitutional framework and presidency

The Constitution, which came into force in December 1991, lays down the principle of separation of powers as the foundation for the state. The Parliament is elected for a term of four years. It consists of the Chamber of Deputies and the Senate and passes constitutional, organic, and ordinary laws. The government implements the domestic and foreign policy of the country and has general control of the public administration. The President is the head of State. He is elected by direct universal suffrage for a four-year period. He designates a candidate for the post of Prime Minister and, after a vote of confidence by Parliament, appoints the government. He may, on the proposal of the Prime Minister, dismiss and replace members of the government. He promulgates by decree legislation adopted by Parliament or may send it back for a second reading or transmit it to the Constitutional Court. He may dissolve Parliament.

Legislative authority, process and instruments

Parliament expresses its confidence in the government programme and in the government; provokes the resignation of the government by adopting a motion of censure; and discusses adoption of the national public budget. In joint session, Parliament elects the members of the Higher Council of the Judiciary, the Court of Audit and the Supreme Court of Justice; the Senate elects the Ombudsman; and each Chamber elects one member of the Constitutional Court. Standing committees are specialised by sector such as Economic Policy, Reform, and Privatisation; Budget, Finance and Banks; Agriculture, Forestry, Food Industry, and Specific Services; Public Administration; Territorial Planning.

Laws adopted by Parliament may be constitutional, organic or ordinary; a majority of all members of each Chamber adopts organic laws and a majority of members present in each Chamber adopts ordinary laws. The government may ask for bills to be adopted by an emergency procedure. Government *decisions* are adopted to ensure the enforcement of legislation. Government adopts *ordinances* where Parliament has delegated its legislative authority for a specified period in a specific field. Ordinances are exceptional in nature, adopted in areas not governed by organic laws and may be debated in Parliament. The adoption of legislation requires approval of both Chambers. Some bills may be adopted only in joint session. The Legislative Council is a consultative body of the Parliament. The Council's main tasks are to review and give opinions on all draft laws, draft ordinances and governmental decisions. Consultation of the Council is mandatory; however, its opinions are not binding on the Government.

The executive

The Government as a collegiate body consists of the Prime Minister, ministers and secretaries of state designated as members of the Government. The Prime Minister is the head of Government. He submits reports and statements on policy to Parliament and organises the work of the Government. The Government controls public administration and implements domestic and foreign policy. It directs and supervises the activities of ministries and ensures that the administration complies with the law. Decisions are taken at weekly meetings of the Government. There are 15 ministries. The minister is empowered to take all steps necessary to implement government policy and is answerable to the government for the way he manages the ministry. The ministry has a central structure, subordinated units and public services in the territorial-administrative units.

The President may participate in those governmental meetings that address issues regarding the national security, and at the invitation of the Prime Minister, in other instances as well; he meets the Prime Minister weekly. The Government is answerable for its actions only to Parliament. The Government communicates with the Parliament through the Department for Relations with the Parliament. The Government informs the Parliament about its activities mainly through ordinary addresses, and the hearings of the Prime Minister and of ministers. Periodically, Parliament receives the legislative priorities of the Government. Depending on these priorities, both Chambers establish their agendas.

Territorial structure

The decentralisation and devolution processes take place in parallel. At the territorial level, ministries have decentralised services which are controlled by Prefects. The Prefects are the representatives of the Government in the 41 counties (*judets*) and in the municipality of Bucharest. They supervise the activity of the local and county councils and of the mayors. The county councils organise and manage the county public services, adopt and monitor programmes for the county's development and adopt the county's budget. The local councils and mayors manage public affairs in communes and towns. The local councils and the mayors are elected for a 4-year mandate.

* This information was compiled by OECD SIGMA.

abroad to finance imports, Romania had a sizeable foreign debt and interest burden at the beginning of the 1980s. In total, the external debt amounted to almost US\$11 billion (20 to 30% of GDP). For political reasons, the communist leadership decided to reimburse the debt rapidly. As there was no growth in exports, current account surpluses were achieved by halving imports from the west. This policy reinforced economic autarky with cuts on imports of investment goods, leading to a growing technological gap and pauperisation of the population. Despite constant falls in agricultural production after 1986, cuts in agro-food imports enabled Romania to remain a net agro-food exporter. The cost was growing food shortages on domestic markets and the introduction of a severe food rationing system.

Towards the end of the 1980s the debts were almost fully paid back, but the Romanian economy was on the verge of collapse. Romanian enterprises were isolated from the external world and unresponsive to consumer demands. Romania, unlike many other central and eastern European countries, did not experience any economic reform debate in the 1980s, which would have eased transition to a market economy. At the beginning of the 1990s the situation was aggravated by unfavourable external conditions such as the loss of former CMEA markets and the UN sanctions against Romania's other traditional export markets such as Iraq and the former Yugoslavia.

Due to this difficult economic and social legacy and to the rather unstable political situation, the first post-communist governments in Romania sought popular support through policies to improve the standard of living in the short term and to minimise the social costs of transformation of the previous economic and institutional structures. This resulted in the gradualist approach to macroeconomic and structural reforms in the early 1990s. Several important reforms were undertaken, but quite often only partially implemented. Structural reforms were lagging behind and developments in 1995 with a growing current account deficit and a sharp depreciation in the official exchange rate revealed risks linked with the gradualist approach. The situation deteriorated further in 1996. While GDP continued to grow, pre-election policies to support both output and demand led to a large public sector deficit and to a doubling of the inflation rate. State support for industry was wasted on large state-owned companies lacking financial discipline. The slow pace of reform led the IMF and World Bank to halt their financial support for Romania.

The elections of November 1996 brought a coalition of opposition parties and a new President to power. The new administration received strong political support to implement wide-ranging structural reforms. The government re-established the dialogue with the international financial institutions and in February 1997 put in place a "shock therapy" programme of both macroeconomic and institutional reforms. The programme included the liberalisation of prices that were still under state control (energy, agricultural products and public services), liberalisation of the exchange rate regime, reduction of import tariffs, removal of subsidies, phasing out of directed credits for agriculture, promotion of foreign investment. The major objective of the National Bank of Romania (NBR) in 1997 was to disinflate the economy and create the ground for durable macroeconomic stabilisation. A stabilisation plan was introduced which provided for a restrictive monetary policy and aimed at limiting the budget deficit. Financial discipline was to be supported by the privatisation or liquidation of the loss-making state-owned commercial enterprises and the restructuring of so called *Regies Autonomes*, the large utility companies and other public entities under direct control of Ministries. In order to temper social costs associated with reforms, the programme included the partial indexation of wages and benefits, and higher child allowances.

Following the adjustment shock of 1997, tight monetary policies helped to achieve some progress in macroeconomic stabilisation in 1998. In particular, the inflation rate (CPI) fell sharply. However, the Romanian economy contracted each year between 1997 and 1999, the budget deficit remained high, and the rate of unemployment rose. Moreover, bad debts and undercapitalisation of banks remained serious problems. Privatisation and restructuring carried on, albeit slowly. Romania continued to lack goods that would be competitive on the international markets. This contributed to an increase in the foreign trade deficit in 1998. Facing the need for balance-of-payments support from the IMF, the government adopted in December 1998 an anti-crisis programme which gave new impetus to structural reforms in 1999, including accelerated privatisation, with sales of major companies and banks to foreign investors. This helped to achieve an agreement with the IMF on a new loan facility in August 1999. At the December 1999 Helsinki

summit the European Union extended an invitation to Romania to start accession negotiations, along with four other CEECs (Bulgaria, Latvia, Lithuania and Slovakia). Official negotiations were opened in February 2000 and prospects for EU membership will have a growing impact on Romania's policy making.

Output

Romanian GDP started to decline in real terms in 1988 and the fall continued until 1992. After declining by 25% in real terms between 1989 and 1992, real GDP started to recover in 1993. The growth accelerated in 1994 and peaked at 7.1% in 1995 (Table I.1). However, in the framework of the unstructured economy, growth required a substantial increase in imports of energy, raw materials and intermediate goods exerting pressures on the current account. Moreover, the rise in output from traditional industries was partly achieved by a credit expansion. The supply from these industries was not matched by demand, leading to the build-up of stocks of unwanted goods. In this framework the recovery proved unsustainable, and in 1996 growth slowed to 4.1%.

Table I.1. Selected macroeconomic indicators, 1989-1999

Indicator	Units	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999p
Real change in GDP	Per cent	-5.8	-5.6	-12.9	-8.8	1.5	3.9	7.1	4.1	-6.6	-5.4	-3.2
GDP in US\$ terms	US\$ billion	53.7	38.3	28.9	19.6	26.4	30.1	35.5	35.3	34.9	41.5	33.9
Exchange rate (annual average)	Lei/US\$	14.9	22.4	76.4	308	760	1 655	2 033	3 083	7 168	8 876	15 333
Consumer price index (December-December)	Per cent	1.1	37.7	222.8	199.2	295.5	61.7	27.8	56.9	151.7	40.6	54.8
Unemployment rate (end of year)	Percent	n.a.	n.a.	3.0	8.2	10.4	10.9	9.5	6.6	8.9	10.3	11.5
Budget deficit ¹	Per cent of GDP	7.5	0.3	-1.9	-4.4	-2.6	-4.2	-4.1	-4.9	-3.6	-3.1	-3.0
Merchandise exports	US\$ billion (FOB prices)	10.5	5.8	4.3	4.3	4.9	6.2	7.9	8.1	8.4	8.3	8.4
Merchandise imports	US\$ billion (CIF prices)	8.4	9.2	5.7	6.2	6.5	7.1	10.3	11.4	11.3	11.8	10.4
Current account	Per cent of GDP	5.6	-8.7	-3.5	-8.0	-4.5	-1.4	-5.0	-7.3	-6.1	-7.3	-3.8
Total external debt (end-year)	US\$ billion	0.0	0.2	2.2	3.5	4.5	5.5	6.7	9.2	10.4	9.7	9.1

p Provisional.

n.a. Not available.

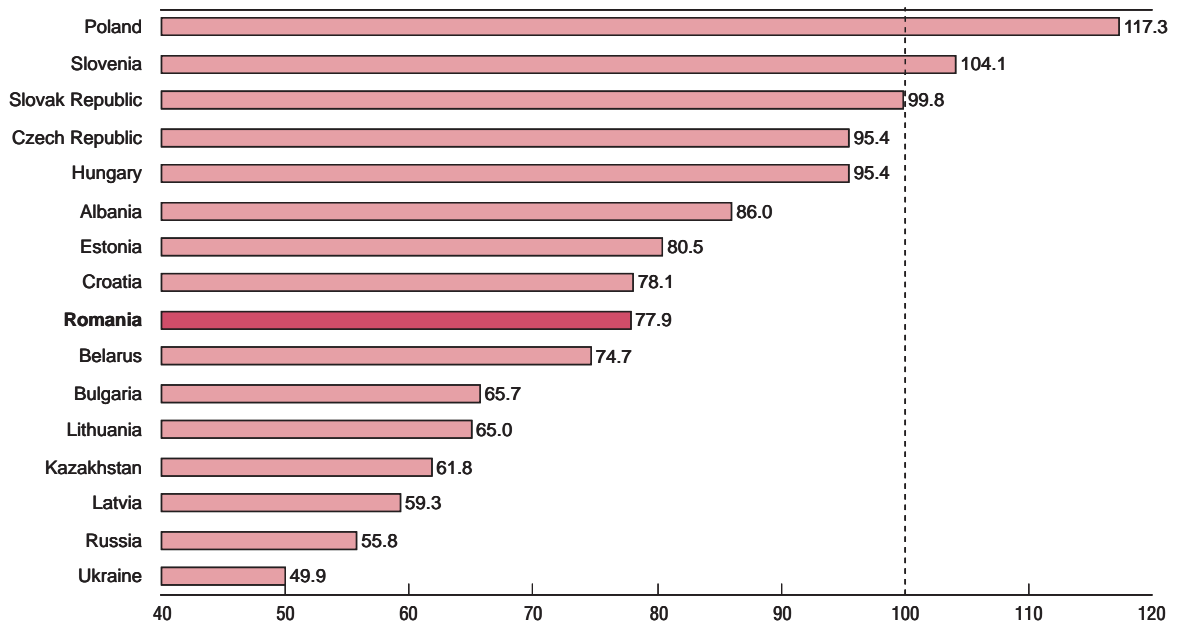
1. Central government budget; figures do not take into account local budgets, the state social insurance budget or NBR refinancing.

Source: National Bank of Romania; National Commission for Statistics; OECD.

The 1997 stabilisation plan with tighter financial policies obliged enterprises to adjust and decrease output. As a result, GDP fell by 6.6% in 1997 and again by 5.4% in 1998, bringing Romania's GDP down to 78% of the 1989 level (Graph I.1).² Against the background of obsolete domestic production, a substantial rise in real wages in 1998, combined with a real exchange rate appreciation, shifted domestic demand to imported products and reduced competitiveness of Romanian products on export markets. The Kosovo crisis had only limited effects on the Romanian economy in 1999, but the loss of some export markets, the closure of road transit routes through Yugoslavia and the blockage of Danube shipping contributed to a fall of 3.2% in 1999. In 2000 the GDP is projected to increase at 1.3%, but with the pace of privatisation and restructuring accelerating since late 1998, Romania may finally create an environment to revive stronger economic growth in the medium term.

The composition of GDP at current prices changed significantly at the beginning of transition with industry's share in GDP falling sharply, and that of services increasing. The share of agriculture rose as well, but this was due to a sharp overall fall in GDP as agricultural production remained almost unchanged in this period. Between 1992 and 1997 the composition of GDP remained relatively stable with the share of services even falling (Table I.2). Such a situation reflects the slow pace of the restructuring of the Romanian economy in this period. According to preliminary data, structural changes accelerated in 1998 with the shares of industry and agriculture in total GDP falling and that of services increasing. The importance of the private sector in the total value added rose from 16% in 1990 to 55% in 1996, but since then has been growing slowly to just 58% by the end of 1998.

Graph I.1. **Gross domestic product in transition countries in 1998**
1989 = 100



Source: EIU, 1999.

Table I.2. **The structure of GDP at current prices, 1990-1998**
Per cent

Sector	1989	1990	1991	1992	1993	1994	1995	1996	1997p	1998e
Industry	46.2	40.5	37.9	38.3	33.8	36.2	32.9	33.2	35.5	31.7
Agriculture ¹	14.4	21.8	18.9	19.0	21.0	19.9	19.8	19.2	18.1	16.0
Services	25.5	26.5	34.8	40.6	37.0	33.7	36.1	36.7	33.1	37.6
Other ²	14.9	11.2	8.4	2.1	8.7	10.2	11.7	11.2	13.3	14.7
Total	100	100	100	100	100	100	100	100	100	100

p Provisional.

e Estimate.

1. Including agriculture, forestry, hunting and fishing.

2. Including construction and other goods producing branches of economy, imputed financial intermediary services and net taxes on goods and imports.

Source: Raport Annual 1998, Banca Nationala a Romaniei, Bucharest, 1999.

Employment

Movements in employment have been rather loosely linked to the shifts in the level and structure of production. The fall in employment between 1989 and 1998 by about 1% has been much slower than that of real GDP, reflecting significant over-employment in many branches of the economy and reduced labour productivity.

The specific feature of changes in the employment structure in the 1990s is that the share of industrial employment fell, the share of agricultural employment rose and that of services remained rather stagnant (Table I.3). Industrial employment fell by more than one-third between 1990 and 1998 and the

Table I.3. **Structure of employment, 1990-1998**
Per cent

Sector	1990	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture	29.0	29.7	32.1	35.2	35.6	33.6	34.6	36.8	35.6
Industry	35.7	33.9	31.6	30.1	28.8	28.6	29.2	27.2	n.a.
Construction	6.5	4.6	5.5	5.7	5.6	5.0	5.1	4.9	n.a.
Trade	5.0	6.5	7.2	5.8	6.4	9.1	8.2	8.9	n.a.
Transport and communication	7.0	6.4	6.2	5.9	5.6	5.9	5.8	5.6	n.a.
Public education and health	6.7	6.8	7.1	7.4	7.7	8.1	8.3	8.2	n.a.
Other services	10.1	12.1	10.3	9.9	10.3	9.7	8.8	8.4	n.a.
Total	100	100	100	100	100	100	100	100	100

n.a. Not available.

This table draws on a database called the "labour force balance", which the National Commission for Statistics compiles from enterprise surveys (employees), land registers (farmers) and fiscal registers. The total employment calculated on this basis tends to be 15-20 per cent lower than that calculated according to the definition applied by the International Labour Organisation (ILO).

Source: National Commission for Statistics.

redundant workers retired, became unemployed or were absorbed by agriculture. Agriculture became an important social buffer in recent years with its share in total employment at an exceptionally high level of 36% in 1998 compared to the European Union average of 5% (see below). The share of services remains at around 30%, which is lower than in most transition countries.³ There has been little or no growth in total service employment for most of the 1990s, but in more recent years positive trends emerged in such sectors as post and telecommunications, financial and related services and public administration.

Romania's unemployment rate peaked in early 1994 at 11.3% and declined to a low of 6.1% at the end of 1996. It peaked again at 12.0% in February 1999, reflecting the fall in GDP and a more vigorous privatisation process combined with the restructuring of large industrial enterprises, but fell to 11.5% by the end of the year. The unemployment rate in Romania is lower than peak unemployment rates in most other countries in transition. This evidences both the unstructured economy, dominated in the key sectors by *Regies Autonomes* (see Part III), and the buffer role of agriculture in labour markets. The unemployment situation varies across regions with highest rates in the underdeveloped north-east region counties of Vaslui, Suceava, Neamt, Botosani and in the mining and oil producing areas in the counties of Hunedoara, Valcea and Prahova. The lowest rates are in Bucharest municipality and the neighbouring county of Ilfov as well as in counties bordering with Hungary such as Satu Mare, Bihor and Timis.

Inflation

Romania's gradual approach to reforms brought inconsistent macroeconomic policies that were not sufficient to bring inflation under control. This contrasted with more successful countries in transition where price liberalisation at the beginning of the 1990s was followed by tight monetary and fiscal policies resulting in a steady fall in the rate of inflation. In Romania the inflation rate fluctuated greatly. The reduction in inflation (CPI) from annual triple-digit rates in 1991-93 to 28% in 1995 was the main success of the stabilisation programme of 1994. However, the relaxation of macroeconomic policies in 1995 and pre-election expansionary policies in 1996 led to a resurgence of inflationary pressures bringing, in turn, the year-end inflation to 57% in 1996. The second wave of price liberalisation combined with the substantial depreciation of the Leu (Leu = 100 bani; the plural of Leu is Lei) and wage-indexation policies resulted in a rise in the rate of inflation to 152% by the end of 1997. Tighter fiscal and monetary policies brought the year-end inflation down to 41% in 1998, but in 1999 the rate rose again to 55% (Table I.1). Thus, intermittent efforts to control inflation have only given temporary results in the face of the continuing failure to address structural deficiencies which result in fiscal pressures.

Exchange rate policy

Up to the beginning of 1990, Romania had a "commercial" rate of exchange that applied to all commodity trade and most services and a "non-commercial" rate that applied mainly to tourism. Since 1983,

the commercial exchange rate, applied to transactions in convertible currencies, was pegged to a basket of six convertible currencies and adjusted weekly for each currency. The rate fluctuated at about Lei 14-15 to the US\$. However, domestic prices, including those for traded goods, were fixed and the fluctuations of world prices and the exchange rate were reduced by the price equalisation fund. The fund alleviated the difference between fluctuating external and fixed domestic prices by compensating or taxing the Foreign Trading Organisations (FTOs). In February 1990, the commercial and non-commercial rates were unified and devalued to Lei 21 to the US\$. A further devaluation was implemented in November 1990 to the rate of Lei 35 per US\$.

For transactions in Transferable Roubles, the commercial rate was fixed at Lei 15.5 to the rouble between 1984 and the beginning of 1990. In February 1990 the rate was devalued to Lei 17 per rouble and at the beginning of 1991 the Transferable Rouble was abolished. All payments with the previous CMEA countries were required to be made in convertible currencies.

Efforts towards achieving the convertibility of the Leu started at the beginning of the 1990s. However, up to the end of 1996 administrative measures were used to stabilise the exchange rate. As a result, foreign exchange at the official rate remained generally scarce, leading to the fragmentation of the currency markets with various "free market" rates such as the black market exchange rate, kiosk exchange rate and interbank rate. Eventually, the official rate had to be depreciated in the direction of the free market rates, leading to the temporary convergence of the rates or the reduction of the spread between them.

Administrative attempts to control the exchange rate ended after the elections of November 1996. Four banks, which in March 1996 were licensed to deal in foreign currencies, allowed the rate to fall rapidly in January and February 1997. This led to closing the gap between the black market rate and official rate. In February the NBR gave dealer licenses to 24 banks. The liberalisation of the exchange rate regime led to the dramatic nominal depreciation of the Leu in a first stage of the process from Lei 3 591 per US\$ at the end of November 1996 to Lei 7 744 per US\$ at the end of February 1997. This adjustment was necessary so that the market reflected the actual value of the currency and was followed by a steadier nominal depreciation up to August 1998. In March 1998, Romania notified the IMF that it accepted full current account convertibility of the Romanian currency, but this decision did not affect exchange rate movements in 1998. For most of 1998, the exchange rate policy was a part of the NBR restrictive financial policies to support further disinflation. However, growing demand for imports and the deterioration in the balance of trade made the NBR allow for a stronger depreciation of the Leu, thus indicating a change in the focus of the exchange rate policy from fighting inflation to curing external imbalances.⁴ Consequently, the Leu depreciated significantly at the end of 1998 with the rate falling from 8 781 Lei/US\$ in August to 10 529 Lei/US\$ in December 1998. This trend continued in 1999 with the rate falling to above 18 000 Lei/US\$ by December 1999.

Government budget

The central government budget registered a surplus up to 1990, but since then has run deficits. Between 1992 and 1998 the deficit fluctuated between 2.6 and 4.9% of GDP (Table I.1). The deficit seems to be manageable and not particularly high in comparison with other countries in transition. However, the government budget presents only a partial view of the fiscal situation in Romania. Of particular importance was the quasi-fiscal support provided to the Romanian economy up to 1996. The main form of such support was direct lending by the NBR to state-owned agricultural and energy sector enterprises, financed at below-market interest rates (see Part IV). Such direct lending rose particularly strongly in 1996, and if added to the official budget deficit and other extra-budgetary spendings, would have brought the total public sector deficit to over 12% of GDP (OECD, 1998a). In 1997, this direct lending was discontinued.

A stringent package of austerity measures was applied in October 1998 to bring the budget deficit close to the limits agreed with the IMF. The package included expenditure cuts and tax increases, including higher excise taxes. Such a policy was continued in 1999. On the expenditure side the key to putting public finances on sound grounds remains public sector reforms, currently focused on public enterprises, but needing also to be extended to the civil service and social security system. On the revenue side,

privatisation proceeds provide most of the flexibility. A permanent problem is the taxation system, which lacks clarity and, in particular, predictability, is difficult to enforce and often leads to corruption or "hidden" forms of taxation.

Foreign trade

In 1990 merchandise exports fell sharply and imports rose as a reflection of the immediate economic goal of the government that came to power in December 1989 to restore living standards. The imbalance between growing demand and falling domestic production and investment was met by imports. Moreover, strict administrative regulations were imposed on exports, while imports were substantially eased compared to the previous system. In 1991, the stabilisation plan combined with a depreciation of the Leu contributed to the fall in imports of almost 40% to US\$5.7 billion, but exports fell as well to a low of US\$4.3 billion. Since 1991 both exports and imports have doubled, but Romania has constantly registered a trade deficit, which in 1998 amounted to US\$3.5 billion.

Romanian exports are characterised by a dichotomised specialisation in low-skilled labour-intensive products and capital-intensive products. While the specialisation in labour-intensive industries is the natural result of a relatively abundant and cheap labour force, the continued specialisation in capital-intensive industries is an outcome of both the production structure created before 1990 and policies supporting these industries during the transition period (OECD, 1998a). The relative importance of the second type of specialisation has been declining, but Romania's largely unreformed economy still relies on an outmoded production base with a high import content in major industrial sectors such as energy, fuels and chemicals. Such a structure undermines Romania's competitiveness on both domestic and foreign markets.

At the end of the 1980s Romania's foreign trade with the CMEA area and with the convertible currency area was roughly balanced, each area accounting for about 50% of total trade. Romania substantially redirected trade flows after 1990. In 1998, developed countries represented 72% of Romania's total foreign trade, the most important partner being the European Union (65% of exports and 58% of imports). The single most important partner country was Italy, which took 22% of Romania's exports and provided 17% of imports, followed closely by Germany. The share of countries in transition (former CMEA area) fell to 12% of total exports and to 22% of total imports, but Russia remained an important provider of energy products, in particular natural gas, and accounted for 9% of total Romanian imports in 1998. The overall share of trade (exports plus imports) in GDP increased from a low of 35% in 1991 to a high of 56% in 1997, but then fell to 53% in 1998.

Foreign debt

At the end of 1989 Romania had significant foreign exchange reserves and practically no foreign debt. However, the substantial trade deficit and collapse of the convertible currency account in 1990 reduced reserves by US\$1.6 billion to less than US\$400 million, which was enough for only a few weeks' imports. During 1991-1992, financing of the trade deficit was accomplished entirely by short-term trade credits and international financial assistance, in particular from the IMF, the World Bank and the governments of OECD countries. Also between 1992 and 1999, Romania each year had a current account deficit reflecting continued large trade deficits. Its financing was rather narrow with the bulk of the deficit financed by long-term official borrowing from both governments and multilateral institutions. Despite low levels of debt, Romania had difficulties in raising medium- and long-term finance from commercial banks and world capital markets. In 1999, Romania's current account position improved, but remained fragile. Foreign debt was rather moderate and at the end of 1999 amounted to US\$9.1 billion representing 27% of Romania's GDP.

Capital inflows

According to the National Office of Trade Registry, total foreign investments in Romania, from December 1990 to December 1999 amounted to US\$6.4 billion, of which US\$4.4 billion was direct investment and US\$2.0 billion was investment in privatisation contracts concluded by the State Ownership Fund (SOF).

With investments of US\$720 million France ranked first among foreign investors, followed by USA (US\$586 million), Germany (US\$559 million), the Netherlands (US\$555 million), UK (US\$553 million) and Greece (US\$472 million). More than half of the registered capital was invested in companies in the Bucharest district. The most attractive industries for foreign investors were: processing, car production, machinery production, banking, services and trade, and food-processing.

Foreign capital inflows remain small in Romania. This is in spite of low labour costs, a large domestic market and special FDI incentives (in particular favourable tax and customs treatment). There are several factors explaining this modest performance. Privatisation has proceeded rather slowly, in particular in such sectors as public utilities and finance. Macroeconomic instability discouraged long-term foreign investment. A matter of particular concern for foreign investors remains the lack of efficient infrastructure. Bureaucratic delays and complications at the many administrative steps to be undertaken to establish an enterprise are also cumbersome for both foreign and domestic investors. In the first half of 1999, the war in Yugoslavia, near the frontier with Romania, and often-postponed agreement with the IMF, increased uncertainty among foreign investors.

Social policy issues

Economic hardship existed in Romania before 1990, but living standards further deteriorated at the beginning of the transition as a result of the decline in output, the erosion of real wages and benefits, and an increase in unemployment. Between 1990 and mid-1994 real wages fell by 40% and the real income of households fell by more than one-fifth (OECD, 1998a). This was partly alleviated by the return to growth in the mid-1990s, but the removal of price controls and subsidies on staple products in 1997, combined with the rise in inflation not matched by the rise in nominal wages led to a 13.8% fall in real wages in 1997. In 1998 the situation reversed: nominal wages rose faster than consumer prices leading to a rise in real wages by around 3%. In the first quarter of 1999 real wages were about one-third lower than at the beginning of 1990.

The fall in real incomes affected households to varying degrees. Income inequality, as measured by the Gini coefficient, increased from 0.23 in 1989 to 0.30 in 1994, but slightly narrowed to 0.28 in 1996 (OECD, 1998a). Particularly vulnerable are households whose heads are unemployed or not in the labour force due to disability or home responsibilities. Relatively high poverty rates also characterise the households of farmers and other self-employed persons. Poverty incidence is the highest in north-east regions and the lowest in Bucharest (OECD, 1998a). The acceleration of enterprise restructuring will, most probably, result in higher rates of unemployment, wider differentiation of incomes and a larger share of the population experiencing poverty in the short term, but expected sustained economic growth should reduce economic hardship and improve standards of living in the longer run.

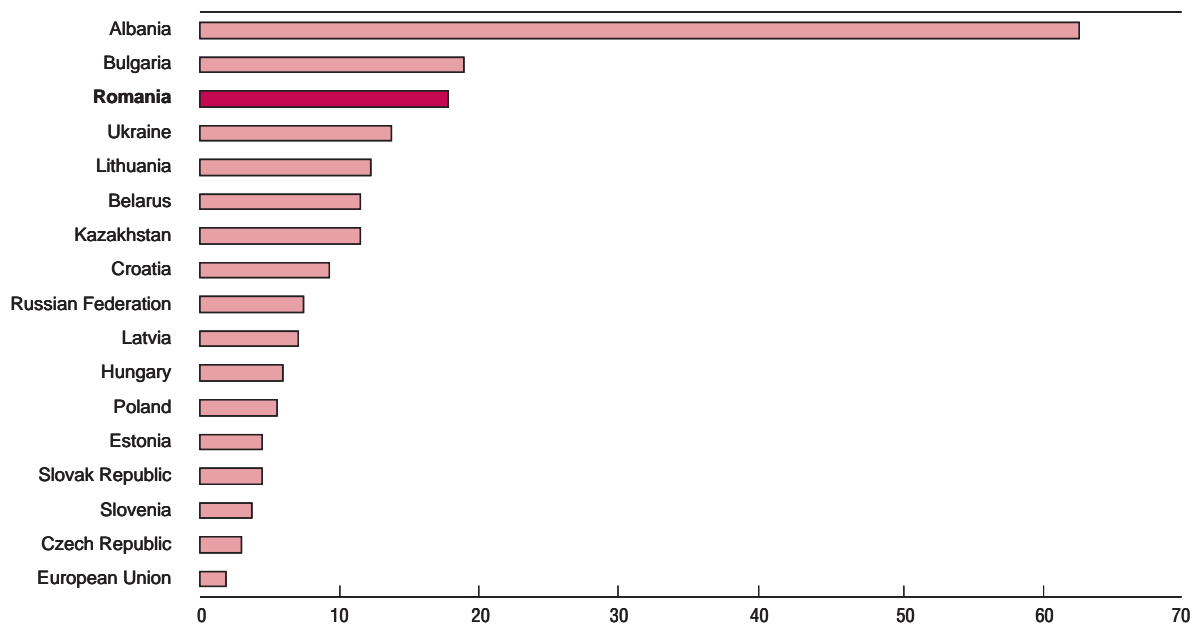
The social security system in Romania includes most important public income-transfer programmes such as old age, disability, sickness, child rearing, unemployment and low-income benefits. However, benefits are modest or low relative to average wages. Some benefits have been only partly indexed to consumer prices or wages during the 1990s, leading to their erosion in real terms.

B. Agricultural situation

1. Agriculture and the food sector in the economy

With a 36% share of national employment and a contribution to GDP of 16% in 1998, agriculture in Romania is more important than in any other country in central and eastern Europe, except for Albania (Graphs I.2 and I.7).⁵ In contrast to most other countries in the region, the share of agriculture in GDP rose sharply after the start of transition. This increase was not caused by expanding production, which fell in 1990 and has remained relatively stable since then, but rather reflects sharp declines in other sectors of the economy. The share in employment fell in 1998, but was still about 8 percentage points higher than at the start of transition (Table I.4).

Graph I.2. **Share of agriculture in GDP, 1997**
Per cent



Source: OECD Secretariat.

In 1991, the contribution of the food industry to GDP fell to 6.1%. However, in subsequent years the contribution rose steadily to 9.1% in 1996. The share of investments in the agro-food sector in total capital investments does not show a clear trend and has varied from 12% to 22% between 1991-1998. The major part of these investments is in agricultural production.

Romania was a net exporter of agro-food products in the pre-reform period, but since 1990 it has constantly been a net importer. The share of agricultural exports in total exports fell sharply to 1.5% in 1990, but then rose to fluctuate between 5% and 9%. The share of agro-food imports in total imports almost tripled in 1990 to 13%, remained at a high level (above 13%) during 1990-1993, but then fell and

Table I.4. **Share of agro-food sector in the economy, 1988-1998**
Per cent

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Share of agriculture in GDP	13.6	13.7	21.2	18.3	18.6	20.6	19.4	19.3	18.8	17.7	15.6
Share of food industry in GDP	n.a.	n.a.	7.1	6.1	6.6	7.0	7.4	7.9	9.1	n.a.	n.a.
Share of agriculture in employment	28.0	27.5	29.0	29.7	32.1	35.2	35.6	33.6	34.6	36.8	35.6
<i>of which: In the private sector</i>	n.a.	n.a.	23.3	80.4	85.2	86.7	89.2	89.7	90.5	95.1	n.a.
Share of agro-food sector in total capital investments	n.a.	n.a.	n.a.	13.7	15.5	11.8	22.0	17.6	18.4	12.1	19.8
<i>of which:</i>											
In agriculture	16.0	16.8	17.2	9.6	10.2	6.6	18.7	10.7	11.2	6.3	16.0
In food industry	2.1	2.4	2.7	4.0	5.2	5.2	3.2	6.8	7.0	5.5	3.8

n.a. Not available.

Sources: National Commission for Statistics; Ministry of Agriculture and Food.

fluctuated between 6% and 9%. These large variations can be mainly explained by changes in the trade policy measures with regard to agro-food imports (Parts II and IV), but also by fluctuations in the volumes of production and changes in the exchange rate policy.

2. Evolution of market conditions: prices and costs

Prior to 1989, producer and food prices were strictly controlled and fixed by the state. The price setting was based on production costs, to which a small profit margin was added. Input prices were also strictly controlled and administratively adjusted basically in line with rising production costs. After 1989, liberalisation of prices became a central issue in the transition process. Because the government was eager to keep food prices at low levels for social and political reasons, it opted for a phased programme of price liberalisation in 1990, reserving *de facto* a system of obligations to producers to sell through the state distribution network and keeping considerable price controls and (production) subsidies. Extensive intervention in agricultural markets was maintained for several years. In particular, prices of basic food products, such as bread, dairy products, pork and poultry, were subject to formal price ceilings or “negotiated” prices between producers, the processing industry and government (see Part IV).

In February 1990 there was a major rise in output prices of agricultural products, to compensate for immobility in these prices since 1984. Consequently, the output/input price ratio presumably improved in this year.⁶ In 1991 the output/input price ratio could not be maintained and fell back sharply. From 1991 to 1994, the ratio substantially improved but since 1995, it has again been gradually deteriorating. Between 1990 and 1998, output prices rose by about 60% less than input prices, meaning substantial overall deterioration of agricultural terms of trade over this period (Table I.5 and Graph I.3). However, it should be noted that the sharp worsening of the output/input prices occurred in all countries in transition at the beginning of the reform process. While the worsening of output/input prices in Romania was sharper in 1991 than in most other countries in transition, further price changes situated Romania among countries where the price-cost squeeze was not particularly strong *e.g.* close to relative price changes in such countries as the Czech Republic and Lithuania (Graph I.4).

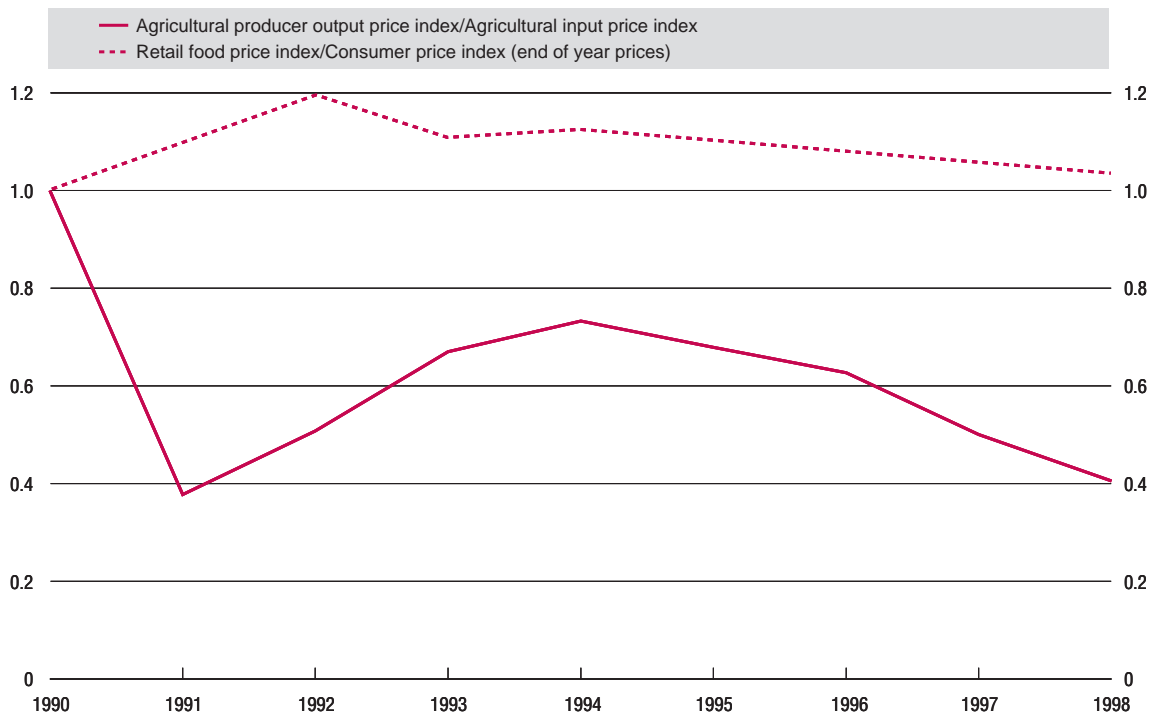
Table I.5. Price indices, 1991-1998
1990 = 100

	1991	1992	1993	1994	1995	1996	1997	1998
Agricultural producer output price index	642	1 401	4 418	9 843	12 585	19 536	37 164	44 795
Agricultural input price index	1 702	2 758	6 591	13 428	18 539	31 153	74 211	110 531
Grain combines	1 719	2 923	3 913	10 544	14 539	32 665	105 559	142 120
Tractors	1 255	2 132	6 216	1 147	17 085	42 843	88 161	111 981
Total agricultural machines	1 439	2 446	4 096	8 885	13 779	27 568	73 190	105 518
Fertilisers	1 851	1 851	5 110	14 436	18 716	17 454	33 530	96 181
Electric and thermic energy	1 853	3 312	6 475	15 327	19 019	39 953	96 927	112 057
Fuel and lubricants	1 805	4 004	9 934	13 733	20 864	29 152	96 176	128 579
Retail food price index (end of the year)	491	1 588	5 820	9 561	12 009	18 634	45 769	57 888
Consumer price index (end of the year)	445	1 330	5 259	8 507	10 868	17 052	42 872	55 717

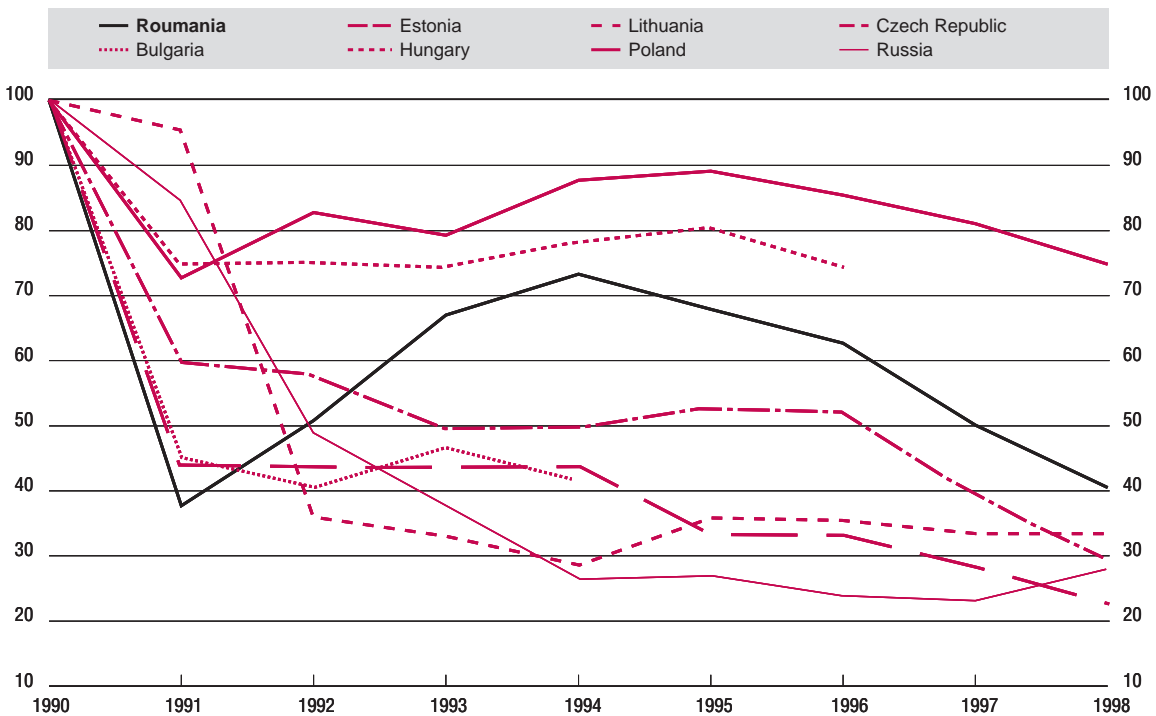
Sources: Lazar (1999); National Commission for Statistics.

The ratio between the retail food price index and the consumer price index increased in the first years of transition. Since 1992, this ratio has been fairly stable, showing a slight downward trend, which means that in more recent years food prices have been rising at a slightly lower rate than the consumer price index (Table I.5 and Graph I.3).

Graph I.3. Price relationship, 1990-1998



Graph I.4. Agricultural output/input price index ratio, 1990-1998



Source: OECD.

3. Sector performance: output, employment and incomes

Output

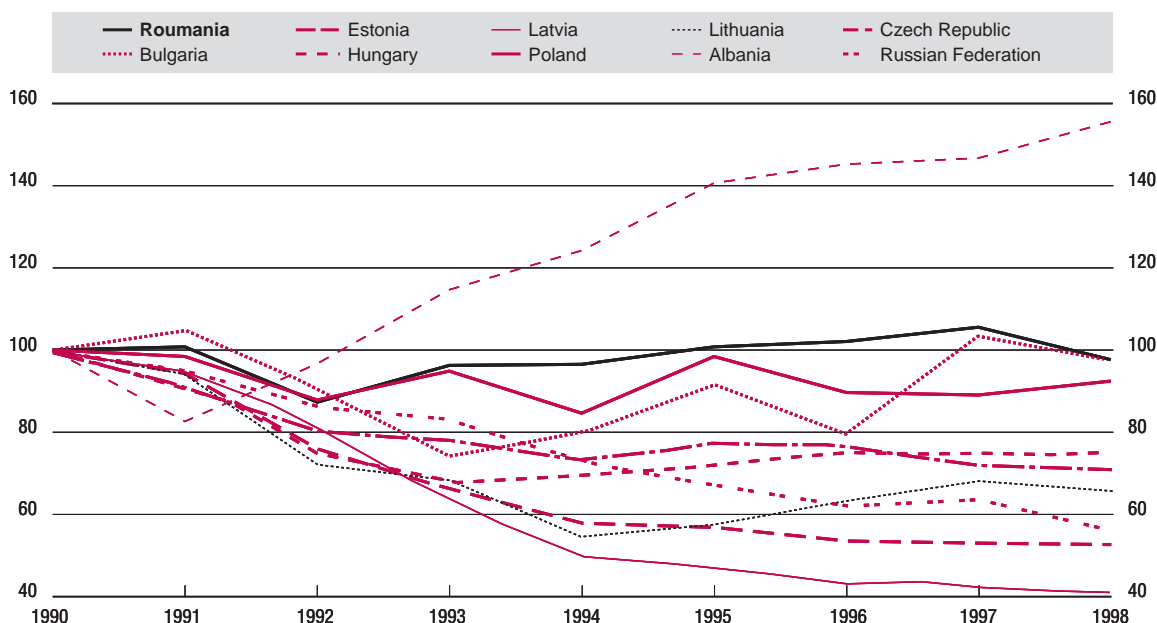
After a fall of 3% in 1990, the volume of Gross Agricultural Output (GAO) has been fairly stable in Romania, with the exception of 1992, when it came down sharply (Table I.6). In 1998, the GAO was just 2% lower than in 1990, despite significant worsening of agricultural terms of trade over this period (see above). Of the central and eastern European countries, Romania has been the country with the smallest fall in agricultural production since the transition began, except for Albania (Graph I.5). This is due to a relatively high level of support provided for agricultural production in particular up to 1996 (see Part V), but also to the highly fragmented land ownership pattern resulting from the privatisation process. Small-scale farming, producing mostly for household use, has been very loosely linked with the market and rather immune to the adverse changes in prices. The same phenomena can be observed in some other countries in transition, such as Poland, but in particular in the household sector production in the NIS area, *e.g.* in Russia (see OECD, 1998*b*).

Table I.6. **Changes in gross agricultural output (GAO), 1989-1998**
For indices: 1989 = 100

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Volume index of GAO	100.0	97.1	97.9	84.8	93.5	93.7	97.9	99.1	102.5	94.8
Volume index of crops	100.0	92.8	96.8	82.5	94.5	94.8	100.0	101.8	111.8	99.4
Volume index of livestock	100.0	102.2	98.3	87.9	91.6	91.6	94.3	94.9	88.9	87.8
Share of crops in total GAO, %	54.4	53.0	65.9	58.0	62.9	60.8	59.6	59.8	62.9	53.9
Share of livestock in total GAO, %	45.6	47.0	34.1	42.0	37.1	39.2	40.4	40.2	37.1	46.1

Source: National Commission for Statistics.

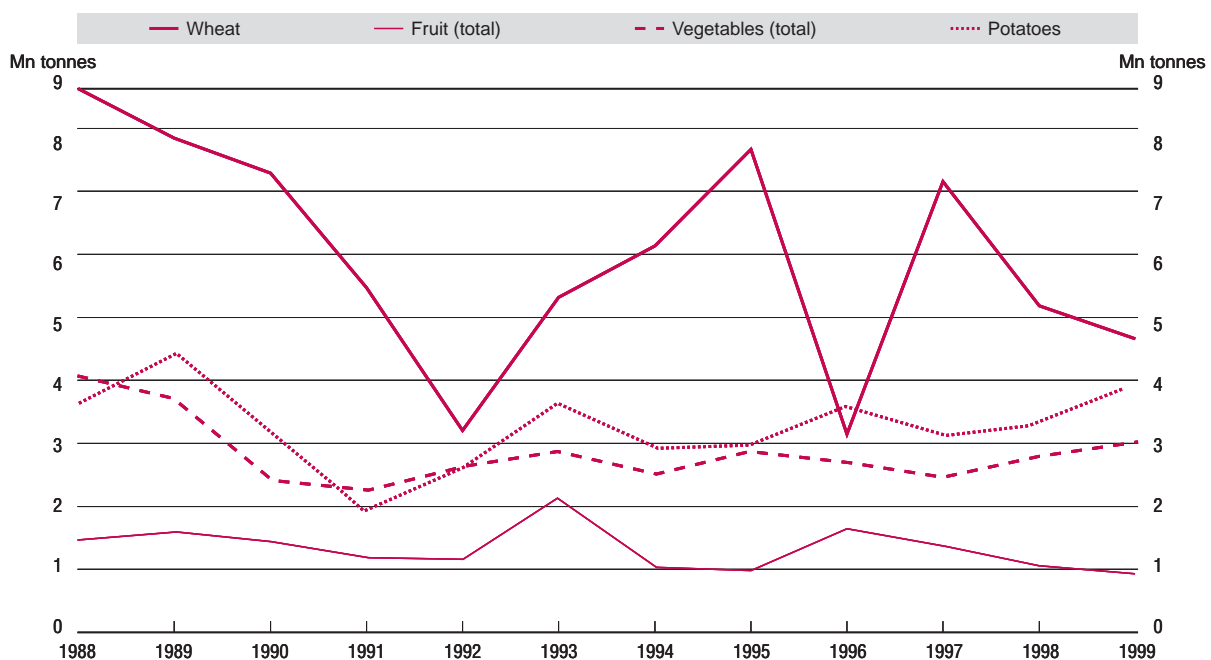
Graph I.5. **Gross agricultural output, 1990-1998**
1990 = 100



The share of crop production in the total GAO has fluctuated in the transition period between 53% and 63%, reflecting large fluctuations in volumes produced from one year to another. These fluctuations are mainly due to weather conditions, to which Romanian farmers are quite vulnerable, as the use of fertilisers and pesticides dropped to low levels and the technologies used deteriorated. Other factors contributing to these fluctuations were changes in price conditions, the impact of land reform, and the deteriorating irrigation system. The major production drop in 1992 was mainly caused by bad weather, but was reinforced by a fall in area planted. On the contrary, good weather conditions contributed to a remarkable recovery in crop production in 1995 and in particular in 1997, but the rise was not sustainable as production fell by 11% in 1998. Overall, crop production in 1998 was at about the same level as in 1989, but changes in the volume of production differed across commodities (see Graph I.6 and Tables I.7 and I.8; see also Part IV for a more detailed description of the production performance by commodity).

The structure of crop production has been strongly influenced by land reform and the emergence of several million small-scale farms. Being poorly equipped with land and farm equipment, lacking cash, access to credit, agronomic knowledge and having no orientation in a market economy, these farms have chosen a low-risk, low-return production strategy. In practice this has meant a shift from mechanised to non-mechanised crops, and from commercial to traditionally non-commercial crops (Chirca and Tesliuc, 1999). Thus, area sown to sugar beets fell by three-fourths compared to the 1989 level (Table I.7). On the contrary, area sown to maize rose substantially as maize can be used as fodder as well as food for human consumption, is easy to store, can be harvested by hand, and no seeds need to be purchased. The area sown to oilseeds also diminished rapidly at the beginning of the 1990s. However, the crop has regained attraction due to higher prices on international markets and improvements in the downstream sector. In particular, the improvement in the relationship between independent farmers and the oil factories has led to sunflowers being increasingly grown by small producers. Potato production recorded a dramatic decline in 1991 but since then it has been taken over by small private farms and the area sown to potatoes has been increasing. Potato production tends to be a non-cash crop for household consumption. Only a small part of production is sold on local markets.

Graph I.6. Production development of some agricultural products in Romania, 1988-1999



Source: Roumanian Statistical Yearbook, 1997, National Commission for Statistics, 1999.

Table I.7. **Crops: sown areas, 1988-1999**
Thousand hectares

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999p
Sown area	9 700	9 847	9 402	9 197	8 909	9 166	9 220	9 225	8 879	9 060	8 973	8 494
Total grain	5 907	6 027	5 704	6 049	5 774	6 395	6 558	6 445	5 843	6 320	5 921	5 371
<i>of which:</i>												
Wheat ¹	2 415	2 319	2 253	2 154	1 461	2 282	2 412	2 481	1 782	2 409	2 020	1 675
Rye	n.a.	40	45	63	15	26	29	21	16	16	14	12
Barley	764	768	749	1 018	628	637	785	582	515	627	517	416
Oats	92	106	144	210	304	365	334	239	234	219	228	248
Corn/Maize	2 579	2 733	2 467	2 575	3 336	3 066	2 983	3 109	3 277	3 038	3 129	3 013
Oilseeds	992	1 072	655	643	810	703	664	807	1 012	872	1 156	1 244
Sugar beet	248	256	163	202	180	97	130	133	136	129	118	66
Potatoes	326	351	290	235	219	249	248	244	257	255	261	274
Grapes	218	213	224	225	235	245	247	249	252	255	254	273
Fruits (total)	n.a.	318	313	311	305	296	289	278	271	267	263	239
Vegetables (total)	267	253	216	195	223	219	204	214	217	208	223	234

p Provisional.

n.a. Not available.

1. For 1988: wheat and rye.

Sources: National Commission for Statistics; Ministry of Agriculture and Food.

Table I.8. **Production of major crops, 1988-1999**
Thousand tonnes

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999p
Total grain	19 286	18 379	17 174	19 307	12 289	15 493	18 184	19 883	14 200	22 100	15 453	17 037
<i>of which:</i>												
Wheat ¹	8 632	7 846	7 289	5 473	3 206	5 314	6 135	7 667	3 144	7 156	5 182	4 662
Rye	n.a.	90	90	86	21	40	51	43	20	29	26	21
Barley	3 202	3 436	2 680	2 951	1 678	1 553	2 134	1 816	1 108	1 889	1 238	1 019
Oats	129	168	234	258	508	554	497	404	291	325	362	390
Corn/Maize	7 182	6 762	6 810	10 497	6 828	7 988	9 343	9 923	9 608	12 680	8 623	10 935
Oilseeds	1 069	1 034	739	823	920	821	874	1 055	1 219	1 002	1 288	1 607
Sugar beet	4 869	6 771	3 278	4 703	2 897	1 776	2 764	2 655	2 848	2 726	2 361	1 415
Potatoes	3 621	4 420	3 186	1 873	2 602	3 709	2 947	3 020	3 591	3 206	3 319	3 957
Wine grapes	1 196	915	954	849	905	1 339	1 033	1 314	1 422	1 170	801	1 009
Fruit (total)	1 508	1 580	1 453	1 165	1 167	2 183	980	917	1 632	1 417	1 036	941
Vegetables (total)	4 097	3 727	2 358	2 214	2 632	2 872	2 569	2 871	2 728	2 427	2 819	3 049

p Provisional.

n.a. Not available.

1. For 1988: wheat and rye.

Sources: National Commission for Statistics; Ministry of Agriculture and Food.

The main vegetables produced in Romania are melons, tomatoes, cauliflower and cabbages, garlic, green peppers and root vegetables. Important fruits are apples and plums. Compared to the pre-reform period, the area allocated to fruit production has not changed substantially. The area sown to vegetables has fluctuated, but in most recent years has been about 20% smaller than in 1989. Some 90% of the vegetable production is grown by small household plots and mainly used for self-consumption and for sale on local markets. Fruit production fell sharply in 1994 and 1995, after an extremely high crop in 1993. These fluctuations were caused mainly by weather conditions. However, general problems for fruit producers arise from the lack of finance for the renewal of fruit trees, for purchases of fertilisers, pesticides, and machinery, for the renewal of irrigation systems, as well as for the creation of adequate storage capacity. This especially applies to small-scale private fruit growers as they do not dispose of the necessary management and knowledge, storage and marketing capacity, or the ability to renew and adapt

production capacity. Notwithstanding, Romania's potential for fruit production from the standpoint of climate, soils, and basic technical knowledge is good. The domestic production of fruits and grapes meets domestic demand. Wine has become an important export product to the European Union.

Livestock sector production has fluctuated, but in 1998 was about 12% lower than in 1989. Its share in the total GAO varied between 34% and 46% (Table I.6). Livestock production rose at the beginning of the transition mostly due to the extensive slaughtering of animals, in particular cattle. The downward trend in livestock production in more recent years has been caused by the fall in domestic demand for meat, but also by a set of other factors with negative impacts on livestock numbers. These numbers approximately halved between 1989 and 2000 (Table I.9). The main reasons for this fall are: the transitional problems linked to the dissolution of the co-operatives specialising in livestock production and the unsuitability of their buildings and technical equipment for small-scale farming; the removal of heavy subsidies to the state farm sector after 1996; liquidation and privatisation of some state farms specialising in livestock production after 1996; the inefficiency of the downstream sector passing its high costs of production onto producers and consumers; the inadaptability of marketing systems to the new land use pattern dominated by small-scale farming; rising prices for inputs making them inaccessible for small-scale producers. Due to these problems, small-scale farmers adjusted livestock numbers to the needs of their own families and to the limited opportunities of selling animal products on the local markets.

The intensive livestock industry has been severely affected by the transition, in particular pigmeat and poultry production, dominated in the past by large-scale state and co-operative farms. Between 1989-2000 the pig herd more than halved with pig numbers falling sharply on large farms and not being compensated by a rise in pig breeding on small private farms. State farms used to be important suppliers of poultry products, as well. Poultry numbers on private farms have recently started to grow, compensating the decline in former state farms. The number of cattle is still decreasing and the average weight of slaughtered animals is relatively low.

As opposed to meat, milk production increased in recent years due to higher milk yields per cow, as the total number of cows continued to decline (Tables I.9 and I.10). Since cow numbers decreased after the start of transition, more forage became available, thus enabling a rise in productivity levels. Some 90% of the total milk production comes from the small-scale private sector as opposed to about 30% before the transition. In fact, more than 80% of Romanian farms have less than five cows and the average number of cows held by the small private farms is only 1.3. A large share of milk produced on small farms is retained by farmers for household consumption and for feeding. The very small scale of dairy farms is a major impediment for further development of the sector as small farms lack capital for investment and dairies face difficulties in milk collection and enforcing quality standards (see also Part IV for a more detailed description of the production performance by commodity).

Table I.9. **Animal numbers, 1988-2000**

Thousand heads, as of 1 January

Herd size	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000 ^p
Cattle	6 559	6 416	6 291	5 381	4 355	3 683	3 597	3 481	3 496	3 435	3 235	3 143	3 038
<i>of which:</i>													
Cows ¹	2 727	2 758	2 468	2 123	2 266	2 025	1 979	1 963	1 983	1 939	1 844	1 790	1 756
Pigs	14 328	14 351	11 671	12 003	10 954	9 852	9 262	7 758	7 960	8 235	7 079	7 194	5 749
Sheep and lamb	16 839	16 210	15 435	14 062	13 879	12 079	11 499	10 897	10 381	9 663	8 937	8 409	9 162 ²
Goats	990	1 078	1 017	1 005	954	805	776	745	705	654	610	585	n.a.
Poultry	127 304	127 561	113 968	121 379	106 032	87 725	76 532	70 157	80 524	78 478	66 620	69 480	68 090

p Provisional.

n.a. Not available.

1. Buffalo cows and heifers included.

2. Goats included

Sources: National Commission for Statistics; Ministry of Agriculture and Food.

Table I.10. Production of basic animal products, 1988-1999

	Units	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999p
Total meat (carcass weight)	'000 tonnes	1 519	1 454	1 600	1 577	1 402	1 406	1 372	1 236	1 173	1 170	1 129	1 088
<i>of which:</i>													
Beef and Veal	'000 tonnes	191	220	317	317	250	252	258	202	177	185	168	189
Pork	'000 tonnes	818	798	788	834	789	761	773	673	631	667	643	579
Sheepmeat ¹	'000 tonnes	82	97	109	94	100	92	81	75	72	64	63	54
Poultrymeat	'000 tonnes	428	339	386	332	295	301	260	286	293	248	254	266
Eggs	Million pieces	8 072	7 040	8 077	7 177	6 140	5 633	5 407	5 567	5 783	5 271	5 331	5 263
Milk ²	Million litres	4 810	4 119	4 031	4 182	4 108	4 351	4 963	5 283	5 348	5 258	5 090	5 014

p Provisional.

1. Goats included.

2. Cow and buffalo milk; calves feeding included. The interpretation of milk production data has to be particularly cautious as about 90 per cent of milk is produced on small farms and the amounts produced are estimated.

Source: National Commission for Statistics; Ministry of Agriculture and Food.

Employment in agriculture

The share of rural population in the total fell from about 60% in 1975 to 46% in 1980 and has remained relatively stable since then (Table I.11). A predominant part of the rural population is employed in agriculture and in 1999 the share was 73% with the remaining 27% divided almost equally between industry and services. The economic activity rate in rural areas has been much higher than in urban areas at 60% and 47%, respectively, in 1999.⁷ Similarly, the rate of unemployment in rural areas has been relatively small at 2.7% in 1999, compared to 9.9% in urban areas.⁸ However, the rates do not reflect the reality of substantial disguised unemployment, in particular in rural areas.

Table I.11. Rural population and agricultural employment, 1990-1998

	1990	1991	1992	1993	1994	1995	1996	1997	1998p
Total population (Million)	23.2	23.2	22.8	22.8	22.7	22.7	22.6	22.5	22.5
Share of rural population (%)	45.7	45.9	45.7	45.5	45.3	45.1	45.1	45.0	45.1
Employed in agriculture (Million)	3.1	3.1	3.4	3.5	3.6	3.2	3.2	3.3	n.a.
Share of agricultural employment (%)	29.0	29.7	32.1	35.2	35.6	33.6	34.6	36.8	35.6

p Preliminary.

n.a. Not available.

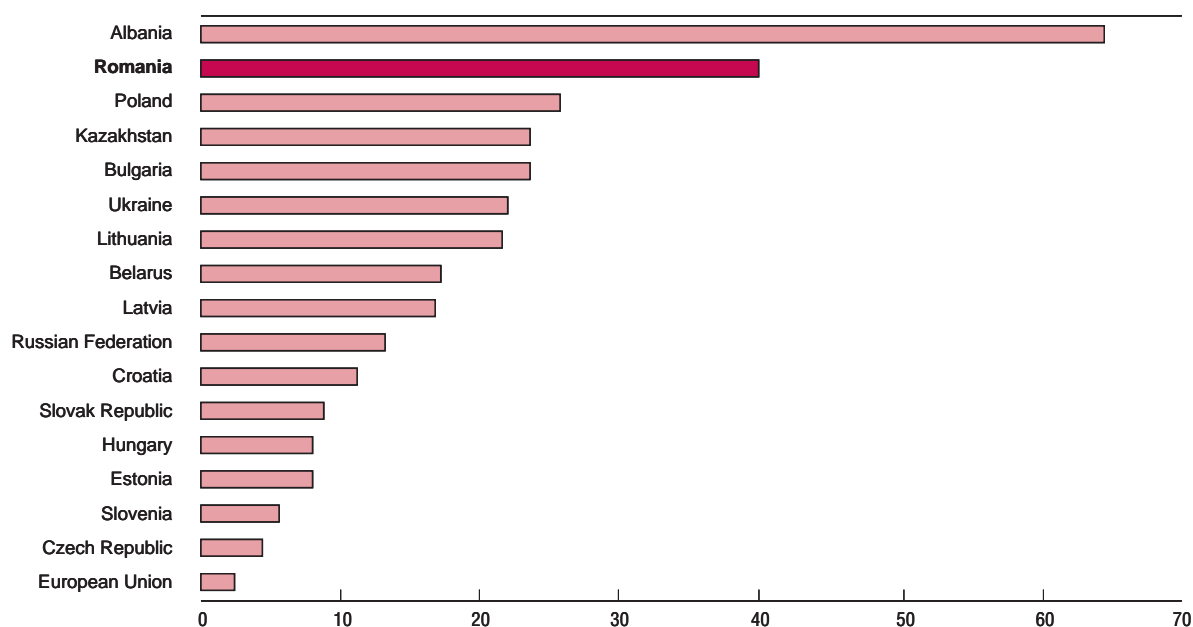
Source: National Commission for Statistics; OECD Secretariat.

As indicated above, the share of agriculture in total employment rose from 29% in 1990 to 37% in 1997 and fell slightly in 1998. The share increased sharply as a result of a rise in agricultural employment, but also due to a fall in non-agricultural employment. At about 35-37%, the share is second largest in central and eastern European countries, after Albania (Graph I.7).

Romania's agricultural employment was fairly stable until 1991, with some 3 million persons employed. After the land reform, it increased dramatically, peaking at 3.6 million in 1994. Since then it has stabilised at 3.2-3.3 million, and in 1997 was more than 0.2 million larger than at the beginning of transition.⁹ The increase in agricultural employment is explained by the absence of alternative employment opportunities for the rural population, an enormous fragmentation of land ownership (see Part III) enhancing more labour-intensive methods of production, and an increase in unemployment rates in urban areas forcing a part of population to seek employment opportunities in agriculture. Therefore, the evolution of agricultural employment has been the result of a push-pull factor: while a consistent decline in industrial employment has acted as an urban employment push out factor, land reform and agricultural employment opportunities in rural areas has played the role of a pull mechanism. Thus, in a deteriorating employment situation agriculture has played the role of a social buffer.

Graph I.7. Share of agriculture in total employment, 1997

Per cent



Source: OECD Secretariat.

Following the dismantling of agricultural production co-operatives, the structure of employment according to the type of farm ownership changed substantially. The co-operative sector disappeared in 1992 and the dominant part of farm employment has been taken over by small private farms (Table I.12). There has also been a rapid fall in employment on state-owned farms. Until 1996 the decrease in employment on these farms was due to a labour downsizing process, which accompanied the restructuring of some of these farms. The reduction in employment on state farms in 1997 was further stimulated by the privatisation and liquidation of some of these farms. Accordingly, the average number of employees in large-scale farms fell from 561 in 1992 to 283 in 1997.

Surveys on socio-economic characteristics of farm labour show that the typical farm household in Romania is made up of an elderly, self-employed male farmer with a below average education level, and unpaid female family workers. In general, the population employed in agriculture can be divided into three categories: those who are self-employed full-time (56% in 1996), those holding a second part-time job in agriculture (20%) and part-timers who do not have a second job, but are largely underemployed

Table I.12. Agricultural employment by farm ownership type, 1985-1997

Thousand persons

Type of farm ownership	1985	1990	1991	1992	1993	1994	1995	1996	1997
State	523	526	503	359	295	240	181	162	85
Mixed	0	0	0	65	103	78	80	87	81
Private	460	735	2 583	2 937	3 139	3 242	2 926	3 000	3 156
Co-operative	2 040	1 795	30	1	0	0	0	0	0

Source: National Commission for Statistics.

(MoAF, 1997). Whereas in urban areas the employee status is predominant, in agriculture the status of self-employment is most important (Table I.13). The employee status accounts for less than 10% in agriculture compared to above 60% in the economy as a whole. Together with the high percentage of unpaid family workers, the high proportion of self-employed reflects the importance of small family farms. The second most frequent pattern of farm employment is labour provided by relatives or non-relatives who are expected to be paid in kind. Use of salaried workers comes third. While the poorest farm households tend to rely exclusively on household members, the richest farms supplement family labour with salaried workers. Farm employment is also characterised by a high share of old-age groups (50 years and over) at 53% in 1997 compared to 28% for total employment (Table I.14).

Table I.13. **Agricultural employment by occupational status**
Per cent

	1994	1995	1996	1997	
				Agriculture	Total employment
Employee	11.7	9.6	9.3	8.5	61.1
Employer	0.0	0.0	0.0	0.0	1.3
Member of agr. co-operative	4.5	2.2	1.3	1.1	0.4
Self-employed (farmer)	44.7	52.2	47.2	46.6	20.1
Unpaid family worker	39.1	36.0	42.2	43.8	17.1
Total	100	100	100	100	100

Source: National Commission for Statistics.

Table I.14. **Agricultural employment by age group**
Per cent

	1994	1995	1996	1997	
				Agriculture	Total employment
15-24	13.5	15.3	14.0	14.0	13.6
25-34	10.1	10.8	12.6	13.0	23.3
35-49	20.4	19.4	20.3	19.8	35.4
50-64	35.8	33.0	31.8	31.3	19.1
65+	20.2	21.5	21.3	21.9	8.6
Total	100	100	100	100	100

Source: National Commission for Statistics.

There is a substantial gap in education levels between farmers and other groups of the population. Almost 27% of the economically active population in rural areas (mostly farmers) has no formal schooling or just primary level education (4 years) compared to below 3% in urban areas. In addition, just 1.5% of those employed in rural areas has university level education, compared to 15% in urban areas (NCS, 1999b). Low levels of education make farmers uncompetitive on labour markets and impede the prospects for a substantial fall in agricultural employment when Romania's economy finally starts to recover and new employment opportunities emerge.

Agricultural incomes

While in 1990 the average monthly wage in agriculture, paid by large-scale farms, amounted to 109% of the national average, by 1997 it had fallen to 74% (Table I.15). At the same time, the average wage in the food and beverage industry stabilised at close to the national average. In relation to the minimum income level, agriculture faced a serious drop in 1991, but the sector was able to strengthen its position until 1996. The 1997 figures indicate a relapse. However, the relative importance of salaried employees

Table I.15. **Nominal average monthly salaries 1990-1997, in Lei**

	1990	1991	1992	1993	1994	1995	1996	1997
National economy	3 381	7 460	20 140	59 717	141 951	211 373	321 169	632 086
Agriculture ¹	3 616	6 752	17 151	49 053	112 922	171 148	254 194	469 680
as % of the national average	107	91	85	82	80	81	79	74
Food and beverages industry	3 050	7 401	19 925	58 897	137 351	210 067	323 186	603 122
as % of the national average	90	99	99	99	97	99	101	95
Minimum income level	2 000	5 635	10 271	33 227	53 974	75 000	97 000	250 000
as % of the national average	59	76	51	56	38	35	30	40
Agricultural salaries as % of the minimum income level	181	120	167	148	209	228	262	188

1. Average monthly salaries on State farms.

Source: National Commission for Statistics.

in agriculture has been constantly declining with the progress in farm privatisation and restructuring. Therefore, the level of agricultural salaries is less and less indicative of the real income situation in rural areas.

Household surveys provide much more insight into the income situation of the vast majority of the Romanian rural and farming population. These surveys have shown that the cash income of peasant households is on average about 60% lower than the cash income of non-agricultural employee households. If the estimated cash value of food produced and consumed by the members of the household is added, the difference shrinks to 25% and peasant household income becomes only 3% lower than the average in the economy. However, as peasant households consist of more family members than on average, adjusted income per person in peasant households is still about 20% lower than the average. The only category of households whose income per person is lower is that of households headed by unemployed persons (Table I.16). Incomes of peasant households are largely dependent on incomes from own production, which is partly sold (accounting for 15.5% of income), but mostly used for own consumption (representing 48% of the income value). The income obtained from other sources includes salaries (mainly from transportation and trade activities) and social security earnings.

Rural poverty is a serious socio-economic issue in Romania, in particular in the eastern part of the country. Family farming, which involves more than 60% of agricultural land, has to cope with highly scattered land ownership, a mismatch between access to farmland and access to labour, scarcity of farm equipment and machinery, and faltering factor and output markets. However, land ownership has the merit of shielding most of the rural population against extreme poverty. As discussed above, agriculture still acts as an occupational buffer against the socio-economic effects of the transition and absorbs the labour made redundant by urban industries and other sectors. Farming is treated as a last resort occupation. This high underemployment is the main cause of low agricultural income, which together with a lack of alternative employment opportunities is the main cause of poverty in rural areas (Chirca and Tesliuc, 1999).

Table I.16. **Nominal monthly average incomes in households, 1997-1998**

Thousand Lei

	Per household	Per cent	Per person	Per cent
Average: all households	1 566.6	100.0	552.8	100.0
Employees	2 038.0	130.0	599.6	108.0
Employers	3 193.9	204.0	935.5	169.0
Self-employed in non-agricultural activities	1 573.4	100.0	448.6	81.0
Peasants	1 523.3	97.0	460.4	83.0
Unemployed	1 357.0	87.0	379.6	69.0
Pensioners	1 239.6	79.0	556.6	101.0

Source: D. Gavrilăscu *et al.* (1998).

Pensioners (recipients of social security or agricultural social pension benefits; usually 60 years old and over) seem to be the only large rural population category for which poverty risks are not high. About 40% of rural residents live in pensioner-headed households that account for some two-thirds of private land ownership. As rural pensioners may add agricultural income to their pension benefits, the odds for poverty are lower than for other categories of rural population (Chirca and Tesliuc, 1999). Land ownership also gives them the possibility of leasing a part of their land to other farmers, including landholding companies, and of receiving in exchange payment in kind (most often grain) or cash. Moreover, from 1997, ownership of land gave them access to input vouchers (see Part IV), adding to their purchasing power.

Performance of the upstream sector

Romania's government has stimulated the use of inputs in farm production throughout the transition period, but through different methods (see Part IV). Substantial subsidies were applied to input prices and, in particular, to preferential credits for the purchase of fertilisers, seeds, pesticides, and farm mechanisation. As access to credits for purchasing inputs was easier for the state farms and some associations than for small private farms, the policy came under attack. In 1997 the input voucher system was put in practice, giving privileged access to farm inputs to small-scale farmers (see Part IV). As a result, the demand for cash inputs, such as fertilisers and pesticides, among almost autarkic farmers was boosted successfully. According to surveys carried out in 1998, the percentage of farmer households that buy inputs (with vouchers as part of the payment) rose to 80% in 1997-98, from an estimated 40% in 1996 (Chirca and Tesliuc, 1999). However, the organisation of input distribution in Romania remained virtually unchanged at the beginning of transition and in more recent years has been reformed only gradually (see Part III).

Romania used to have a large domestic capacity for manufacturing almost all its farm machinery. Since 1989, the fleet of agricultural machinery and tractors has been continuously growing, as some newly emerging private farmers tried to equip their farms with basic machinery. However, the number of farms without any machinery or tractor is still substantial as prices are too high for small producers, even if preferential credits are offered (see Part IV). While the fleet of cereal harvesters, adapted to large-scale production, fell between 1989 and 1999, the number of tractors increased by 30% and the number of ploughs and harrows rose by 73% and 81%, respectively (Table I.17). The rise in the fleet of tractors has resulted in a fall in the area of agricultural land per tractor from 97 hectares in 1989 to 87 hectares in 1997. This compares to 20 hectares per tractor in the European Union. In 1998, less than 2% of the tractors used in Romania were foreign made. There is a large tractor plant at Brasov, which used to produce about

Table I.17. **Fleet of tractors and agricultural machinery in Romania, 1989-1999**
Thousands

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999p
Tractors	129	105	131	140	156	162	162	163	164	167	168
<i>of which: in the private sector</i>	n.a.	n.a.	101	102	118	129	129	132	136	139	140
Cereal harvesters	38	35	35	35	34	35	36	36	34	33	31
<i>of which: in the private sector</i>	n.a.	n.a.	28	28	27	28	30	30	29	28	27
Ploughs	71	63	73	82	94	102	107	113	117	122	123
<i>of which: in the private sector</i>	n.a.	n.a.	57	61	73	84	89	95	100	105	107
Disc harrows	37	34	36	41	48	52	55	59	62	65	67
<i>of which: in the private sector</i>	n.a.	n.a.	27	29	36	42	45	49	53	56	58
Cereal drillings machines	18	16	17	18	21	22	24	26	26	28	28
<i>of which: in the private sector</i>	n.a.	n.a.	13	14	17	18	20	22	22	24	24
Crop drillings machines	18	17	17	19	22	24	26	27	28	30	30
<i>of which: in the private sector</i>	n.a.	n.a.	14	14	17	20	22	23	24	26	26

p Provisional.

n.a. Not available.

Source: Ministry of Agriculture and Food.

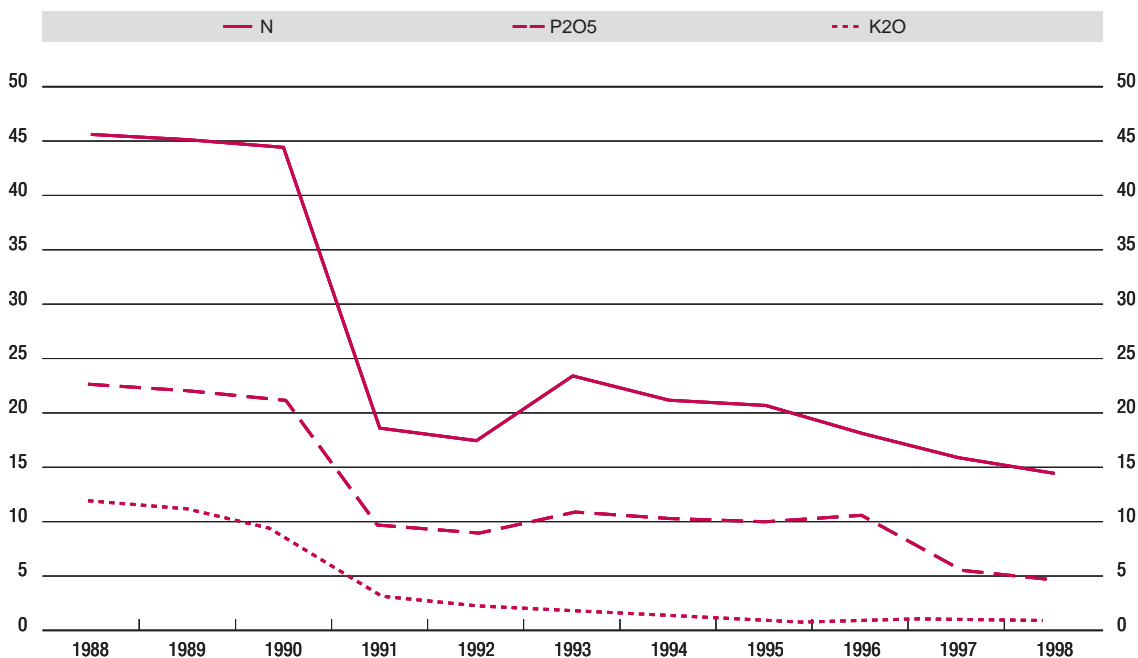
95% of Romania's tractors. However, the plant faces problems related to the quantity and quality of the machinery produced. In fact, there are too many tractors produced with too much horsepower, which are unsuitable for the many newly created small farms. Furthermore, the quality of Romanian machines is often low.

Fertiliser consumption fell dramatically in the first years of transition. This reduction continued after 1991, though the pace of decline slowed (Graph I.8). Commercial companies (previous state farms) and farmers associations, which normally had contracts with state distribution agencies, accounted for the vast majority of fertiliser consumption in Romania, largely under the influence of the subsidy system applied up to 1996. Although Romania has a large industrial capacity for producing fertilisers, production has dropped substantially, mainly due to the fall in domestic demand, but also to the very out-dated technologies used and decreasing prices on the world market, which has reduced the competitiveness of Romanian fertilisers. Moreover, Romania's fertiliser industry is characterised by high energy consumption and serious pollution problems, in particular in the case of sulphuric and nitric acid production (EC, 1998a). By 1997, all fertiliser producers had been privatised.

The consumption of certified seeds sharply decreased between 1989 and 1997. The replacement of certified seeds by self-produced seeds has negatively affected crop yields. The consumption of pesticides also dropped by 34% between 1990 and 1997. The low application of pesticides has negatively affected the state of vegetation and consequently crop yields. The Romanian production of pesticides decreased from 33 000 tonnes in 1989 to 15 000 tonnes in 1996 and part of the domestic demand has been met by imports.

The decline in livestock production and the restructuring of farms (small farmers tend to depend on their own feed stocks) have caused a decreasing demand for animal feed. Moreover, the quality of Romanian feed is generally low. The animal feed industry is concentrated in some 67 large companies, frequently state-owned. Most of the large feed factories have their own feed mills, animal farms and storage facilities.

Graph I.8. Chemical fertiliser use (active substance Kg/ha) 1988-1998



Source: Ministry of Agriculture and Food.

Food industry

The Romanian food industry is characterised by a low level of productivity, over-capacity, outdated technologies, and a lack of adaptation to demand. In the communist period, production facilities were built in each county on the basis of political decisions, with capacities based on estimated input supply and output demand. In 1990, the food industry was centred on 365 State enterprises (EC, 1998a). In general, the equipment of the agro-food industry was outdated, as investments in plant renewal or upgrading had been postponed. Energy and labour use was high and inefficient. By international standards, the quality of products was low. Moreover, the production plants were often poorly located in relation to the supply of products to be processed.

Since 1990, the number of private food industry enterprises has increased sharply. From 1996 to 1997 alone the number of enterprises increased by 5 676. At the end of 1997 there were 17 069 registered food processing enterprises. There is also some food processing capacity within agricultural commercial companies (mostly state-owned), including facilities for wine making, flavouring and bottling and cheese-making. The share of private enterprises in total food production has been continuously increasing (see Part III). Currently, the food industry is made up mainly of small enterprises with more than 80% of them employing less than 10 persons. Only about 4% of enterprises have more than 250 employees.

The volume of processed agricultural products has shown a downward trend since 1990, in particular for dairy products (Table I.18). The downward trend can be explained by reduced domestic demand, low competitiveness of the food industry in domestic and foreign markets, and reduced supply of agricultural products for processing. The reduction of consumer subsidies and the general decline in purchasing power of the population have contributed to the reduction in demand. In addition, Romanian food products have had to cope with competition from imported products (sugar, refined oil, dairy products, and meat), of which imports have increased since the CEFTA agreement was put in practice and import duties were reduced in 1997 (see Part II). In addition, the supply of raw materials for processed food products like sugar, canned vegetables and fruit, processed meat and fish products has declined seriously.

In contrast to the general development of the food industry, oil and wine production is performing relatively well, notwithstanding large fluctuations. The oil industry is profiting from the increase in production of sunflower and the growing international demand for sunflower oil. Wine production has a long tradition in Romania and the volume produced in 1997 was even above the pre-transition level, but in 1998 it fell sharply. The equipment of the industry is generally obsolete, having been installed in the 1960s and 1970s. Lack of appropriate technologies at various stages of the technological process undermines the competitiveness of the industry (MoAF, 1998).

Table I.18. **Food industry output,¹ 1989-1999**

	Units	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999p
Meat and meat products ²	'000 tonnes	1 015	1 360	1 157	832	819	796	803	775	635	n.a.	n.a.
Wheat and rye flour	'000 tonnes	2 642	2 623	3 006	2 784	2 625	2 725	3 030	3 372	3 668	2 052	n.a.
Sugar	'000 tonnes	556	467	379	273	185	231	266	396	204	321	190
Edible oils	'000 tonnes	248	270	236	216	213	194	224	236	246	173	222
Margarine	'000 tonnes	48	29	27	20	21	16	17	22	24	36	36
Butter	'000 tonnes	46	33	23	20	17	14	16	13	9	7	6
Cheese products	'000 tonnes	82	94	71	49	50	47	51	48	30	37	30
Fresh consumption milk (1.8% fat)	Million litres	563	522	408	384	319	386	396	349	151	110	n.a.
Fresh dairy products (3.5% fat)	Million litres	276	426	271	151	144	151	225	205	131	155	n.a.
Wine	Million litres	711	822	694	574	655	843	735	671	731	507	n.a.

p Provisional.

n.a. Not available.

1. In enterprises of more than 50 employees.

2. Meat, meat products and tinned meat.

Sources: National Commission for Statistics; Ministry of Agriculture and Food.

4. Food consumption

Up to the mid-1980s, the overall trend of food consumption in Romania showed an increasing or at least a stable trend, with the exception of meat, meat products and cereals. This trend was reversed in the second half of the eighties when, except for cereals, a serious decline in consumption occurred (Table I.19). During this period, overall consumption levels were lower than in most other central and eastern European countries, including the Soviet Union. This was partly due to trade policies of the Romanian authorities that restricted imports and enforced agro-food exports (see Parts II and IV).

Table I.19. **Food consumption pattern, 1980-1998**
Quantities per person per year

	Units	1980	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p
Meat and meat products	Kg	62	55	50	61	54	46	48	46	48	47	45	39
Milk and dairy products	Litres; equivalent of milk; excluding butter	163	171	136	145	169	164	177	180	189	193	192	158
Sugar and sugar products	Kg; equivalent sugar	28	26	25	27	26	24	24	25	24	25	20	n.a.
Vegetable and vegetable products	Kg; equivalent vegetables	121	170	136	111	88	101	113	110	116	115	112	n.a.
Potatoes	Kg	71	78	72	59	48	60	74	67	71	73	82	n.a.
Fruits and fruit products	Kg; equivalent of fruit	46	71	54	60	46	47	64	48	46	51	45	n.a.
Cereal products	Kg; equivalent of flour	173	143	157	158	145	147	160	159	162	161	170	165

p Preliminary.

n.a. Not available.

Source: National Commission for Statistics; OECD (1999).

In 1990 meat and milk consumption substantially increased, reflecting a reversal in government trade policy in order to increase domestic supplies of food at affordable (controlled) prices. After 1990, the downward trend in meat and meat products consumption returned. On the contrary, milk and milk products consumption continued to increase up to 1996, mostly due to the rise in milk consumption from own production, but also to consumer subsidies. When consumer subsidies were sharply reduced and then discontinued, milk consumption stabilised in 1997 and, according to preliminary data, fell sharply in 1998. Consumption of other food products stabilised or showed a slight increase in the 1990s. The increase in consumption of such products as potatoes and cereals reflects the gradual reduction of purchasing power, leading consumers to seek cheaper, basic food products. Relatively high levels of consumption of cereals and potatoes but also of fats and oils, eggs and alcoholic beverages may lead to a concern that the Romanian diet is moving towards one which could be regarded as "unhealthy" according to modern nutritional standards (Petrovici and Ritson, 2000).

On average, some 59% of total household expenditures in 1997 was spent on food items, demonstrating the relatively low standard of living of the majority of Romanian families. This compares with 14% in the European Union and between 20 and 30% in such countries as the Czech Republic, Hungary, Poland and Slovenia. For low-income earners, in particular among pensioners and unemployed households, the share in Romania exceeded 70%. The share was also very high in peasant households at about 70%, but more than four fifths of it was the value of food coming from own production.

5. Agro-environmental situation

General

Agriculture in Romania is affected by several forms of pollution, partly due to farming itself, but mainly due to other human activities (see also Annex I). An assessment of the environmental situation in the rural areas shows that 4.4% of rural communities are situated in polluted areas (all the analysed

factors, *i.e.* soil, water, air and forest, show high or very high degrees of pollution); 49.6% in less polluted areas (at least one factor shows a high degree of pollution) and the remaining 46.0% in non-polluted areas (all environmental factors show an insignificant degree of pollution). The communities that are situated in polluted areas are affected mainly by industrial pollution factors (petrochemical, chemical and metallurgical factories, power stations, and mines) (Florin *et al.*, 1998).

Although about half of rural counties are exposed to some type of pollution, this does not imply a massive environment degradation. In most cases there is only *local pollution* and not all environmental factors are equally affected. Most of the communities situated in the Carpathian, sub-Carpathian and hill areas are not polluted, while the majority of those located within plains and depressions are polluted to varying degrees. Among the latter, the most polluted are highly populated communities situated in the Baragan and Transylvanian Plains, affected by excess salinity and soil erosion.

Soil

Over half of the Romanian land area is classified as agricultural land and about 67% of it, or 10 million hectares, is cultivated annually. Much of Romania's cultivable land has been developed for large-scale agriculture with large areas under arable cropping and irrigation. Virtually the whole Danube Valley has been reclaimed for agriculture. Out of the total 16 million hectares of agricultural land, 12 million hectares are affected by such factors as erosion, water excess, salt excess, compacting, acidification, and chemical pollution with pesticides, heavy metals, fluoride and oil.

Erosion is regarded as the most important problem, affecting about 6.3 million hectares of agricultural land and showing an increasing trend. Soil compacting has been recorded on 6.5 million hectares. Other aspects relate to the deficient levels of nitrogen (deficient on 4.8 million hectares), phosphorous (deficient on 6.2 million hectares), and microelements (zinc, iron, calcium, magnesium).

Strong and moderate acidification has been recorded on 3.3 million hectares. Highly acidic soils due to acid rain (sulphide oxides and nitrogen oxides) have been found in the neighbourhood of chemical plants producing fertilisers (ammonium nitrate), sulphide acid or non-ferrous metals.

Irrigation is another polluting factor. Although the area currently equipped with irrigation infrastructure covers 3.2 million hectares, less than 2 million hectares are actually irrigated because of system deterioration. It is unlikely that more than 70% of the former area will be restored because of high pumping costs. As a result, the negative impact of irrigation is likely to be reduced. In areas with irrigation systems and no drainage systems, soils get salty as minerals from evaporating water accumulate in the soil (about 1.2 million hectares).

Water

The direct discharge of wastes into natural watercourses is the main cause of their deterioration. The major pollution sources of Romanian rivers are industrial waste, agricultural runoff, animal waste and municipal waste. Of these, industrial waste is the most hazardous to health. Extreme water pollution is generally a local phenomenon concentrated in rivers downstream of industries and larger municipalities.

Pollution from agricultural sources affects both surface water and groundwater. It is mainly due to nitrates, phosphorous, pesticides, and runoff of silage effluent and slurry. The main sources of nitrates and phosphorous are mineral fertilisers and effluent of livestock, in particular animal manure. Animal farms are an important source of water pollution. The removal of residues and cleaning of barns require huge quantities of water that have to be decontaminated. These residues affect mainly the Somes, Mures, Bega-Timis, Vedea, Arges, Ialomita, Siret, and Prut rivers. Pesticide residues are also a potential threat to water quality, which leads to increased costs for drinking water distribution. Agricultural activities also have significant effects on the quantity of water available, especially where irrigation is required. In particular, excessive use can lower the water table and increase desertification and salinisation from an influx of seawater.

Modernisation and intensification of agricultural practices and livestock production are major sources of non-point source pollution of surface and ground water in the Danube River Basin. The non-point

source pollution due to the use of fertilisers, pesticides and herbicides on agricultural land has decreased and the average concentration of these substances in water has been below the maximum allowable limit during the last four years.

Air

As in other central and eastern European countries, air pollution is highly localised and severe. Among economic sectors, agriculture is the most important with regard to the emission of methane (CH₄), nitrogen protoxide (N₂O) and ammonium nitrate (NH₃).

Livestock farming is responsible for emissions of ammonia and – especially in the case of ruminants – methane. About 26% of total methane emissions in Romania come from agricultural activities. Land application and storage of manure are other important sources of ammonia emissions. Methane and ammonia have environmentally negative effects. The former is a potent greenhouse gas. The latter causes acidification of soils and water where it deposits and is harmful to forests. Livestock farming emissions present strong regional variations, which can be explained by differences in feed availability and livestock keeping methods.

Emissions from burning straw and other vegetal residues also pollute the air. One of the worst effects of atmospheric pollution is acid rain. Acid rain can be caused by nitric oxides from both large chemical fertiliser plants and power stations. Romania lacks special installations to convert the sulphur dioxide present in burned gases into sulphur trioxide and subsequently into sulphuric acid. Agriculture can contribute to the protection of the environment against specific forms of pollution or degradation, *e.g.* it contributes to remedying the greenhouse effect as it provides an important CO₂ sink. The emission of pollutants in the atmosphere has decreased in Romania since 1989, not only due to the closure of many animal farms, but also due to the application of pollution abatement technologies.

Landscape

Romanian rural landscape has been shaped and diversified by human activities and especially by agriculture. Intensive agriculture has also had some negative effects on the landscape and has destroyed some features that traditional agriculture contributed in previous centuries. Major examples of its impact are reparcelling with removal of hedgerows and stonewalls and clearing of woods; realignment of water-courses and abandonment of terraces. The Romanian rural landscape has changed during the last five decades mainly in peri-urban areas, due to the “industrialisation” of villages. Still, the process of landscape degradation is not irreversible in Romania as traditional values have started to be given more importance in several rural areas.

Biodiversity

Romania is rich in biodiversity (ecosystems, species and genetic diversity) and has a high percentage of natural ecosystems with 47% of the land area of the country covered with natural and semi-natural ecosystems. Since almost half of all forests in Romania (13% of the country) have been managed for watershed conservation rather than production, Romania has one of the largest areas of undisturbed forest in Europe. The natural integrity of Romanian forest ecosystems is indicated by the presence of the full range of European forest fauna. Europe's largest wetland, the Danube Delta (one of the World Natural Heritages) also lies predominantly in Romania. Major grasslands, caves and an extensive network of rivers add to the ecosystem richness. The high level of geographic diversity in Romania has produced a high diversity of flora and fauna. Although rich in biological resources and important as a corridor for the movement of species (biogenetic material), Romania has suffered the consequences of human activity.

Human activities have reduced the abundance of certain elements of the ecosystem (most notably steppe grasslands) and also added new components. Pollution, the damming of rivers, hydrological works, industrial agriculture, and the overexploitation of natural resources, among other factors, have all taken their toll in decreasing biodiversity.

Following the political changes of 1989 there has been a net rise in agricultural employment. Traditional harvesting and grazing practices present an opportunity to support a sizeable rural population, which lives within the limits of the available biological resources. Agro-tourism could be developed to provide rural communities with additional sources of revenue while offering incentives to retain or revive traditional practices that are sustainable or to develop new means for using sustainable natural resources. There is a great potential to develop ecological tourism activities in many of Romania's natural areas. A newly formed association of ecological tourist homes and farms is currently promoting this idea.

NOTES

1. The purpose of this section is to provide the macroeconomic and structural reform framework that shaped the dramatic changes in the Romanian agricultural sector. The section draws extensively on the OECD economic surveys (OECD, 1993; OECD 1998*a*), and also on the World Bank analyses (WB, 1991; WB, 1994) and, for most recent developments, on the PlanEcon, EIU and Standard & Poor's reports on Romania.
2. The uncertainties concerning official data, in particular problems with the measurement of shadow economy activities, make any clear-cut evaluation of aggregate activity rather difficult. According to a recent survey for the US Treasury, the parallel economy has risen substantially in recent years and in 1998 may have accounted even for a half of GDP registered officially. The survey suggests that if both official and unofficial activities had been taken into account the rate of GDP change would have shown growth of more than 3% rather than the 5.4% fall recorded officially in 1998 (Romanian Economic Daily, 30 September 1999).
3. The share of services in total employment is based on the available data. Taking into account that a large part of services is provided through informal economy, the "real" share could be closer to 40%.
4. This change in monetary policy coincides with the August 1998 crisis in Russia. However, as Russia's share in total Romania's exports was below 3% in 1997, the direct impact of the Russian crisis on Romania's economy was limited.
5. In Bulgaria, agriculture's contribution to GDP in 1997 was slightly higher than in Romania, but its share in total employment was much lower.
6. This assessment is based on the reported price policy change, but cannot be supported by statistics as output/input price indices between 1989 and 1990 are not available.
7. The share of active population in total population. Data based on household labour force survey carried out in the second quarter of 1999 (NCS, 1999*b*).
8. Share of ILO unemployed in total active population (NCS, 1999*b*). The unemployment rates based on the ILO method are lower in Romania than those officially registered.
9. The figures of total agricultural employment in Romania are compiled by adding together farm employment (the labour force working in family farms or household plots) and employees working in registered agricultural business entities such as state or private farms and agricultural companies. Farm employment is estimated by the Ministry of Agriculture, via its territorial administration. The number of employees working in agriculture is estimated using a census method in the case of large farms, and via a survey of the small and medium sized companies. The agricultural employment figures in Romania should be treated with caution as they do not reflect two co-existing phenomena in rural areas: large underemployment and a quite active informal sector providing supplementary income for more active part of rural population.

Part II

AGRO-FOOD FOREIGN TRADE

A. Trade flows

1. Pre-reform trade flows

Romania has long-standing experience in exporting various agricultural and food products. At the outbreak of World War I, Romania exported half of its wheat production and was the world's fourth largest exporter of cereals, mainly wheat. Romania's strong dependence on grain exports exposed it to the severe, unfavourable consequences of the agricultural trade collapse during the Depression of the 1930s. Under the communist regime, Romania maintained its position as a net agro-food exporter, but trade flows were altered by political commitments. In 1980, agro-food exports of US\$1.4 billion were recorded. However, these exports declined to US\$703 million in 1986 and to US\$570 million in 1989. Agro-food imports also fell in this period: from US\$521 million in 1986 to US\$368 million in 1989 (Table II.1). Consequently, the share of agro-food trade in total Romanian trade dropped in 1989 to 5% for agro-food exports and 4.4% for imports.

Table II.1. **Agricultural trade, 1986-1999**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999p
Agro-food exports (US\$ million)	703	713	598	521	84	261	291	330	399	533	707	594	436	484
Agro-food imports (US\$ million)	570	388	346	368	1 210	786	992	966	664	895	870	695	1 013	795
Balance (US\$ million)	133	325	252	153	-1 126	-525	-701	-636	-265	-362	-163	-101	-577	-311
The coverage degree of imports by exports (per cent)	123	184	173	142	7	33	29	34	60	60	81	85	43	61
The share of agro-food trade in total trade:														
Exports (per cent)	7.2	6.8	5.2	5.0	1.5	6.1	6.7	6.7	6.5	6.7	8.7	7.0	5.2	5.7
Imports (per cent)	7.1	4.7	4.5	4.4	13.1	13.6	16.0	14.8	9.3	8.7	7.6	6.2	8.6	17.6

p Preliminary.

Source: Romanian Foreign Trade Yearbook, 1994, 1998, National Commission for Statistics (NCS); Monthly Bulletins of Foreign Trade Statistics, No. 12/1995-1998, NCS; 1997-1998 agro-food foreign trade database, Romanian Foreign Trade Center.

The contraction of Romanian exports between 1986 and 1989 was due to a sharp decline in exports to the CMEA countries, as exports to the convertible area remained rather stable. This change reflected the government decision to shift exports to the convertible currency area to repay external debts. Therefore the share of convertible currency markets in total Romanian agro-food exports rose from 42% in 1986 to 67% in 1989. European countries were the major destination, absorbing almost half of all Romanian agro-food exports.

2. Post-reform trade flows

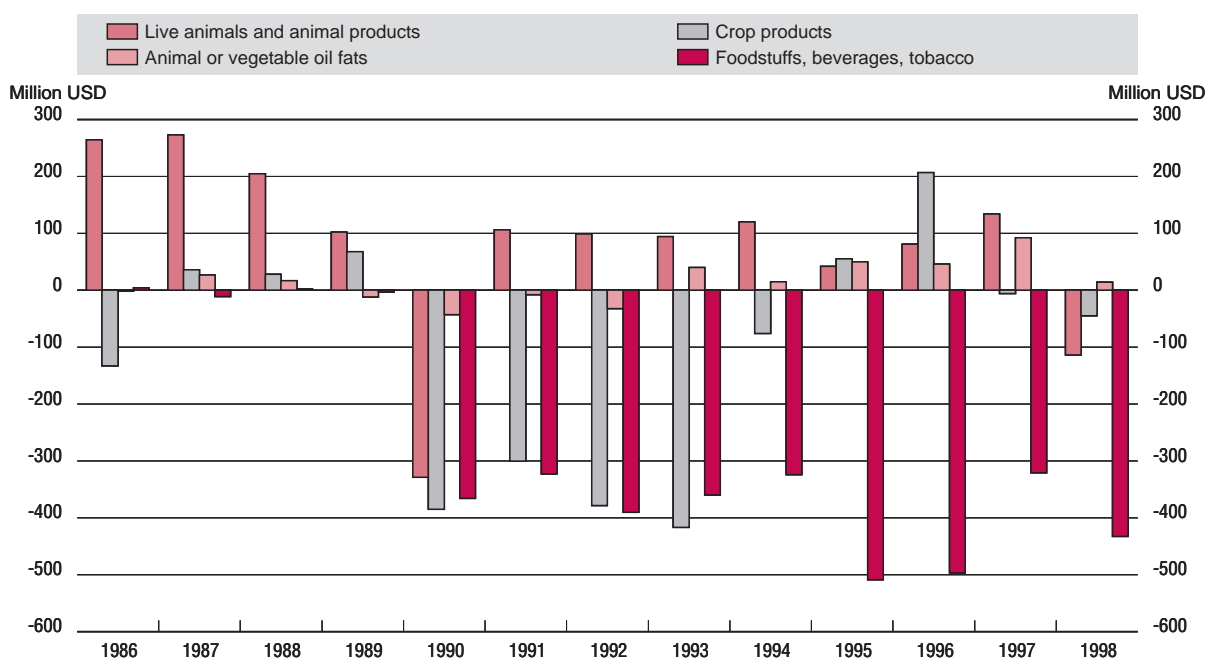
Three phases can be distinguished in Romanian agro-food trade in the 1990s: 1990-1993 with an extremely negative trade balance in 1990, remaining strongly negative until 1993; 1994-1997 characterised by an improvement in the trade balance; and 1998-1999 with strong fluctuations in trade performance

(Table II.1). The main factors contributing to these variations were: changes in trade relations at the beginning of transition; frequent changes in trade policy (switching from supporting imports and hampering exports to protecting domestic producers through very high import barriers and again to liberalising imports; see Part IV); changes in the volumes of agricultural production; and finally, changes in macroeconomic policy, in particular in exchange rate policy (see Part I).

In 1990 Romania became a net importer of agro-food products. Whereas agro-food exports almost disappeared (six times as small as in 1989), agro-food imports rose sharply (three times as large as in 1989) (Table II.1). This shift resulted from an abrupt trade policy change: the policy of compulsory agro-food export policy to repay debts of the 1980s was discontinued and agro-food imports were liberalised. Moreover, to increase domestic food supplies, bans and unilateral quotas on agro-food exports were applied between 1990 and 1996, but in particular in 1990 and 1991 (see Part IV). Another factor contributing to a large trade deficit in agro-food trade in the first years of transition was a fall in agricultural production, partly resulting from disruptions caused by farm restructuring, but also from the 1992 drought.

The trade balance recovered from 1994 to 1997. Until 1996 export bans hindered exports, whereas increased protection limited imports. Romania's import tariffs were increased sharply after the Uruguay Round Agreement in 1995. As a WTO member with a developing country status, Romania was allowed to set high tariff bindings (see Part IV). Simultaneously, the composition of agro-food trade changed in 1995: the negative trade balance in crop products turned positive, as the crop sector recovered (Graph II.1). Due to Romania's reliance on exports of non-processed commodities, the effect of a primary production increase or decrease can be quite strong. The large increase in Romanian cereal production induced a recovery in the trade balance in the mid-1990s, and again in 1997, when the agro-food trade deficit amounted to only US\$101 million and the coverage of imports by exports was 85%, as opposed to 7% in 1990.

Graph II.1. Romania's agro-food trade balance by product group, 1986-1998



During 1997, Romania liberalised its highly restricted agro-food imports. This was a positive policy change which in the longer term will stimulate the competitiveness of the Romanian agro-food industry. However, this decision coincided in 1998 with several negative factors such as: a substantial fall in crop production due to adverse weather conditions (see Part I), a strong decrease in agricultural commodity prices on international markets and a strong real appreciation of the Leu. These factors contributed to a substantial rise in agro-food imports and a fall in agro-food exports in 1998. Agro-food exports were additionally affected by a contraction of several export markets due to the crises in Russia and Asia. As a result, Romania runs trade deficits in all major groups of agro-food products, except for fats and oils (Graph II.1). According to preliminary data, agro-food exports rose and imports fell in 1999, contributing to an improvement in the agro-food trade balance (Table II.1).

As a share of gross agricultural output, net agro-food imports peaked in 1992 at 10.3%, fell to a low of 0.9% in 1997, and rose again to 5.2% in 1998 (Table II.2). Despite the persistent negative balance of trade in agro-food products, Romania has been almost self-sufficient in production of all major agricultural products, with the clear exception of sugar (Table II.3). A striking feature of Romania's agro-food trade is the large net imports of processed food, beverages and tobacco (Graph II.1). Between 1994 and 1998, imports of foodstuffs, beverages and tobacco represented about two-thirds of the total Romanian agro-food imports. Conversely, exports mainly consisted of non-processed agricultural commodities with low value added, such as live animals, oilseeds and grains. The only processed products exported in relatively large quantities are sunflower oil and wine. Such a structure of exports and imports suggests that the food-processing industry in Romania is not competitive and inhibits improvement in Romania's agro-food balance of trade. There are also other institutional and structural factors that undermine the

Table II.2. **The share of net agro-food imports in total value of agricultural production in Romania, 1989-1998**

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Gross Agricultural Output; ¹ current prices; billion Lei	165	266	751	2 104	7 371	16 589	23 571	35 730	78 511	99 167
Net agro-food imports, million US\$	153	-1 126	-525	-701	-636	-265	-362	-163	-101	-577
Exchange rate (annual average) Lei/US\$	14.9	22.4	76.4	308	760	1 655	2 033	3 082	7 168	8 876
Net agro-food imports, billion Lei	2.8	25.2	40.1	216	483	439	736	502	724	5 121
Share of net agro-food imports in GAO, per cent	-1.7 ²	9.5	5.3	10.3	6.6	2.6	3.1	1.4	0.9	5.2

1. Estimation, NCS does not publish aggregated values for GAO.

2. Sign "-" in 1989 indicates net exports.

Source: Calculations based on Romanian National Commission for Statistics data; exchange rate values are provided by The National Bank of Romania.

Table II.3. **The share of net imports of selected agricultural products in total domestic use in Romania,¹ 1989-1998**
Per cent

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Grains ²	-1.4	6.3	8.9	9.0	15.0	2.5	-3.5	-13.0	-7.7	-5.7
Meat and meat products	-1.4	10.0	0.1	-0.7	-3.0	-3.9	1.3	-1.7	-3.0	6.4
Milk ³	-1.6	4.2	1.5	0.9	1.8	0.4	0.5	0.9	-0.0	1.1
Sugar	11.0	49.0	42.0	54.0	44.0	44.0	48.0	66.0	45.0	60.0
Vegetables	n.a.	10.5	1.6	9.0	1.7	-0.8	1.3	1.6	0.7	4.2
Fruit ⁴	-7.7	4.7	5.0	2.4	1.5	11.6	19.0	-0.6	-0.8	7.7

n.a. Not available.

1. Imports minus exports divided by total domestic use (production plus imports minus exports). Stocks are not taken into account; sign "-" indicates net exports, and "+" net imports.

2. Includes wheat, barley, rye, oats and maize.

3. Includes milk and dairy products expressed in milk equivalent.

4. Without grapes.

Source: Estimations based on NCS data.

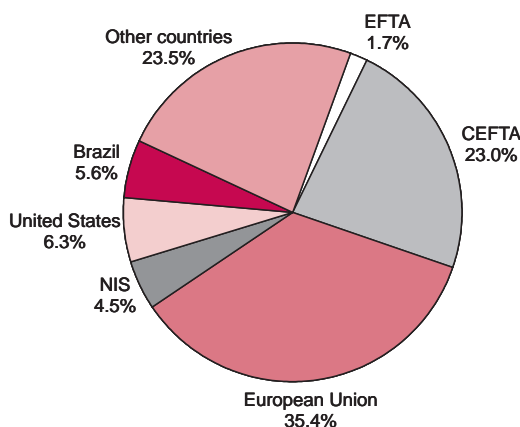
competitiveness of Romanian agriculture on international markets, such as inappropriate infrastructure (*e.g.* storage and transport) to collect and handle agricultural products from the dominant sector of small-scale producers; a lack of quality standards fully harmonised with those internationally recognised; and a lack of information about international markets.

Origin and destination of agro-food trade

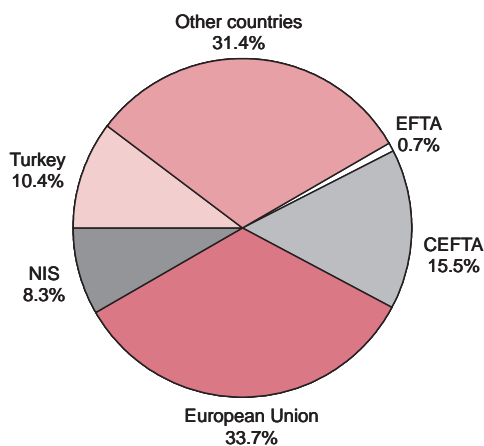
During the reform period Romania has become a net importer of agro-food products *vis-à-vis* most of its trading partners. Trade with OECD countries in total makes up about three-fourths of Romania's agro-food trade deficit.

After 1989, the EU remained Romania's main trading partner. In 1998, the EU absorbed some 34% of Romanian agro-food exports, whereas 35% of Romania's food imports came from the EU countries (Graphs II.2 and II.3). Agro-food trade with the EU accounted for almost 40% of Romania's agro-food trade deficit. This unbalanced trade relationship can be largely explained by the superior quality and price competitiveness of products coming from the EU. The quality factor is particularly important in the case

Graph II.2. Romania's agro-food imports by regions in 1998



Graph II.3. Romania's agro-food exports by regions in 1998



of processed products, with the EU being the major foreign supplier of these products on the Romanian market (Table II.4). Price competitiveness is additionally supported by the EU's export subsidy policy. Major EU suppliers of agro-food products to Romania are Germany and the Netherlands (Graph II.4). In 1998, the main products imported from the EU were dairy products, sugar and processed vegetables. Italy, Germany and Greece are the most important EU markets for Romania's exports (Graph II.5). In 1998, the main products exported to the EU were live animals (primarily to Italy and Greece) and vegetables.

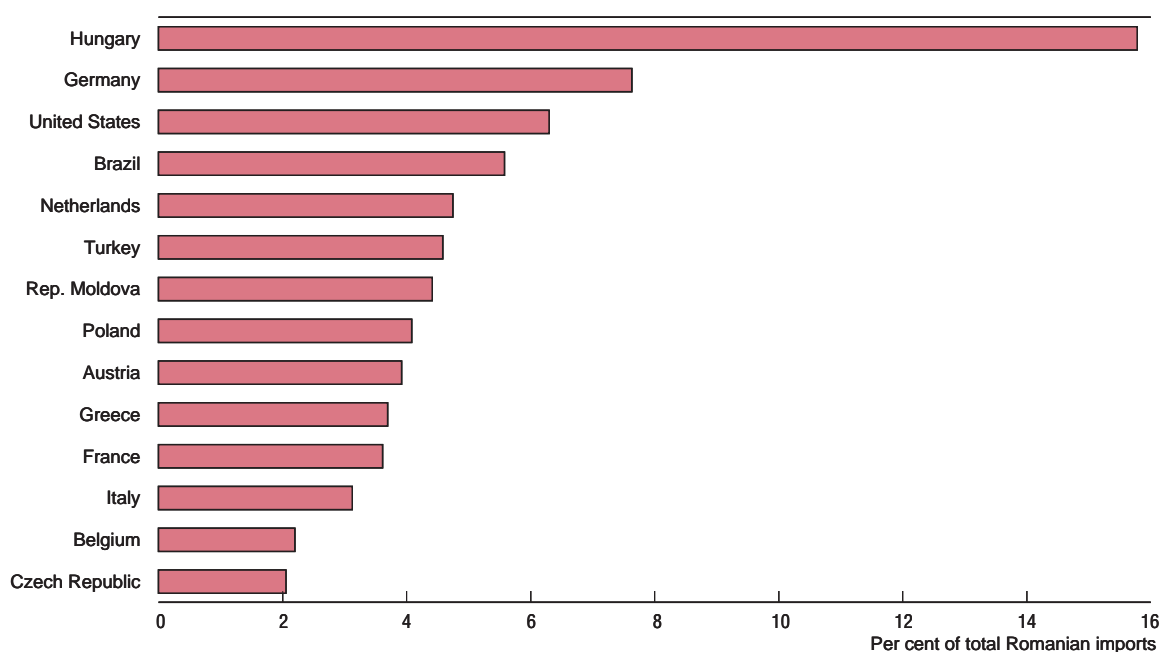
The Central European Free Trade Area (CEFTA) is Romania's second largest trading partner in agro-food products. The CEFTA countries absorbed some 16% of Romania's agro-food exports in 1998 and provided 23% of Romania's agro-food imports. The only CEFTA country with which the Romanian agro-food trade balance is positive is Slovenia. The most important CEFTA trade partner is Hungary, which is also the main trading partner in agro-food products in general (Graph II.4). In 1998, Hungary accounted for 68% of Romania's agro-food imports from the CEFTA countries and for 43% of Romania's exports to these countries. In 1998, imports from the CEFTA countries included mainly poultry meat, pigmeat and wheat flour. Major Romanian agro-food export products to these countries were sunflower oil, oil cakes and soybean oil.

Table II.4. **Agro-food imports by group of products and main suppliers in 1998**
US\$ million

Group of products	Total imports	EU	CEFTA	Rest of the world
Live animals and animal products	208	73	79	56
Crop products	226	56	46	124
Fats and oils	56	31	11	14
Foodstuffs, beverages, tobacco	523	199	98	226

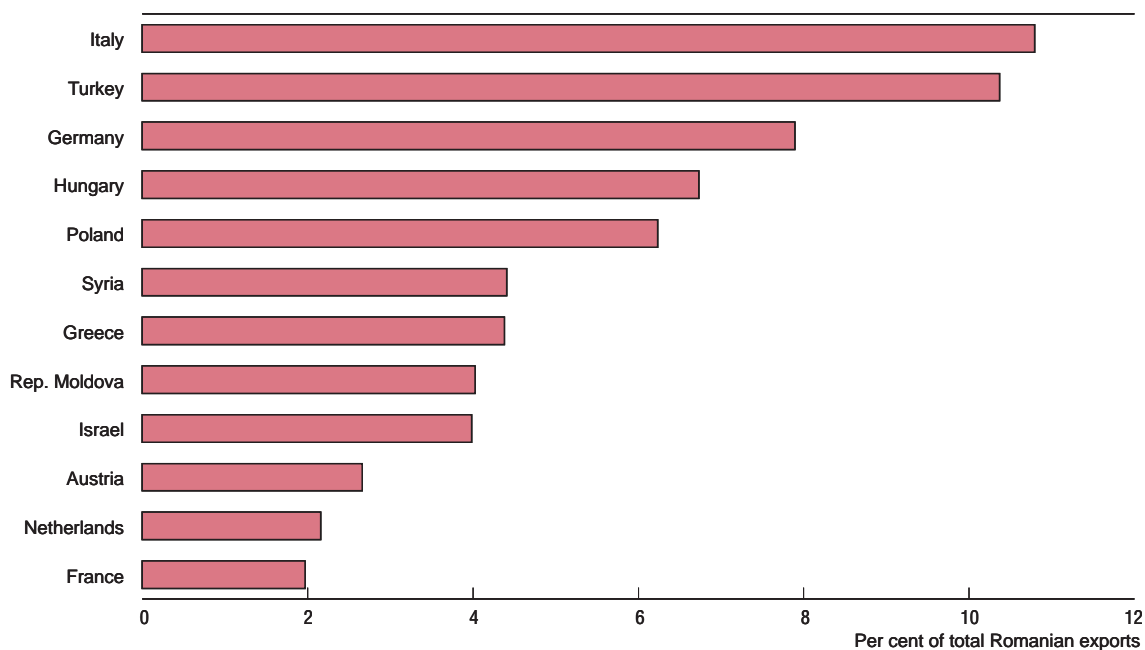
Source: Ministry of Industry and Trade.

Graph II.4. **Main suppliers of agro-food products to Romania, 1998**
Per cent



Source: Ministry of Industry and Trade.

Graph II.5. **Main export markets for Romanian agro-food products, 1998**
Per cent



Source: Ministry of Industry and Trade.

Romania has signed preferential trade agreements with Moldova and Turkey. In 1998, about 5% of Romania's agro-food imports originated from Turkey and 4% from Moldova (Graph II.4). Products imported from Turkey include eggs, vegetables and fruits. From Moldova, Romania imports beef and sugar. Turkey is one of the most important markets for Romanian agro-food exports, accounting in 1998 for about 10% of the total. The share of Moldova amounted to 4% in 1998 and Romania's exports to this country mainly consisted of pigmeat and beverages.

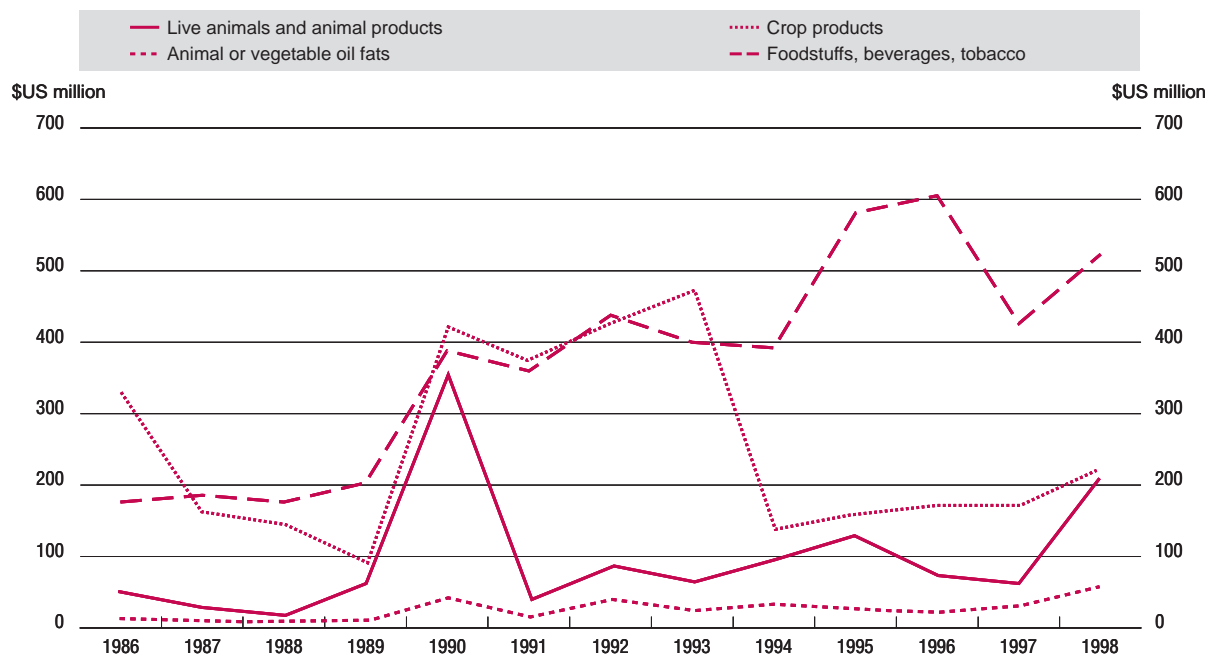
Composition of agro-food trade

- Imports

Romania's main agro-food imports are processed food products (Graphs II.6 and II.7). While Romania's demand for imports of such products as sugar and sugar preparations, tobacco, cocoa and cocoa preparations, miscellaneous edible preparations, oil cake and coffee is constant, imports of meat products vary from one year to another. Some commodities, such as vegetables, oil seeds and cereal preparations are important in both exports and imports.

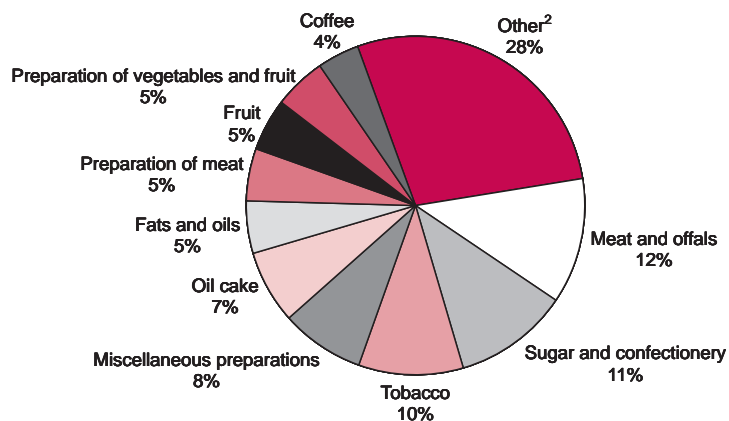
The most sensitive products among Romanian imports are poultry meat and pork. Both products are important for domestic meat consumption and their marketable output to a large extent comes from domestic agricultural commercial companies (state farms renamed) undergoing an overdue privatisation and restructuring process. Poultry meat and pork were covered by very high border tariffs following the Uruguay Round Agreement on Agriculture (see below). The application of these tariffs (140.8% for poultry meat and 236% for pork) led to a substantial fall in imports. Imports of poultry meat went down from 39 000 tonnes in 1994 to 3 400 tonnes in 1996. Pork, dairy and sugar imports also sharply decreased in 1995 and 1996. In 1997 and 1998 import tariffs were substantially reduced due to the implementation of a comprehensive agricultural policy reform, supported by the World Bank (see Part IV). Tariffs on poultry

Graph II.6. Romania's agro-food imports by product group, 1986-1998



Source: National Commission for Statistics.

Graph II.7. Romania's main agro-food imports¹ in 1998



1. According to the 2-digit level of the Harmonized System classification.

2. The group "other" includes groups of products with a share below 4 per cent of the total.

Source: National Commission for Statistics.

meat and pork were fixed at 60%, the highest level (except for wine) negotiated with the World Bank. Moreover, in 1997 Romania joined CEFTA resulting in further liberalisation of agricultural trade, most often within fixed quotas (see below). For poultry meat imports from CEFTA countries, tariffs were reduced to 28%, as opposed to 60% for the other trading partners. Consequently, poultry meat imports recovered from the lows of 1995-1996. In 1998, poultry meat imports grew to 49 000 tonnes, of which 75% from CEFTA. Imports of pigmeat have increased as well since the 1997 tariff reduction. Imports of carcasses and half carcasses of pigs, for example, grew from 500 tonnes in 1997 to 29 000 tonnes in 1998.

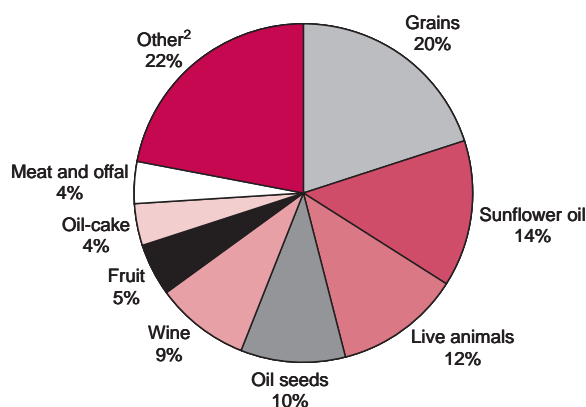
Reduced tariffs also contributed to a rise in imports of other products, *e.g.* milk and dairy product imports grew by 144% in 1998, the EU being the main supplier. Wheat imports grew even faster, by above 200% in 1998, and the CEFTA countries supplied nearly all of Romania's wheat and flour imports, profiting from preferential tariffs. Sugar imports, which had been decreasing during 1995-1997, increased by 68% in 1998 and originated mainly from the EU countries. Moldova became the second supplier of sugar to the Romanian market, encouraged by the preferential agreement between the two countries.

- Exports

After collapsing to US\$84 million in 1990, the value of Romanian agro-food exports recovered steadily, reaching US\$707 million in 1996, although the value of agro-food exports remained significantly below the value of imports. In 1998, agro-food exports fell to US\$436 million, which contributed to the increase in the negative trade balance in this category. In 1998, about two-thirds of the Romanian agro-food exports consisted of grains, sunflower oil, live animals, oilseeds and wines (Graph II.8). According to preliminary data agro-food exports rose to US\$484 million in 1999.

Each year from 1986 to 1998 Romania had surpluses in exports of live animals and animal products, with the exception of 1990 and 1998. The low level of animal exports in 1990 was mainly due to the overall export ban on agro-food products. The negative trade balance in animal products in 1998 was partly due to a fall in meat production and animal numbers, but also to the increased competitiveness of imported meat products due to a fall of prices on international markets, the real appreciation of the Leu and an easier access to the Romanian market following the 1997 trade liberalisation. Crop exports varied widely,

Graph II.8. Romania's main agro-food exports¹ in 1998



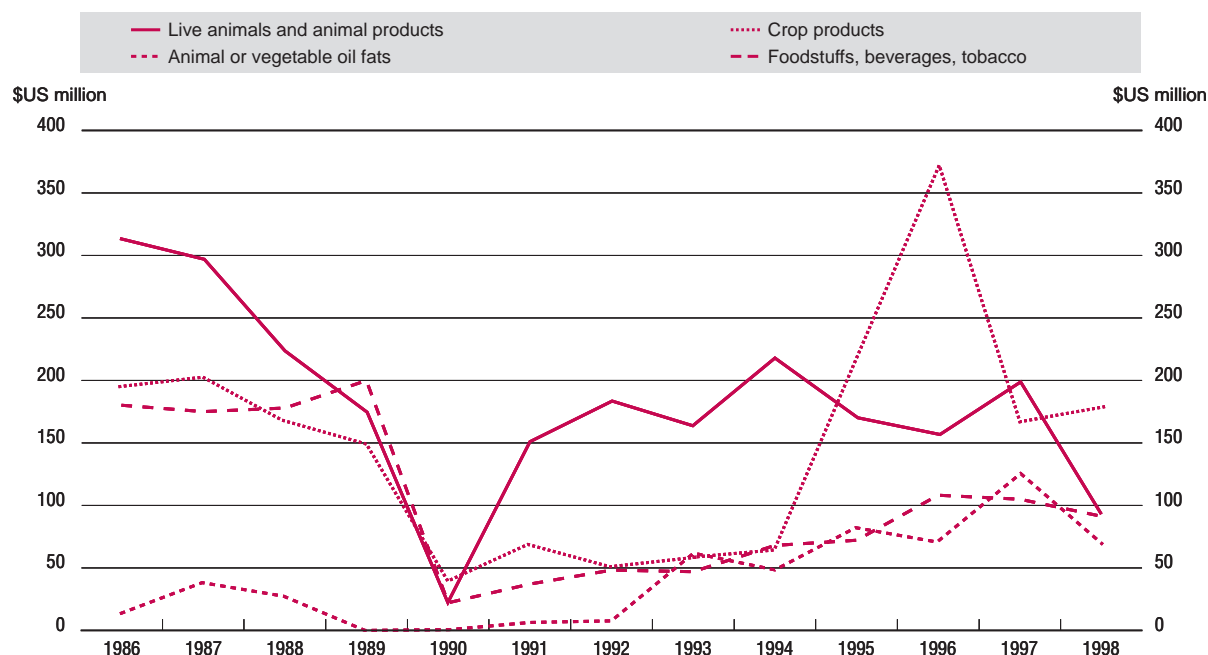
1. According to the 2-digit level of the Harmonized System classification.

2. The group "other" includes groups of products with a share below 4 per cent of the total.

Source: National Commission for Statistics.

reflecting changes in crop production (Graph II.9). The large domestic grain production in 1996 resulted in the highest level of grain exports in the reform period: cereal exports amounted to 1.3 million tonnes, representing 44% of Romania's total agro-food exports.

Graph II.9. Romania's agro-food exports by product group, 1986-1998



Source: National Commission for Statistics.

B. Trade relations

1. Former trading arrangements

In the communist period trade flows were determined by the state and all trade was conducted through centralised, state-owned foreign trade companies (FTCs). Although trade plans were defined nationally, trade flows were co-ordinated within the Council for Mutual Economic Assistance (CMEA). Much of Romania's trade consisted of barter arrangements that were politically determined. The FTCs operated within a framework of centralised permits to import or export and administrative orders governing the distribution of foreign currency. The exchange rate was fixed centrally. Profits from foreign trade were collected into a Price Equalisation Fund, while losses were subsidised out of the same fund.

Compared to other former communist countries, Romania's trade relations with developing countries were quite advanced. That was reflected in the signing of the Protocol of trade negotiations among developing countries in 1978 within the Generalised System of Trade Preferences (GSP). Regarding its agricultural trade relations with countries of the European Community, Romania benefited from 1974 on from trade concessions as a GATT partner. From 1975 Romania also benefited from the facilities granted by the GSP agreement with the EU (see below).

2. *New trading arrangements*

The abolition of the foreign trade monopoly, the collapse of the CMEA and the new post-communist political environment facilitated openness towards new trading partners and required new trading arrangements. Romania signed the Uruguay Round Agreement in 1995 and its trade takes place according to the principles and rules of the WTO. In December 1992 Romania signed the European Free Trade Agreement and in February 1993, the EU Association Agreement. In October 1993, Romania received Most Favoured Nation (MFN) Status from the US. In December 1994, Romania signed a Free Trade Agreement with Moldova followed by a similar agreement with Turkey, signed in April 1997. In July 1997 Romania became a member of CEFTA.

Relations with the European Union

As of 1975 Romania's trade relations with the EU were based on the Generalised System of Preferences (GSP).¹ In 1990, an Agreement on trade and economic co-operation was signed between these two parties. Provisions concerning trade were included in the so-called Interim Agreement. Its implementation in 1993 anticipated the ratification and enforcement of the Europe Agreement.

The Europe Agreement, or Association Agreement, is a wide-ranging political document, that covers trade relations but also economic, financial, cultural and political matters. Romania and the EU ratified this Agreement in 1995. Romania's strategic goal is to join the EU and it has been developing the institutional framework to support this goal since 1995 (Box II.1).

Box II.1. Institutional Framework for European Integration

Decisions regarding the strategy, programmes, assistance agreements and the institutional organisation for European integration are taken during governmental meetings chaired by the Prime Minister. In 1995, the Inter-ministerial Committee for European Integration, chaired by the Prime Minister, was established; the Committee elaborates, analyses, advises upon and proposes for Government approval the basic orientations regarding European integration. The Department for European Affairs provides the interface between European institutions and Romanian administrative structures. This Department is subordinated to the Minister of Foreign Affairs. The Parliamentary Commission for European Integration covers this policy area at the legislative level. The European Institute in Romania started its activity in 1999. It supports public institutions in their accession preparations. The Institute is responsible for writing impact studies and ensuring the training of personnel in European matters. The Legislative Council verifies legislative proposals and checks their compatibility with EU regulations. The drafting of legislation is the responsibility of ministries, advisory opinions being provided by the Council.

Since the implementation of the Interim Agreement in May 1993, trade between Romania and the EU has been liberalised, agricultural products and steel representing a special case. The agreement was supposed to increase mutual trade by phasing out trade barriers. Preferences granted to Romania previously within the GSP were consolidated in the Europe Agreement. For agriculture the most important provisions concern import quotas with reduced levies and preferential tariff rates.

In general, EU concessions provided to the associated countries were based on trade relations in the three years preceding the agreement. In the case of Romania, the two parties agreed that 1990 and 1991 were not representative, in view of the embargo on food exports during those years. Instead, the years 1987-1989 were taken as the base period. The main features of the Europe Agreement for agro-food trade can be summarised as follows:

- both parties benefit from similar rights and obligations;
- there is an obligation to inform each other in case of enforcement of new measures that constitute exemptions from the initial obligation assumed;

- reciprocal concessions will be granted gradually during the transitional period of ten years;
- the EU opens up its market faster and to a larger extent than Romania (six years as opposed to ten years respectively).

Initially, the EU granted three types of concessions to agricultural imports from Romania:

- Quantitatively unlimited preferences for some products, including live horses, goose livers, some vegetables, honey, melons and red fruit. The tariffs that were granted previously in the framework of GSP were consolidated for these products. This meant bindings of tariffs at zero or at a low rate.
- Quantitatively limited preferences for other products (goose and goose meat, sausages, and canned pork) with a 50% reduction in variable levies and with quotas increasing by 10% annually.
- Quantitatively limited preferences for most livestock products, soft wheat, fruit and vegetables. Tariffs were to be reduced by 20% annually, applied uniformly and progressively, over three years, up to 40% of the base tariff. Quotas were to be increased by 10% annually.

In return Romania granted two types of preferences to the EU:

- for some products tariffs were reduced, either for unlimited quantities (animals for breeding, whey, flower bulbs, Mediterranean fruits, grapes, seeds, olive oil, fruit juice, cider) or as tariff-quotas;
- for processed agricultural commodities such as yoghurt, chocolate, pasta and biscuits tariff bindings were applied.

For wine, a special agreement between Romania and the EU was adopted. This agreement entered into force in January 1994 and featured two main aspects:

- reciprocal protection for geographic indications and traditional names used to designate and present wines;
- mutually granted tariff quotas for wine products.

In 1994, to counteract the worsening of the agro-food trade balances of the associated countries, the EU unilaterally provided an extension of the initial concessions. The implementation of the Uruguay Round Agreement and the enlargement of the EU required the enforcement of additional measures in 1995. Furthermore, in 1997 Romania and the EU agreed to improve the conditions for access to agricultural markets to take into account the EU enlargement by three new states and the implementation of the Uruguay Round agreements.

In practice the liberalisation of agricultural trade provided in the framework of the Agreement has not been substantial and its impact on Romania's agro-food exports has been minor. Tariff-quotas have been poorly utilised by Romanian exporters, partly due to the specificity of the reference period selected. The selection of the 1987-1989 period disregarded distortions created by central planning and the debt repayment policy dominating in the 1980s. Therefore, the quotas do not reflect the current export potential of Romanian agriculture, to a large extent reshaped by the land privatisation and farm restructuring policies of the 1990s. Another factor is the lack of interest from EU importers in the small quantities provided in quotas. Other explanations fall within the framework of more general impediments to Romanian export growth such as: the fall in production; poorly developed processing industry; underdeveloped market infrastructure; and poor quality of meat and dairy products not meeting EU standards. Regarding imports from the EU, the Agreement's impact has also been rather limited (see Duponcel, 1998 and Tesliuc, 1996b). Agro-food imports from the EU increased significantly in the period of the Agreement's implementation, but this was due to the low competitiveness of the Romanian agro-food industry and general liberalisation of Romanian agro-food imports rather than to the Agreement as such.

The Europe Agreement is seen as a major step towards membership of the enlarged EU, as accession to the EU is a major political and economic goal of Romania. This goal had a major influence on recent foreign trade reforms. In 1997, for example, Romania introduced a new Customs Code, based on the EU Code. In 1998, the government began a major reform of its regime for setting standards and technical regulations to facilitate accession to the EU.

At the European Council meeting in Helsinki on 10 and 11 December 1999, the Council decided to convene bilateral intergovernmental conferences in February 2000 to begin negotiations with Romania, Slovakia, Latvia, Lithuania, Bulgaria and Malta on the conditions for their entry to the EU. It was decided that in the negotiations, “each candidate State will be judged on its own merits” and that the candidate countries starting the negotiating process “will have the possibility to catch up within a reasonable period of time with those already in negotiations if they have made sufficient progress in their preparations. Progress in negotiations must go hand in hand with progress in incorporating the *acquis* into legislation and actually implementing and enforcing it” (European Council, 2000). While the European Commission in its last regular report on Romania (EC, 1999) highlights a number of critical weaknesses that are likely to prevent Romania’s early EU membership, the Helsinki decision formally puts Romania on equal footing with other acceding countries and the speed of the access process will depend on Romania. In the case of agriculture and agricultural policy, the Commission notes progress being made, but also several institutional and infrastructural weaknesses that need to be addressed (Box II.2).

Box II.2. The European Commission’s conclusions on Romanian agriculture and agricultural policy

In its 1999 report on Romania’s progress towards accession, the Commission concludes: “Romania cannot be considered to be a functioning market economy” and “the lack of a stable macroeconomic, legal and institutional framework hinders the development of economic activity and encourages the grey economy”.

In this general framework, the Commission notices some progress in different sectors of the economy, which should be sustained. In particular “agricultural prices have been liberalised and no trade or price controls have been applied”. Moreover, some progress has been achieved in the phytosanitary and veterinary field, but further efforts in the application of *acquis communautaire* (body of EU law) are required. The Commission notices some positive developments with the respect to the land market, but “an agricultural cadaster and a fully operational land market are not yet established”. Privatisation and restructuring of agro-business is slow and should be given higher priority in government policy.

To meet the short-term priority of the Accession Partnership more efforts and resources should be allocated to strengthen the institutional framework in such areas as: “upgrading of laboratories, border inspection posts, improvement of the veterinary and phytosanitary informatic systems and control facilities including training.” Of urgent importance are also preparations for the utilisation of the pre-accession funding “to assure adequate planning, implementation and co-financing capacity”.

One of the areas that the Commission considers of particular concern is agricultural statistics. The Commission highlights that “agriculture is the area with the lowest level of compliance with the EU requirements. A Government decision to carry out a general agricultural census in 2002 has been taken. Given the high number of agricultural holdings and the general situation in agriculture, a general census is indispensable”.

Source: (EC, 1999), 1999 Regular Report from the Commission on Romania’s Progress Towards Accession, Brussels, October.

Romania and the CEFTA

The Central European Free Trade Agreement (CEFTA) was founded in 1992 by the Czech Republic, Hungary, Poland and the Slovak Republic. Under CEFTA rules, only those countries that have an Association Agreement with the EU, are members of the WTO, and have signed bilateral free trade agreements with all CEFTA members are eligible for membership. Slovenia joined CEFTA in 1996 and Bulgaria in 1999. The agreement on Romania’s admission was signed on 12 April 1997 and came into force on 1 July 1997. Romania considers accession to CEFTA as an important element of its strategy towards full integration into the EU. Stronger political commitment towards market reforms, partly linked with pressure from the international financial institutions, resulted in substantial changes in Romanian trade policies in 1997 which facilitated Romania’s accession to CEFTA.

The original objective to introduce free trade for all agricultural products as early as 1998 was abandoned by CEFTA countries. At the CEFTA summit in Warsaw in 1997, the members came to an agreement on gradual reduction in impediments to trade and on the regrouping of products into different categories with different degrees of liberalisation:

- A listing: duty free and quota free commodities as from 1 April 1998 (breeding animals, horses, rabbits, durum wheat and oilseeds);
- A1 listing: duty free and quota free commodities as from 1 January 2000 (from 1 April 1998 until 1 January 2000 still within quotas: sheep and goats, both meat and live animals);
- B listing: common preferential tariffs (*e.g.* poultry meat 28%, wheat 15%, barley 18%, flour 15%, pastry 20%, some fruit and vegetables 5 to 10%);
- B1 listing: common preferential tariffs within quotas until 1 January 2000 (*e.g.* carcass beef and pig meat 25%, beef and pork meat cuts 20%, milk powder 37%, all canned meat 15-18%, hops 5%);
- C and D listings with bilateral preferences between CEFTA members.

Sugar and certain dairy products remained outside the listings. The agreement boils down to maintaining the protected status of some sensitive products (meat products, some dairy products) and gradually decreasing protection of other products (live animals, cereals and certain vegetables and fruit). As a new member, Romania had to accept the existing liberalisation schemes. While products on lists A and B are covered by multilateral concessions, for products on lists C and D Romania negotiated different bilateral concessions with each country.

CEFTA membership has significantly influenced Romania's trade flows. The share of CEFTA countries in total Romanian agro-food imports rose from 4% on average in 1995 and 1996 to 23% in 1998 and in exports from 3% to 16%, respectively. Such a rise in Romanian imports was partly influenced by the 1998 crisis in Russia, which made traditional exporters to Russia (in particular Hungary and Poland) look for new markets, including within the CEFTA area. These additional exports, often supported by subsidies (in particular in the case of Hungary), created new imbalances on domestic markets and led to sometimes tense relations between CEFTA members. In summer 1998, claiming that wheat imports from Hungary were disruptive for its domestic market, Romania temporarily suspended tariff concessions on imports of Hungarian wheat and wheat flour.² As an emergency measure to alleviate oversupply on the domestic market caused by, among other factors, cheap imports from Hungary, the government announced in March 1999 that it would subsidise pork and poultry exports. Moreover, in mid-1999 the government decided to suspend for one year the tariff reductions on imports of meat, meat products and canned meat from Hungary.

While all CEFTA members, including Romania, consider the Agreement a positive step in their regional co-operation and a useful exercise in their preparations to face competition within the European single market, trade liberalisation in agro-food products faces important obstacles. One of them is a lack of policy harmonisation between CEFTA countries. All CEFTA members have various MFN tariffs; various WTO commitments; various free trade arrangements with third countries and even various import liberalisation schedules with the EU. Moreover, the level of support as well as support mechanisms differ across commodities and countries. On top of this, CEFTA does not have a ban on internal export subsidies and this measure is frequently used, in particular by Hungary. As a result, members are rather reluctant to advance the liberalisation process, pressures occasionally build up as between Romania and Hungary, and import countries frequently apply countervailing measures, allowed within CEFTA as a temporary measure against import surge.

Romania and the WTO

Romania became a GATT contracting party in 1974. Within the GATT, and since 1995 within the WTO, Romania has maintained developing country status, a unique case among central and eastern European countries. As the Uruguay Round Agreement on Agriculture (URAA) maintained principles from earlier negotiating rounds of "Special and Differential Treatment" for developing countries, Romania could benefit from lower reduction commitments (generally two-thirds those for developed countries) and longer

implementation periods (10 versus 6 years). After the expiry of its commitments in 2004, Romania is expected to change its current WTO status to a developed country status, in preparation for EU accession. The URAA includes disciplines in three main areas: market access, domestic support and export subsidies.

- Market access

Its developing country status enabled Romania to bind its tariffs for agricultural products at high levels. Moreover, as a developing country, Romania is committed to reduce its simple average tariff of all agricultural tariff lines bound in URAA by 24% over a period of 10 years compared to 36% over 6 years for developed countries. As part of its commitments, Romania has also put in place a tariff rate quota (TRQ) system for 12 products, in most cases for processed products. The in-quota tariffs are generally high and the in-quota quantities are small (Table II.5). In fact, a comparison of Romania's market access commitments to WTO with the commitments made by 29 OECD countries and 13 non-member countries indicate that Romania's mean over-quota rate (OQTR) of 270% is the third highest, next only to Korea and Japan. Romania's average in-quota tariff rate (IQTR) is also very high at 105%, next only to Colombia's average at 120% (OECD, 1999e).

Table II.5. **Tariff rate quotas within Romanian UR commitments**

H.S. Code	Product	Initial quota, year 1995		Final quota, year 2004	
		Quantity ¹ 000 tonnes	In-quota tariff rate %	Quantity 000 tonnes	In-quota tariff rate %
0201; 0202; 0203;0206	Meat and edible offals of bovine and pork, fresh, chilled or refrigerated	19	115	19	115
040210	Powder milk	0.5	100	0.9	100
0406	Cheese	1.6	110	2.6	110
070110	Potatoes for seeding	0.0	60	3.3	60
1806	Chocolate	0.2	100	0.7	100
1902	Other pasta	2.4	100	3.9	100
2105	Ice cream	0.4	90	0.7	90
2203	Beer ('000 hl)	400.0	110	680.0	110
2205	Vermouth ('000 hl)	0.0	100	0.5	100
2207	Undenaturated ethyl alcohol of 80% vol or higher ('000 hl)	0.0	95	0.5	95
2208	Undenaturated ethyl alcohol of less than 80% vol ('000 hl)	4.3	90	9.6	90
24022	Cigarettes	0.8	100	1.5	100

1. As the implementation of the UR commitments started in mid-1995, the actual quotas applied for 1995 were one-half of the committed ones.
Source: UR-GATT, Romanian Schedule LXIX.

While actually applied tariffs were in many cases lower than the bound rates, the implementation of new tariff bindings in mid-1995 contributed to a substantial rise in applied tariffs in Romania. The trade weighted average of applied tariffs on agro-food products rose from 25% in the first half of 1995 to 75% in the second half (Tesliuc, 1996b; see also Part IV). The increase in tariffs following the implementation of high tariffs committed within the WTO reduced Romania's agro-food imports. The effects of the opening of tariff quotas were minor, as the in-quota tariffs were high as well. However, as of 1997, the Romanian market has been increasingly open to preferential imports, in particular from EU and CEFTA countries, thus limiting the importance of the tariff quotas committed to the WTO. Moreover, following general trade liberalisation in 1997 and 1998, tariffs actually applied in Romania have been much lower than the tariffs committed within the WTO, even lower than the in-quota tariffs. As from May 1999, the highest import tariff applied on agro-food products amounts to 45% and the weighted average tariff on agro-food imports has been reduced to 22% (see Part IV).

- Domestic support

During the base period (1986-1998), Romania provided support mainly of the green box category, defined as non- or minimally trade distorting measures. As a developing country, Romania also excluded certain domestic support from the WTO reduction commitment and, consequently, has no commitment to reduce total Aggregate Measurement of Support (AMS). The *de minimis* provisions on developing country domestic support nevertheless permit Romania to provide trade distorting (AMS-type) product-specific support of up to 10% of the value of production of each product as well as non-product-specific support of up to 10% of the value of total agricultural production (compared to 5% in each case for developed countries). Up to now, the domestic support commitments have not been constraining Romania's agricultural policy. However, future WTO commitments could be a problem if Romania's status is changed to that of a developed country (Giurca and Rusali, 1998).

- Export regime

The value of Romanian export subsidies is to be reduced by 24% and the quantity of subsidised exports by 14% during the ten-year implementation period. Export subsidies are expressed in constant 1986-1989 prices, in order to correct for inflation. The list of subsidised exports incorporates the most important agricultural products, including cereals, oilseeds, sugar, cheese, butter, live animals and meat (Table II.6).

Table II.6. Romanian export UR commitments

Commodity ¹	Budgetary Outlay Commitments ² (million ECU)		Quantity Commitments (thousand tonnes)	
	Base level	Final level year 2004	Base level	Final level year 2004
Cereals ¹	28.4	22.9	337.5	290.3
Wheat and wheat flour	20.6	16.6	238.3	209.0
Maize ³	4.2	3.4	49.6	43.5
Oil seeds	0.06	0.05	3.3	2.8
Vegetable oil	11.1	9.0	99.5	85.6
Sugar	24.3	19.6	175.7	151.1
Butter	7.6	6.1	17.2	14.8
Cheese	1.3	1.0	13.2	11.4
Meat and preparations of meat ¹	22.7	18.3	163.8	140.9
Pigmeat	19.1	15.4	137.3	119.7
Bovine meat	1.1	0.9	8.1	7.0
Poultry meat	9.5	7.7	33.1	28.5
Live animals	5.2	4.2	19.2	17.1
Eggs	0.012	0.010	1.4	1.2
Wine	2.9	2.3	9.4	8.1
Fruits	6.3	5.1	158.1	136.0
Vegetables	7.7	6.2	132.5	114.0

1. Disaggregations for the products were computed using their shares in exports of the group to which they belong.

2. In 1997 values; a fixed exchange rate of 7885 Lei/ECU was used for the budgetary outlay estimations.

Source: UR-GATT, Romanian Schedule LXIX.

So far, export subsidy commitments have not caused problems for Romania. However, studies on the effects of WTO commitments to Romania show that there is little room for Romania to subsidise exports either within existing commitments or within future ones, if they are based on developed-country status (see Giurca and Rusali, 1998 and Davidova *et al.*, 1998).

In its submissions to the WTO, Romania has expressed its support for continuing the process of multilateral trade liberalisation, including further liberalisation of agricultural trade. During the 1999 Trade Review of Romania in the WTO, Members complimented Romania on its strong commitment to the WTO, as reflected in the conduct of its trade policy and in its active participation in the preparations for the Seattle Ministerial. They urged Romania to continue with structural reforms, in particular privatisation (WTO, 1999).

NOTES

1. The EU's GSP was set up on 1 July 1971 in line with the basic principles contained in the generalised system of preferences drawn up in UNCTAD. The concept of generalised tariff preferences is based on the principles of general application of preferences, non-reciprocity of concessions and internal non-discrimination. The aim of the GSP is to grant developing countries tariff preferences over developed countries, thus allowing their exports easier access to the EU market. The GSP grants exemption from custom duties, with the exception of agricultural products. The agricultural preference system incorporates a safeguard clause of a general nature that, without specifying particular quantities, permits the reestablishment of the normal customs duty in cases where EU producers are held to be under serious threat. In order to harmonise preferential rules of origin they were amended to be brought into line with the rules applying under the Europe Agreements with countries of central and eastern Europe and under certain Mediterranean agreements.
2. This measure was discontinued on 1 January 1999.

PRIVATISATION AND STRUCTURAL CHANGE IN THE AGRO-FOOD SECTOR

A. Land ownership in Romania – historical overview

Over the last century the land ownership pattern in Romania has moved between striking extremes: from the domination of large-scale land ownership until the end of World War I towards small-scale farming by the beginning of World War II; again towards large-scale farming through the enforced collectivisation of the 1950s and 1960s; and back to the domination of tiny plots through the reforms of the 1990s.

1. Developments until 1945

Up to the mid-19th century, a feudal system was dominant in the regions where later the modern state of Romania was created. Peasants provided labour and/or rents in produce or money in exchange for the use of a piece of land from the local landlord. Although in Wallachia and Moldavia serfdom was officially abandoned around 1750, peasants were *de facto* serfs due to their obligations and limited rights to leave the estate of the landlord. The 1864 Rural Law gave the peasant real ownership of his entire parcel and ended formally the feudal relation between owners and peasant workers. Feudal obligations were ended and the landlord's monopolies on production and marketing of agricultural products were dismantled. However, the law also prescribed plot limitations and led to a division of communal pastures (Puia and Tambozi, 1993). A gradual process of land fragmentation and the worsening of economic conditions in the last decades of the 19th century fuelled the peasants' dissatisfaction about the land ownership distribution. Unrest and dissatisfaction culminated in the peasant revolt of 1907, which made it clear that further land reforms in Romania were inevitable.

In 1921, an agrarian reform took place, which diminished large land ownership and distributed the land among peasants with compensation paid to the landowners. The 1921 reform was a culmination of the sequence of laws, starting from the Law on "moartmain" (*Lege asupra proprietatii de mana moarta*) of March 1912, amended in 1917. The law on agricultural reform passed on 21 July 1921 specified that holdings of more than 100 hectares would be subject to expropriation, but that agricultural land should not be divided into plots of less than 2 hectares (1 hectare in the mountain regions). The law extended reforms to the whole territory of Romania, including regions incorporated into Romania after World War I.

Due to the expropriation process that followed, agricultural land held by large farms of more than 100 hectares declined from 8.1 million to 1.9 million hectares in 1930. Land fragmentation became a persistent problem. In 1930, the average farm size was just 3.9 hectares. Farms of less than 10 hectares represented more than 90% of the total number of farms. Both demographic and economic conditions contributed to the fragmentation process. The rural population rose due to a high natural increase, and a lack of other employment options forced smallholders to continue farming. As a result small plots of land were further divided between family members. In order to counteract land fragmentation, the March 1937 law stipulated that rural property should not be divided through selling or inheritance into plots of less than 2 hectares, which was considered a minimum. However, effects of this law were negligible.

2. *Agricultural reforms from 1945*

In August 1944 the Soviet Union army came to Bucharest and dislodged the German occupier. In March 1945 the new coalition government led by Petru Groza was formed, dominated by the communists. The government's declared aim was to dismantle large land ownership and to strengthen small landowners. Law 22/1945 (March 1945) expropriated from large landowners an area of 1.46 million hectares, of which 75% was given to the peasants. The rest was held in reserve by the state.

As a result of the 1945 agrarian reform, 918 000 peasants were entitled to receive land titles. However, due to severe droughts in 1945 and 1946, peasants started to sell their land at very low prices. A special law cancelled all the land selling contracts, and property titles were returned to the peasantry. The agricultural reform of 1945 accelerated the land fragmentation process. In 1948, around 5 million family households cultivating less than 5 hectares represented 91% of the total number of farms.

In 1948, the government expropriated land belonging to the royal family (Crown Estate) and, soon after, the land owned by German citizens and collaborators. The means of production were nationalised and a planned economy was officially instituted. In 1949 properties of more than 50 hectares were dismantled. The confiscated land was given to the state or to the emerging collective sector. Collectivisation was launched in 1948, but initially it progressed slowly with only 10% of land collectivised by 1956. The process was accelerated in the second half of the 1950s by forcing individual farmers to join collectives. In 1962, the collectivisation process was completed with 77% of agricultural land transferred to collective and state farms. The remaining land, mostly in remote and mountain areas, was left in private hands.

3. *Farm structures before transition*

Three types of farm structures evolved in Romania during the communist era: production co-operatives, state farms, and private farms. In 1989, there were 3 776 Agricultural Production Co-operatives (CAPs, collective farms) cultivating 58% of agricultural land. This percentage included small plots, which CAP members were entitled to cultivate for household use. On average, the area privately cultivated (but legally not privately owned) was estimated at 10% of the agricultural land used by the collective farms (Box III.1). In 1989, an average co-operative farm had 602 members and used 2 557 hectares of agricultural land. Collective farming prevailed in every category of agricultural land, except for pastures where state-owned large farms were more important (Table III.1).

At the end of the communist era there were 411 Agricultural State Enterprises (IASs) cultivating 28% of agricultural land. About half of it belonged to agricultural research networks, other state-owned non-agricultural enterprises and local councils. The average state farm operated on 5 000 hectares and employed 636 employees.

About 14% of agricultural land was privately owned. Private farming consisted of small farmers, mainly in the mountain areas, and households producing on small plots attached to co-operative farms. There were more private producers in the livestock sector than in the crop sector, as private farmers' property consisted mainly of natural pastures and hayfields. The share of private farming in total agricultural land varied from above 30% in several Transilvanian counties to below 1% in Central Romanian and Low Danube Plains.

State-owned farms were much more capital-intensive than collective farms. The ratio of fixed assets to agricultural land was 5.7 times higher and the capital-labour ratio (fixed assets per employee/member) up to ten times higher on state than collective farms (Gavrilescu, 1994). The state farms were relatively well equipped with capital assets such as agricultural machines, tractors, power installations, and means of transport. The main share of collective farms' fixed assets were orchards, vineyards and livestock. Capital goods such as tractors, combines and transport means used by the collective production units belonged to the state-owned "agricultural mechanisation stations" (SMAs) and were provided to CAPs on a contractual basis. Buildings, tools and a few animals were the main assets of individuals and households.

Box III.1. Organisation and management of collective and state farms

Collective farms (CAPs) were created during the collectivisation process in the 1950s and at the beginning of the 1960s. Theoretically, they were the result of members' free will to pool their fields and other assets in a joint farming unit with a common use of all assets. In practice, farmers had no choice and were forced to join the collective. Their production assets became *de facto* indivisible property of the collective. The member remained the legal owner of the land he brought into the collective production unit, but taking the land out of the collective farm to start individual farming was forbidden. On the other hand, each CAP member had the possibility to take a plot of 1 500 m² for private use. For their work on the collective farm, members received payments (either in-kind or in cash), the amount depending on farm results. Hired workers were paid wages but had no rights to the farm land or non-land assets.

The management of the collective farm – headed by a president and a vice-president – was formally elected by the co-operative members, but the local Communist Party authorities had to approve the elections just as they appointed state farm directors. Typically, the decision-making process was top-down in all spheres. The management of a co-operative production unit was totally subordinate to state directives and had to fulfil annual plans and the five-year plans according to the orders of the state authorities. Members had only limited influence on the management of the farm and had to execute management's orders.

State farms underwent several organisational changes since they were first established in the 1920s. Prior to 1945, land farmed by state farms (predominantly pastures and hayfields in mountain areas) was the property of local communities (*communas*) while state farms with less than 10 hectares were owned by the agricultural chambers. As a result of the agrarian reform of 1945, expropriated land was added to the state reserves, and the number of state farms as well as the total area farmed by these farms increased significantly. In 1948, state farms were reorganised into so-called State Agricultural Holdings. In 1967, they were transformed into Agricultural State Enterprises (IASs). The management of the state-owned farm – directors and managers – was appointed by the state. As with collective farms, annual and five-year plans were drafted by the state authorities. Employees of a state farm were full-time employees. They were paid from the state budget like employees in industry. Contrary to the co-operative farms, workers at state farms were not entitled to use any land for private purposes.

The institutional environment surrounding the farms was defined by the state, and consisted of several supra organisational and control structures such as the State and Co-operative Agro-Industrial Unique Councils (CUASCs). These bodies were created in 1979 on a regional basis and were responsible for the production plans for all the IASs, CAPs and state mechanisation service units, as well as handicraft co-operatives, marketing co-operatives and agro-industrial high schools in a region. Unlike common practice in many other communist countries, Romanian state and collective farms did not own social assets such as schools, hospitals, and kindergartens.

Table III.1. **Agricultural land ownership pattern in Romania, 1989**

Per cent

	Total agricultural land (14.8 million ha)	Arable land (9.5 million ha)	Grassland and hayfields (4.7 million ha)	Vineyards (0.28 million ha)	Orchards (0.32 million ha)
State sector	28	21	42	31	34
Collective sector	58	70	37	55	44
Private sector	14	9	21	14	22

Source: Ministry of Agriculture and Food, 1997 Annual Report, 1998.

B. The process of land and agrarian reform

1. Purposes and objectives

In Romania the decision to privatise agriculture was one of the first made after the collapse of the communist system in December 1989. Although in many cases previous owners or others who considered themselves entitled to ownership of land took land without any legal basis ("spontaneous" privatisation),

the 1990/1991 legislation (see below) established rules for land privatisation, which *post factum* were also applied to land repossessed spontaneously. Efficiency goals did not play an important role at the start of the privatisation process. The land laws were designed on the historical justice presumption: to restore ownership and property rights to former (pre-communist era) owners and their heirs, in particular those small-scale individual farmers who had to give up land due to the collectivisation process. The remaining collective land was to be distributed to farm workers and other eligible Romanian citizens.

Once the restitution and distribution of property started, the structure of land ownership changed radically and different types of farming emerged. The private sector became dominant, with more than 4 million small landowners. As in former times, the resulting land fragmentation is considered one of the major obstacles for the development of a healthy agricultural sector. One of the objectives of the current agricultural policy is to increase the average size of the private farms. To this aim, laws and regulations have recently been amended to allow for larger plots of land to be restituted to owners, and to enhance possibilities for leasing and/or selling arrangements.

2. Institutional and legal framework

After December 1989, the Romanian government made an effort to establish a coherent legal and institutional framework for privatisation. The general principles underlying the overall Romanian privatisation process are also applicable to agriculture. These principles are: 1) rehabilitation (restitution) of former property titles, 2) distribution of property titles of former state property or former collective property and 3) the sale of property.

Despite these common principles, the legal and institutional framework for the privatisation of state and collective farms has been different (Box III.2). This is due to the fact that the origin of the land owned and operated by the state farms was different from land operated by collective farms.

In legal terms, land used by CAPs was not state-owned. Therefore, the reforms concerning CAP land may not be considered as real privatisation, meaning the transfer of state property into private hands. However, in economic terms, reform of CAP land, or de-collectivisation, is an essential part of the privatisation process. Hence, privatisation of CAP land should be interpreted as a restitution of rights to former owners and a distribution of rights to new owners.

State farmland was legally owned by the state, in some cases even before WWII. Moreover, a large part of the state farms operated on “new” land made available for agricultural production through state investments in land reclamation of flooded plains along the Danube river. The remaining state owned land was taken over from large landowners, religious institutions and foreigners in the second half of the 1940s. Therefore, state farmland could not simply be restituted: the demand for restitution would be either weak (there was no legal basis for claiming the land) or, if the government decided to reconstitute land to former large-scale landowners, subject to strong political opposition.

3. Transformation of collective farms

According to the Land Law 18/1991, CAP land was primarily restituted to former owners and their heirs. The restitution of ownership rights was based on the ownership situation prior to the communist take over of 6 March 1945. All claims had to be submitted by March 1992. Subsequently, they were scrutinised by the Land Commissions elected in each *communa* (local government district), which had the authority to allocate and distribute land. Land that was restituted and distributed was taken from CAP land available on 1 January 1990. Assuming sufficient proof of prior ownership, land was returned to the previous owners within the limits set by law (Box III.2). Efforts were made to reconstitute the land within its previous boundaries. Unclaimed (not-restituted) land was given to CAP members who did not have prior rights from previous (or inherited) ownership, but had worked for at least three years in the co-operative; to other Romanian citizens whose land had been expropriated, or to their heirs; or to any other Romanian citizen who was willing to move to the countryside and to farm available land.

Even if certain provisions of Law 18/1991 accorded some sort of pre-emptive rights to agricultural associations (see below) to take over the non-land assets of former CAPs instead of distributing them to individuals (Ionita, 1996), the distribution of the non-land assets of former CAPs occurred to a large extent

Box III.2. Legal framework for the dismantling of the collective and state farms

The dismantling of the **collective farms** started as early as in February 1990. By Governmental Decrees Nos. 42 and 43 it was announced that members of CAPs would receive property rights to small plots of land and to the land where their houses and gardens were situated. In most cases the plots were limited to a maximum of 0.5 hectare.

Land Law No. 18/1991 (February 1991) partially abrogated Decree No. 42/1990, re-established the rights of Romanian citizens to own land, and provided the juridical regulation for the de-collectivisation of the collective farms. According to this Law, the owners (or their heirs) of collectivised land had the right to reclaim their land. The restitution was limited to a minimum of 0.5 hectare per person and a maximum of 10 hectares of arable land, including up to 1 hectare of wooded area per family. Moreover, Art. 46 of the Land Law stipulated a maximum land ownership at 100 hectares per family (including through donations, inheritance, purchase and/or land exchange). Landowners were required to ensure that their land was cultivated or pay a penalty. The area not covered by restitution would be distributed to the workers of the collective farm. The Law also partly modified the interdiction of selling land, which had been introduced in July 1990 by Law No. 9/1990. The Land Law stipulated that "land cannot be disposed of for a period of 10 years".

In 1997 and 1998 amendments to the legislation were adopted to encourage the rise in the average size of private farms and to create a legal framework for the land market in Romania. Law No. 169/1997 extended the limits of land that could be claimed for restitution up to 50 hectares, including up to 30 hectares of wooded area per family. Moreover, the **Land Circulation Law** 54/1998 (in effect since June 1998) increased the limit of land ownership per family to 200 hectares. Only those who had received back their land under the 1991 Land Law could profit from the new, larger restitution limits. The Law finally **legalised free land transactions** between individuals, including sales, and removed the state's pre-emptive purchase rights. However, while land ownership by foreign legal persons registered in Romania was made possible, land ownership by foreigners as physical persons was forbidden. The amended Land Lease Law (65/1998; first drafted as Law 16/1994) removed some previous constraints, such as the minimum length of contract, but did not allow subleasing, forbade land leasing to foreigners and introduced the obligation for the would be lessee to have undertaken formal training in agriculture. However, the implementation rules of Law 169/1997 were not adopted, meaning that potential beneficiaries could claim the land, but could not receive the land back. Therefore, a new **Law No. 1/2000** (called also Lupu Law after its promoter) was passed in January 2000, which stipulated the implementation rules for different groups of potential beneficiaries, confirmed the upper restitution limit of 50 hectares, but limited the amount of wooded area to be restituted to 10 hectares. The Law specified that if the restitution claims exceed the amount of land available, the beneficiaries will be compensated in cash.

State farms have been privatised differently. The privatisation of the state owned farms was included in the general framework of privatisation of state owned assets. In July 1990, the Romanian parliament launched a privatisation programme by adopting a law (No. 15/1990) by which all state owned enterprises would be transformed into either commercial companies (CCs) or *Regie Autonome* (RAs) considered of national strategic importance. Commercial companies, in most cases joint-stock or limited liability companies, were eligible for privatisation, while the RAs were, at least temporarily, excluded from the process (see Part III.D.3 below). In accordance with Law 31/1990, the state farms (IASs) were included in the first category, thus formally covered by the privatisation process. A government emergency ordinance (No. 198/1999) and a government decision (No. 46/2000) stipulated that the privatisation of state farms would include sales of non-land assets and the long-term lease of land remaining in state ownership after the restitution process. To represent state interests in the management of agricultural land remaining in state ownership a new State Domain Agency, under MoAF administration, was to be created.

spontaneously at each farm. In most cases, the distribution of equipment of previous co-operatives was carried out practically without any oversight, even if an evaluation commission was created at the CAP level. Many animals bred by former CAPs were taken home by the peasants and either sold or killed even before the Law 18/1991 was issued. In many cases livestock buildings were destroyed or damaged.

By end-April 1998, 84% of agricultural land that was to be privatised in accordance with the 1991 Land Law had been transferred to 3.8 million persons. Initially, property titles to only a small percentage of all area under privatisation could be issued, due to the absence of complete cadastral information. Therefore, the new landowners received so-called acknowledgement receipts, which were documents

confirming the land area without mentioning its exact location. By the end of 1999, a total of almost 3.3 million agricultural property deeds (*Titlu de Proprietate*) had been issued. This represented about three fourths of the estimated total number of land titles to be allocated.

The 1997 amendments to the Land Law increasing the upper limits of land to be restituted launched the second wave of land restitution (Box III.2). In total 1.24 million hectares were made available for this purpose. The Bill was heavily oversubscribed by the extended deadline of the beginning April 1998 with a total of more than 814 000 applications to reclaim 1.83 million hectares of land, about 0.6 million hectares more than originally foreseen for the restitution. Moreover, the Law 1/2000 extended again the deadline for the submission of claims up to 10 March 2000. The legitimacy of the applications, particularly the extent of the area claimed, is under investigation by local commissions.

4. *Privatisation of state farms*

The privatisation pattern of state farms differs from that of CAPs. While the privatisation process of the CAP land may be considered almost complete, the process of privatising state farms is slow partly due to problems related to the status of the land. This status has to be clarified before privatisation begins. There was also relatively strong political resistance to the privatisation of state farms considered to be a crucial element of Romania's food security (Quinn, 1996).¹

In Romania the total area of agricultural land owned by the state amounts to about 2.2 million hectares. However, there is a distinction between two categories of state owned land: "private domain state owned land" and "public domain state owned land" (Law 18/1991). The first category, covering an area of 1.7 million hectares in 1999, includes the land of agricultural commercial companies (the former state farms – IASs) and is subject to the next stage of privatisation. The second category, covering an area of about 0.5 million hectares in 1999, is not subject to privatisation. About half of this land represents communal pastures and the remaining part is used by research institutions, experimental stations, agricultural and forestry teaching centres and other institutions.

Agricultural commercial companies (CCs), state farms transformed into limited joint stock companies, are owned by the State Ownership Fund (SOF), Financial Investment Societies (FISs, previous Private Ownership Funds) and individual shareholders. However, the management styles in many cases remain unaltered and marketing and financial management competencies have not been developed. Many of these farms remain strongly indebted, making them even less attractive for privatisation.

The land administered by CCs was exempted from the process of restitution as specified in Land Law 18/1991, but was subject to Law 15/1990 on the restructuring of state enterprise units. Therefore, in principle, land from CCs was not to be restituted to former owners (or their heirs). However, since prior to 1989 land had been exchanged between collective and state farms, former owners claimed that some IAS land belonged to them. In such cases, former owners whose land fell within the boundaries of the state farms could apply for shares in the commercial companies, the successors of state farms. Claims could be sustained within an upper limit of 10 hectares per applicant. Former private landowners could not receive land in-kind but were allocated shares representing the value of the hectares they claimed. However, the 1994 Land Lease Law required that shareholders decide if they wanted to remain shareholders in the company or to get back land in kind after a five year "leasing contract". During this five-year period, they would be considered "locators" vis-à-vis the commercial company. About 80% of shareholders opted for the second solution, thus applying for land to be restituted (Oprescu, 1996).

In the 1995 Mass Privatisation Programme (MPP) CCs were again treated differently. Law 55/1995 excluded from the MPP all CCs administering land under the private ownership of the state, except for pig and poultry farms that were covered by the programme (Box III.3). The Law stipulated that CCs were to be privatised only after clarification of the legal status of the administered land.

The State Ownership Fund reported that out of the 547 CCs that are on the list to be privatised,² only 20 were actually privatised by November 1999. The CCs operate on about 11% of total agricultural land in Romania and their average size is about 3 000 hectares. They are still mainly state-owned, with the SOF owning 55-70% of the shares while private shareholders, including FISs, account for 30-45% of the shares.

Box III.3. Privatisation of pig and poultry state farms

In the pre-reform period, pig and poultry state farms were usually complex business units, based on **intensive and commercial farming**. In addition to livestock production farms, they usually had their own slaughterhouses and processing plants, shops and transport units. Some of them had their own feed plants.

In contrast to other agricultural commercial companies, 56 state pig and 59 state poultry farms were **included in the 1995 Mass Privatisation Programme** (Law 55/1995). However, there was no interest in exchanging MPP coupons (see Part III.D.3 below) for the shares in heavily indebted pig and poultry farms. Similarly, managers and/or employees did not opt to take advantage of privileges foreseen in the management-employee buy-out scheme (MEBO). Therefore, by the end of 1996 only 2 units had been privatised. In 1998 and 1999 the process accelerated, but the privatisation of these farms was still ongoing. In the pig industry, 17 state farms had been privatised and 26 were in the process of liquidation by November 1999. In poultry, 16 had been privatised and 30 were in liquidation.

In general, farms that have been privatised had also performed well before privatisation. Those who were interested in buying the farms had to make a deal with the SOF, the leading shareholder of the commercial companies. Some former state farms have been bought by foreign firms (German, Dutch and Italian). In several cases, the MEBO scheme was applied.

The option of partial land restitution to the shareholders made it necessary to make an inventory of land to be restituted to a total number of 261 000 eligible shareholders. The total area to be restituted by the end of 2001 from the CCs to shareholders amounts to 0.59 million hectares (MoAF data). Moreover, the second wave of land restitution, based on Laws 169/1997 and 1/2000, will further substantially reduce the land administered by CCs. While the restitution claims have to be verified, it may be expected that a majority of CCs will disappear and the land will be operated by landowners (family farming) or leased by landowners to associations or private companies.

The privatisation of CCs administering land that will remain after the restitution process will be under the supervision of the State Domain Agency. In most cases, these are CCs operating on land located along the Danube river, drained during the Communist period and never privately owned, as well as on land taken over from large landowners, not eligible for restitution. Non-land assets belonging to these CCs will be sold and land administered by them leased to private operators for 49 years. However, until the restitution claims are satisfied, the restructuring and privatisation of the remaining CCs is being postponed. The Agency will also oversee the administration of "public domain state owned land", *i.e.* 0.38 million hectares under the supervision of local councils or town halls (including 0.25 million hectares of pastures) and 0.16 million hectares of land used by various public institutions, such as research and education institutions and experimental stations.

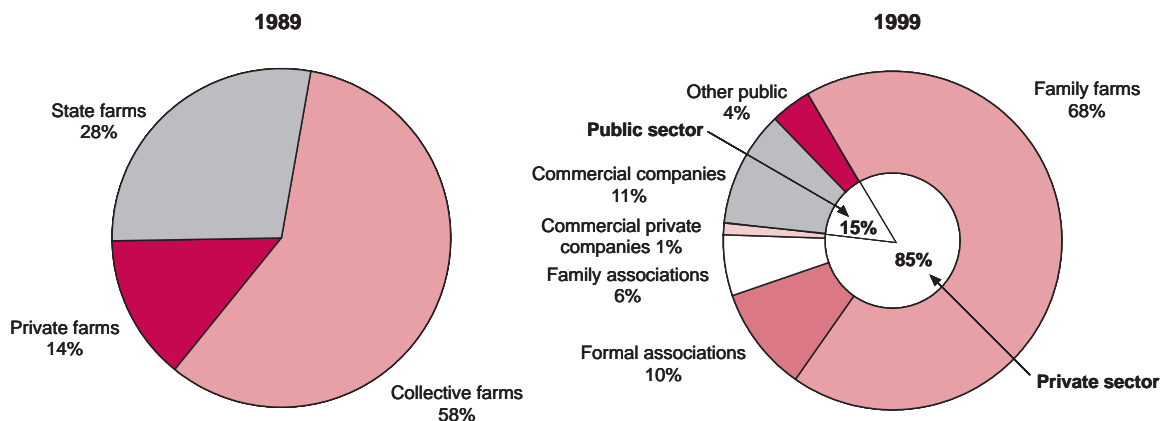
5. Emerging private farming

Development of family farming

Following the Land Law 18/1991 of 19 February 1991, agricultural land previously used by co-operatives and state farms started its return to private property. Farmers had the choice to start individual farming or to join newly established (formal or family) associations. It appears that new private landowners largely decided to stay out of the co-operative production mode. Therefore, the individual private household or family farm became the predominant type of farming in Romania, accounting in 1999 for 68% of the agricultural area (Graph III.1).³

According to Ministry of Agriculture and Food estimates, there are 4.1 million family farms in Romania (Table III.2). Their average size is small at just 2.4 hectares in 1999. Almost 70% of these farms own less than 5 hectares and only 2% own more than 10 hectares. In many cases, a family farm consists of three or even more plots, thus accentuating the fragmentation problem (Gavrilescu and Sarris, 1997). However, it

Graph III.1. Farm structures in Romania: shares in total agricultural land in 1989 and 1999



Source: Ministry of Agriculture and Food.

Table III.2. Structure of agricultural land in private ownership,¹ 1993-1999

End of:	Formal agricultural associations				Family associations				Individual farms				Total '000 ha
	No.	'000 ha	Av. size, ha	% of total land	No.	'000 ha	Av. size, ha	% of total land	No.	'000 ha	Av. size, ha	% of total land	
1993	4 265	1 910	448	17.4	13 772	1 763	128	16.0	3 419 736	7 333	2.14	66.6	11 006
1994	3 970	1 771	446	15.8	13 741	1 537	112	13.7	3 578 234	7 905	2.21	70.5	11 213
1995	3 973	1 733	436	15.2	15 915	1 596	100	14.0	3 597 383	8 052	2.24	70.7	11 381
1996	3 759	1 752	466	15.2	15 107	1 440	95	12.5	3 625 758	8 348	2.30	72.3	11 540
1997	3 913	1 714	438	14.8	9 489	1 000	105	8.6	3 973 329	8 897	2.24	76.6	11 611
1998	3 578	1 558	435	13.3	7 175	950	132	8.1	3 946 121	9 182	2.33	78.5	11 690
1999	3 573	1 429	399	11.5	6 264	869	139	7.0	4 119 611	10 083	2.40	81.5	12 381

1. Not including about 1% of land owned by commercial private companies.

Source: MoAF, News Bulletin, 1993-1998.

is difficult to estimate the exact number of individual private owners who work their land themselves, as informal leasing has developed, part-time (weekend) farmers with jobs outside agriculture are not registered as farmers and the difference between family associations and individual households is sometimes difficult to determine. Sometimes farmers who are registered as individual households have joined their land with that belonging to relatives or leased the land to large-scale private agricultural companies (see below).

Given their sometimes extremely small scale, the main function of family farms is the owners' subsistence. Self-consumption leaves almost no production left to be sold on the market. This implies that a large part of individual farms generate little or no cash income from their agricultural activities. Often they depend on income from other, non-agricultural sectors for both their day-to-day household and farming expenses as well as for their investments in the farm. As still about a fourth of the farmers have no definitive land ownership certificates, many farmers are not eligible for loans, because their assets are insufficient. Against this background of no market-orientation and of petty income generated by agricultural activities, the majority of family farms play mainly a social function of providing means of survival for the rural population. Their future economic viability as agricultural producers seems to be rather limited.

Large-scale private farming

At the beginning of the restitution process, many individuals decided to pool their land into large farms. The main motivation was the high transaction and opportunity costs of starting up an individual farm. Firstly, in many cases land titles were not allocated precisely, leaving farmers uncertain about their exact land claims. In this situation, it was easier to cultivate the land in a collective association. Secondly, the restitution was limited to land, leaving non-land assets partly in collective ownership. With highly imperfect capital markets, uncertain market perspectives in a transitional economy and no legal collateral for loans, small-scale farmers had practically no access to credit for investments. Thirdly, many former CAP members were narrowly specialised and did not have the necessary skills to start up an individual farm. Moreover, many new owners were town residents with little or no experience in agriculture. This latter group was especially stimulated to join larger units as there were many restrictions on the sell or lease of land, and penalties for leaving land idle. Like non-resident landowners, many old people with small pensions and new landowners with permanent jobs outside the village had a strong incentive to join the associations as they could not afford to be sanctioned for leaving the land fallow. Under these conditions, many small-scale landowners decided to gather into so called formal or family associations to share the perceived risks of individual farming and to benefit from economies of scale in the provision of information and credit, input purchasing, marketing and production.

The legal basis for new types of co-operation was laid down in Law 36/1991, which allowed landowners to join formal or family (informal) associations. Formal associations are legal entities with a minimum membership of 10. The members bring in (part of) their land, animals, machinery, equipment and other assets, including cash contributions. They participate in the distribution of profits. If they contribute labour, they are paid wages, often in kind. The members remain the owners of the land. Withdrawal from the association, by request, becomes effective only at the end of the agricultural year. The General Assembly of the Associates is the highest decision making body and the Administration Board manages the association. The management of the associations is a real problem with administrators often confronted with the associates' clear preference to grow crops demanding the least investment and bringing the highest income in the short term. In view of the lack of adequate machinery for field works, as the machines of the former CAPs were outdated or sold even before the creation of the associations, many associations apply to the local Agromecs (company specialised in the mechanisation of agricultural works) to rent machines. While the number of formal associations continues to fall, there were 3 573 of them at the end of 1999 farming about 1.4 million hectares (Table III.2).⁴

Family associations have no legal status. They are based on an agreement (not necessarily written) between at least two family farms to share the means to produce, store, process and/or market their goods. Family associations have the advantages of easy establishment and limited legal implications (*e.g.* no bookkeeping requirements), but have a weak organisational basis as members may decide to leave the association at any time. Family associations are, therefore, considered as a transitory alternative to formal associations or individual private farms. In fact, after a strong increase in the number of family associations in the first years after the privatisation process started, their total number declined from a peak of about 16 000 in December 1995 to 6 264 in December 1999, covering less than 0.9 million hectares (Table III.2).

In some regions, another option for small-scale landowners was to lease land to emerging commercial private companies led by individual entrepreneurs, quite often previous directors of state or co-operative farms. The number of such companies was relatively large at about 8 300 in 1997. Their share in total land ownership is small at about 1%, but their share in total land use is presumably much larger. These companies provided a positive example of reallocation and concentration of land use in some regions in Romania in the framework of excessive fragmentation of land ownership and rather unfriendly legislation for large scale private farming (in particular up to 1997). They also demonstrate the potential for rapid development of agro-business in Romania, provided that reliable markets are found (Box III.4).

Box III.4. AgroFam Holding, Ialomita County

AgroFam Holding was set up in 1991 as a private, individual enterprise by a former state farm director. It is located in the Ialomita County, one of the major grain-producing areas in Romania, previously dominated by state farms and co-operatives. During the early stage of its operations, the company focused on the supply of agricultural inputs (fertilisers and pesticides) and the provision of mechanical services to local grain producers. The company also undertook some small-scale grain trade. Within a short period of time, these operations (particularly, successful grain arbitrage) allowed the accumulation of capital and the leasing of land for grain production. By 1999, AgroFam Holding had evolved into a **large privately owned company** integrating input supply, production, storage and trade operations.

In 1999 the company operated on 7 000 hectares of arable land of which 23 hectares were owned and the remainder leased from about 3 000 small-scale private land owners on five-year lease contracts. The most rapid growth in land use took place during the break-up of agricultural co-operatives, when the company was able to **lease "in bulk"**, *i.e.* parts of the former co-operatives in which numerous individual land parcels remained consolidated. The rent is fixed and equals the value (at current market price) of 600 kg of grain per hectare leased. It is envisaged that some of the leasing contracts will not be renewed in order to reduce the overall size of the farm and make it more operational. Grains and sunflowers are the major crops produced. Twenty-three collection points function to collect, test and condition the grain. In addition, three elevator complexes operate near the major transportation routes. Two are leased from Romcereal. The third, recently built, belongs to AgroFam Holding which received a state soft credit, repayable over five years, for its construction.

The annual volume of the company's grain sales is about 90 000 tonnes. This includes resales of grain purchased from other large- and small-scale producers in the region, in addition to AgroFam's own production. About 40% of total sales is destined for export; the remainder is sold to milling companies, feed plants, and state pig and poultry complexes. **Export sales** represent the most promising marketing channel, as the contracts are settled in hard currency with no payment delays, in contrast to other marketing channels (particularly from livestock complexes) where delays may be as long as one year.

In addition to these principal operations, AgroFam is involved in grain processing and production of mixed feeds. It also has a large agricultural machinery park and repair facilities. The company employs 120 permanent workers, as well as seasonal labour at sowing and harvesting time.

The company fulfils important **social functions**, providing guaranteed income to its land lenders (the average rent paid by AgroFam Holding to an individual landowner equals roughly the total yearly minimum wage in the country). This is important given the fact that pensioners account for a substantial share of AgroFam Holding's lessors. The company also provides employment for highly qualified specialists who previously worked in large-scale farms that have been liquidated.

Development of the land market

The procedures of land restitution resulted in a highly fragmented land ownership pattern. By imposing a 10 hectare maximum for restitution and distributing the remaining collective land to CAP workers, Romania attempted to combine the strong demand for full property rights from those who formerly owned the land (historical justice) with equity considerations. Efficiency considerations played a less important role. As a result, land reform in Romania caused a fairly equitable distribution of land ownership. Romania is also one of the very few transition countries in which, according to official statistics, agricultural production has not fallen substantially since the transition started (see Part I), which would suggest that choices made did not disrupt production in the most critical period of reforms.

Land fragmentation is generally considered a major obstacle for technological progress in Romanian agriculture, as a large portion of the subsistence farms will never have the financial means to invest in new machinery and other equipment. To become economically viable in the medium and long-term, the Romanian farm sector needs further restructuring. The second wave of restitution and a transfer of land to "locators" (see above) will further shift about 1.7 million hectares from commercial companies to individual owners. Taking into account that only those who received their land back during the first wave of

restitution are eligible for restitution in the second wave, the average size of land owned by households will increase by a maximum of 0.4 hectares to about 2.8 hectares.⁵ Therefore, this additional transfer of land will only marginally increase the average size of land holdings.

However, as discussed above, the restitution and distribution process left room for the consolidation of small plots into large-scale farm structures using the land owned by individuals. The consolidation was relatively easy at the early stage of the reform when individuals formally received back their ownership titles, but land as such was not yet divided into individual plots in physical terms. This process has been poorly reflected in statistics as available data show the ownership pattern rather than land use pattern. Therefore, while land fragmentation within the family farm sector is a real problem in Romania, it is very probable that a significant part of land is used by large farms leasing land from rural and urban landowners. It is not until 2002 that the agricultural census is to be organised and the actual results of the land privatisation and farm restructuring processes will be known.

At the current stage of reform, the negative impacts of excessive land ownership fragmentation can be gradually diminished by active land transactions, including land sales and in particular land leasing. While quite an active land lease market has developed, dominated by informal arrangements, the 1991 Land Law explicitly forbade land sales. As discussed above (see Box III.2), the amended Land Lease Law (65/1998) and Land Circulation Law (54/1998) removed some previous constraints related to procedures and conditions for leasing and selling land between individuals. The Land Circulation Law stimulated land transactions, but both the number of transactions and land prices have been low. This may be due to a number of reasons: farmers receiving their formerly owned land after so many years may be not willing to transfer their land to others for emotional reasons, and/or small holders may wish to keep their land as a social security asset. Indeed, according to the Ministry of Agriculture and Food, by the end of 1999, only 70 900 hectares of land had been sold, including 44 000 hectares in rural areas. The average land price in urban areas was in 1999 much higher at 3 770 US\$/ha than in rural areas at 390 US\$/ha (at an annual average exchange rate of 15 386 lei/US\$). Land price differentiation in rural areas was high with the highest price reported in Ilfov at 2 080 US\$/ha and the lowest in counties along the Danube river at below 200 US\$/ha.

Moreover, several restrictions to land transfers remain, as subleasing is not allowed, and the lessee is obliged to undertake formal training in agriculture. It is also required that land be used for farming, while in some locations land may be more productive in other uses. Moreover, land sales and land leasing to foreigners as physical persons is forbidden. Next to legislation on ownership and land transfers, a proper land registration system would contribute to a well-functioning land market. By the end of 1999 about 25% of owners had not received their land titles. Temporary property certificates are common but not allowed to be transferred. Furthermore, these certificates are not accepted as collateral for credits and loans. Thus, speeding up the process of entitling owners to their land would improve the creditworthiness of the farming sector, resulting in better access to capital, which in turn would enhance the restructuring process.

C. Privatisation in the upstream and downstream sectors

1. *Upstream and downstream sectors before reform*

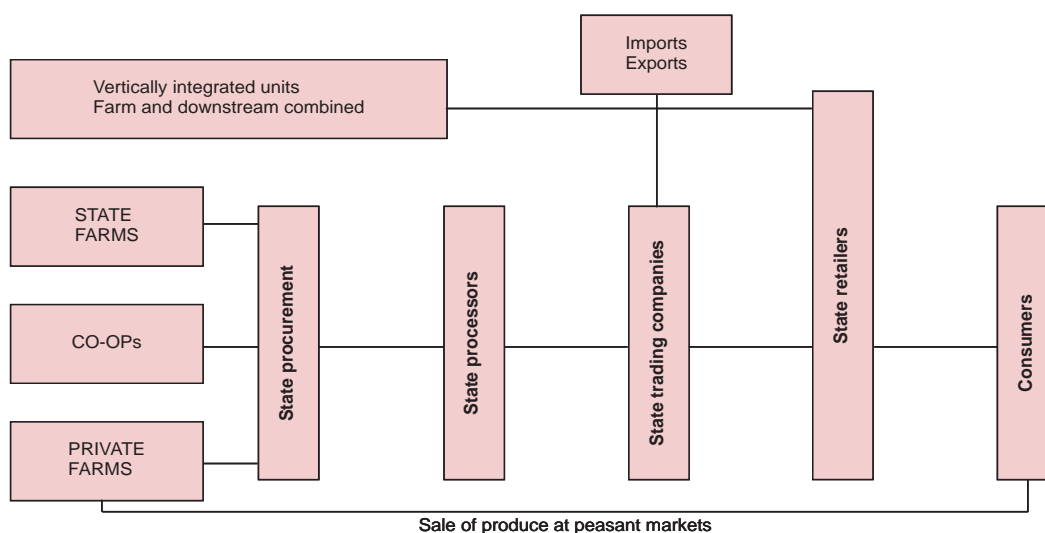
Until 1989 both upstream and downstream enterprises were organised into state monopolies, structured vertically from Bucharest to local agencies with each enterprise subordinated to a designated ministry or another central institution. The whole structure was strongly politicised with enterprise managers involved in bargaining processes with bureaucrats over input supplies, production plans and state support. In practice almost all functions performed by enterprises in a market economy were handled by branch ministries.

Input supplies, with the exception of seeds and animals, were monopolised by the MoAF's Directorate for Material Input Supply. The Directorate had a branch (BATMA) in all 41 *judets*, that supplied the state farms and Agricultural Production Co-operatives (CAPs). The private sector was supplied through CAP stores. Farm machinery production was concentrated in several specialised production units. An

extensive planning system was to match amounts produced with quantities of machinery and other inputs requested, but in practice the quantities demanded were always higher than those supplied; prices did not cover production costs; and production was directly/or indirectly subsidised. The situation substantially deteriorated in the second half of 1980s when only 50-70% of the goods requested by the agricultural producers were actually delivered. This resulted from the cumulated effects of long term factors typical for shortage economies, but also from the more immediate effect of cuts in imports and the diversion of many manufactured inputs to exports (WB, 1991; see also Part II).

Food provision from producers to consumers was concentrated in three channels: sales through vertically integrated “organised channels” (the state-managed distribution system; see Figure III.1), informal free markets, and consumption of own production. In 1989 food provision through organised channels accounted for about 60% of total food consumed. About 40% of sales through the state distribution system were provided by “public catering” such as army, hospitals, schools and work places (WB, 1991). All marketed output from the state and co-operative farms was procured and distributed by the state. Private farmers were also forced to sell part of their output through contracts with the state-managed distribution system if they wanted to have access to such inputs as certified seeds, animal feed, vaccines and chemical fertilisers.

Figure III.1. The state managed distribution system under Communism



Source: Gorton et al. (1998).

The Domestic Trade Department of the Ministry of Trade (MT) was responsible for the whole food distribution system. In each of 41 *judets* the MT had wholesale distribution enterprises (*Intreprindere de comercializare cu ridicata*) which in turn were organised into 421 retail commercial units, each providing food to officially authorised retail shops within their sales area. In total there were about 250 000 retail outlets controlled by the MT, including those owned by the Domestic Trade Department and operated directly by the MT, consumer co-operatives and “special shops” dealing in one product only.

The local peasant markets had been tolerated since the 1960s and were the main outlets for private food sales. Since there were no subsidies involved and prices were less controlled than on formal markets, products sold through this channel were relatively expensive. The main products sold in this way were fresh fruits, vegetables, dairy products and flowers. The share of peasant markets in the total food consumed varied in 1989 from about 2% for wheat and rye products to 27% for fruit and fruit products (WB, 1991).

At the end of the communist era there were about 400 food processing units, established to a large extent in 1960s. It was intended that each enterprise would be self-sufficient within the *judet*, both in supplies of raw materials and in distribution of finished products. The efficiency of the food processing industry was low with decaying buildings, poor hygiene, high spoilage rates, outdated technology and low product quality (Gorton *et al.*, 1998 and WB, 1991).

2. Objectives of privatisation

Romania's government adopted a gradualist approach to structural reforms at the beginning of the 1990s. Social and "historical justice" objectives such as protecting employment in the restructured enterprises or distributing the "national wealth" to the population predominated over economic objectives such as improving efficiency and attracting capital for the modernisation of Romanian industry. Partly due to a vague formulation of the expected results, lack of political commitment and lack of consensus among political forces, privatisation was slow during the period 1990-1996, being also hampered by institutional problems, the slow establishment of the required legal framework, and the lack of a pragmatic approach to these problems. In late 1996 the newly elected government committed itself to accelerate the speed of privatisation and to put the privatisation policy into a wider programme of structural reforms, but it was not until late 1998 that in the framework of the anti-crisis programme the government gave new vigour to the process with sales of selected major companies to foreign investors.

3. Legal framework and methods⁶

Small-scale privatisation started in Romania in March 1990 with Decree 54, which facilitated the founding and operation of private non-agricultural enterprises. However, the decree contained several limitations which, in the framework of ambivalence on the part of some segments of the administration towards privatisation, were enforced and supplemented by many bureaucratic practices and regulations that undercut the development of the private sector. The situation began to change at the end of 1990 when the leasing (and sometimes sale) of state-owned assets was made possible and the founding of private companies and partnership simplified. In 1991, the "small privatisation" of state assets in retail trade and services progressed substantially.

In July 1990, the Romanian parliament launched a privatisation programme of medium and large state owned enterprises by adopting a law (no. 15/1990) by which all state owned enterprises would be transformed into two types of state-owned entities:

- Commercial companies (CCs), either joint stock companies or limited liability companies, which were to be privatised. In total, there were about 6 300 enterprises of this type.
- *Regies Autonomes* (RAs), which were excluded from the privatisation process. They were treated as "strategic enterprises" and kept over 50% of total assets. They were located in such branches as the defence industry, energy production and distribution, mining and telecommunication, mail and railway systems, but also trade in agricultural products and the provision of farming services. Some enterprises of regional importance, such as those providing public utilities and transportation services, were also included in this category. In total, in 1992, there were 800 RAs (both national and regional).

Law 58/1991 stipulated the transfer of stock of commercial companies to two types of institutions:

- The State Ownership Fund (SOF), created in 1992, was allotted 70% of the total shares of around 6 300 commercial companies. The SOF is a public institution operating on a commercial basis under the control of the Parliament. It is the dominant agency responsible for the co-ordination, guidance and control of the privatisation process, and entrusted with the selling of its shares in state owned companies.⁷
- Five Private Ownership Funds (POFs), also created in 1992, were commercial entities to act as owner-representatives in the commercial companies. Each POF covered around 1 200 commercial companies and received the remaining 30% of the shares in these companies.

In 1992, in the framework of the initial “mass privatisation” programme, POFs issued Certificates of Ownership (COs), which were distributed free of charge to all adult Romanian citizens who each received a booklet with 5 COs, one for each POF. COs could be traded amongst Romanians or used to buy (real) shares in commercial companies, once they were put on sale. Unused COs could eventually be exchanged for common shares of POFs, once they became mutual funds.

However, due to organisational problems, conflicting incentives, and political resistance, progress in privatisation was very slow up to 1995 with only 20% of companies privatised out of those listed for privatisation in 1990. Given the shortage of financial resources in the private sector and the low involvement of foreign investors, the most widely used privatisation method was the Management-Employee Buyout (MEBO), suited to small and medium size companies. This method was accompanied by favourable financial conditions. Employees were allowed to pay almost half of the capital stake by instalments, also using certificates, at a very low interest rate and for a period of up to 10 years. As for the privatisation of the remaining medium and – in particular – large commercial companies, there were inherent conflicts of interest because the POFs were unwilling to trade the shares in their best companies against the vouchers and the SOF was not interested in selling stakes in the profitable companies in its portfolio, which it used to cross-subsidise loss-makers. Moreover, as the COs were tradable, wealthy Romanian citizens were able to accumulate certificates, disposed of by their owners at a fraction of their face value and to buy stakes in commercial companies. This became politically unacceptable and the government became concerned about the “substantial” concentration of the COs in the hands of a few “speculators” (Oprescu, 1996).

In this context, the Law to Accelerate Privatisation (Law 55/1995) was issued in 1995, and established a framework for the new Mass Privatisation Programme. The law provided for the free transfers against newly issued vouchers named “coupons” (lei 975 000 each) of up to 60% of the capital of about 4 000 companies, including 930 in the agricultural and food sectors, to 17 million Romanian citizens. This comprised the 30% of capital held by one of the five POFs and up to 30% of the SOF’s holding. In contrast to the first mass privatisation programme, the coupons were not transferable and could not be sold for cash. Together with the COs they were to be exchanged for shares in a company or for shares in a POF. Even if in some cases the process lacked transparency, by 1997 the programme was completed with most Romanian citizens having changed their vouchers to shares in either the commercial companies (85% of the total) or one of the POFs⁸ (15% of the total).

At the end of 1998, the share of the private sector in GDP was 58% and in total employment, 56%. Some 4 000 state-owned companies had been privatised, mainly through the MEBO method. In addition to the privatisation of existing state-owned enterprises, the creation of new small and medium enterprises (SME) was another factor contributing to the rise of private sector’s share in the economy. More than 645 000 new private firms were created from December 1990 to September 1997. In 1997, the government took steps leading to the conversion of most of *Regie Autonome*s into national commercial companies and, as such, to be privatised. In fact, they had not been subject to hard-budget constraints and their financial situation had become critical. However, by the end of 1998 very little privatisation had taken place amongst them. Privatisation and restructuring in key economic sectors such as heavy industry, monopoly utilities and banks had barely begun.

4. *Privatisation of supply and service enterprises*

More than two-thirds of agricultural service providers, including mechanisation, transport, wholesale input traders and irrigation system maintenance companies had been privatised by the end of 1998. However, progress in privatisation varies across sectors. The privatisation of supply and service enterprises was performed in accordance with general privatisation laws. There were no preferences for agricultural producers, except for the privatisation of mechanisation services (Box III.5).

Up to the end of 1996 progress in privatisation was slow and the input distribution system was not very different from that existing before transition (EC, 1998a). State-owned companies dominated the input distribution sector and had the main distribution networks, storage capacities and access to subsidised credits. Maximum prices for inputs were fixed by the MoAF. Farmers were granted fixed quantities

Box III.5. Privatisation in the upstream sector

The main producers of **agricultural machinery** were put on the list of commercial companies to be privatised but their privatisation has been little advanced. Part of their assets was auctioned, most often repair departments or selected buildings that could be used *e.g.* for storage. The privatisation process of Tractorul Brasov, the major tractor producer in Romania, started in 1993, but only a guest house and repair workshop had been auctioned by end-1998. To ease privatisation, in 1999 the company was divided into 10 commercial companies, with SOF agreement, but their privatisation had not started as of October 1999. In recent years, many new machinery dealers have appeared, offering foreign and domestically made machinery, but their share in the market has been rather small.

Fertiliser production and distribution services had been provided by 10 major companies. Two of them were shut down by the government. The remainder had been privatised by 1997. As domestic demand for fertilisers has fallen substantially, fertiliser producers are working well below capacity and trying to find outlets on foreign markets.

Plant protection products are supplied by six major producers. All are scheduled for privatisation, but as of October 1999 the state remains their major shareholder. While overall purchases of plant protection products have strongly declined, the share of imported products in total supplies has been increasing, exerting competitive pressure on domestic producers. The National Phyto-Sanitary Agency, organised under the authority of the MoAF, is responsible for supervising the quality standards of plant protection products.

Animal feeds are produced by 63 commercial companies with the "integrator" Nutricomb comprising 46 companies and capturing one half of the whole market. By the beginning of 1999, one-third of them had been privatised, one-third liquidated (or about to be shut down) and one-third remained state-owned.

Before the reform, **mechanisation services** for co-operatives and small farmers were performed by 573 agricultural mechanisation stations (SMAs) which owned almost all tractors, seeders, combines and harvesters not owned by the state farms. After 1989, SMAs were restructured into commercial companies (Law 15/1990) and called Agromecs, Servagromecs and Agroservices. About 100 Agromecs were privatised according to the MEBO scheme. The employees and the management of Agromecs, as well as former employees and agricultural producers who have contractual relationships with the companies to be privatised could establish an association (PAS: the Employees Action Programme) that could negotiate with the SOF and the POFs the acquisition of shares of the company. The down payment by PAS was to cover 20-30% of the negotiated price and the difference was to be paid over 12 years (compared to 10 years for other companies) at a strongly subsidised interest rate of 5-10%. Companies that were not privatised through MEBO were included into the 1995 Mass Privatisation Programme. Many former SMAs were subdivided into much smaller units and their total number rose to 1 682. About 60% of them had been privatised by the beginning of 1999.

Transport services were formerly provided by 41 state transport companies (ITSAIAs). According to Law 15/1990 the ITSAIAs were transformed into commercial companies with the state as a major shareholder. Subsequently they were reorganised and 90% of them privatised.

Animal medications and sanitary-veterinary materials are produced and supplied mainly through private channels under the overall supervision of the National Sanitary Veterinary Agency, organised under the authority of the MoAF.

Animal selection and reproduction services are provided by selected pig, poultry and cow farms. Genetic patrimony is subject to a draft law that aims to separate the animal breeding sector to be privatised and the selection and reproduction services, which are to be supported by the state.

Land reclamation and irrigation services are provided by the only supplier RAIF (*Regie Autonome* for Land Reclamation). It is the only *Regie Autonome* under MoAF authority that has not been reorganised or privatised. A special law is expected to turn it into a National Company with a controlling package of shares to be kept by the state.

Production and marketing of certified seeds were monopolised by Unisem (for vegetables and flowers) and Semrom (for cereals, technical plants, forage). Both were scheduled for privatisation. Semrom was divided into five regional units in order to speed up the process. As of October 1999, one of these sub-units was privatised. Unisem was still 70% state-owned and was to be sold by the SOF. Such activities as production, conditioning, control, certification, and trade in seeds are regulated by Law 75/1995, modified in 1997. Only certified agents can undertake these activities and the certification has to be provided by the MoAF. The National Register and the Official List provide a listing of seeds allowed for circulation in a particular year. Imports or exports of seeds are subject to prior authorisation by the MoAF. About 4 000 domestic producers have been authorised by the MoAF to produce and trade certified seeds. The private market for seeds is quite active in Romania and includes authorised foreign companies.

of inputs and obliged to sell a part of the harvest at a fixed price to so called “integrators” (*e.g.* Romcereal) which collected demand information and passed it to factories and supplying state companies (mainly Agromecs). For example, state agents had the right to dispense inputs on credit to farmers in exchange for contracts obliging farmers to sell 40% of their crops to specific processors at fixed prices (Law 83/1993). Farmers could get up to 50% advance payment for their contracts for buying agricultural inputs and mechanisation services.

When prices were liberalised and the above system was discontinued in 1997, more private agents could enter the input market. Some of them, especially pesticide importers, developed their own distribution networks. Some distributors offer consultancy to farmers on product use and provide credit to farmers until harvesting time. They also accept payment in kind that offers an alternative for farmers lacking cash.

5. Privatisation of processing enterprises

The advancement of privatisation in the food processing sector varies: at least three-quarters of milling and baking enterprises, edible oil, beer and alcoholic beverages, and equipment producers for the food industry are privatised, while privatisation is least advanced in such industries as fisheries and canned vegetables and fruits, with about 20% of enterprises privatised. In total, almost 70% of 441 state-owned processing enterprises had been privatised or liquidated by November 1999 (Table III.3).

Table III.3. Privatisation of food processing enterprises (total numbers, November 1999)

Industry	State-owned enterprises ¹	Privatised enterprises	In liquidation
Meat processing	63	24	8
Fisheries	45	9	5
Canned vegetables and fruits	35	8	8
Edible oil	17	15	0
Dairy industry	53	35	0
Milling and baking	78	70	0
Sugar and confectionery	38	22	8
Beer and alcoholic beverages	38	31	2
Wine industry	61	43	0
Tobacco	1	0	0
Equipment for food industry	12	10	0
Total food sector	441	267	31

1. The number of state-owned enterprises which were transformed initially, according to Law 15/1990, into commercial companies with the state as sole shareholder.

Source: MoAF, 1999 (data collected from SOF).

Food processing is considered to be attractive for new small and medium scale private enterprises. More than 10 000 enterprises of this type had emerged by the beginning of 1999. The numbers are particularly large in such industries as milling and baking, meat processing, and soft drinks production. Private entrepreneurs in such industries as meat processing, milling and baking and dairy established their own professional organisations to promote private activity, represent their interests vis-à-vis the state, and collect and share market information. The share of private processors in the total market supplies has been increasing and in most cases exceeded 60% in 1998, with the striking exception of fresh meat for which the share was below 40% (Table III.4). State enterprises tend to be larger than private ones and while their total number is small their share in the total supplies of food products remains important, albeit declining. For example, in 1998, 2% of state owned edible oil enterprises supplied about 33% of the oil.

The legislative and institutional framework for foreign direct investment in Romania was established as early as 1991 (see Part I). The “Law on Foreign Investment” provided for tax rebates and allowed for the repatriation of profits to attract foreign investors. However, bureaucratic rigidities and an unstable

Table III.4. **The share of private processors in total market supplies of selected food products between 1992 and 1998**

Products	Per cent						
	1992	1993	1994	1995	1996	1997	1998
Fresh meat	5.1	5.8	27.0	40.1	37.2	47.8	38.7
Meat products	38.0	14.9	45.1	53.1	53.3	67.2	67.8
Edible oil	–	6.3	7.0	14.7	15.2	62.7	66.9
Cheese	0.1	14.2	13.5	36.2	36.2	62.3	56.5
Wheat and rye flour	–	21.9	43.1	60.4	62.2	83.1	77.7
Bread	7.4	9.4	32.6	55.5	60.6	74.8	80.8
Biscuits	–	14.8	30.2	59.1	44.2	79.8	88.7
Sugar and confectionery	–	28.3	43.1	52.0	50.8	55.5	79.5
Wine	0.2	53.5	70.9	64.8	61.7	63.9	n.a.
Beer	4.1	12.0	12.1	24.1	38.1	66.7	61.5

Source: National Commission for Statistics – Private sector evolution within Romanian economy (1990-1997), 1998 Edition.

economic and legal environment left many potential investors undecided. A substantial number of joint ventures were established during the early 1990s, but these generally had only a symbolic foreign participation in order to ensure eligibility for tax advantages (OECD, 1998a).

Inflows of foreign capital grew from 1995, as the privatisation programme created improved opportunities for investments. However, the agro-food sectors benefited to a relatively small extent from the increasing number of FDI projects, as the pace of privatisation and restructuring was relatively slow. The only branches that attracted substantial FDI inflows up to the end of 1997 were the brewing, soft drinks, and confectionery industries. It is reported that the split of shares between SOF and FISs and various privatisation methods applied for a given commercial company makes it difficult for a strategic investor to acquire all of the equity capital of such a company. This applies to medium and large companies transferred into to-be-privatised commercial companies, including in agro-food industry. While it may be possible to buy a controlling stake from a SOF, such an investor would normally find that there are a number of minority investors such as FISs, the management, employees and pensioners and other individuals having pre-emptive rights in the purchase of a given percentage of shares of a company. This tends to discourage potential investors as it dilutes the share of their voting rights in the general meeting of shareholders of the privatised company. Another obstacle could be the government's insistence that any strategic investor buy the whole enterprise, refusing to consider an option of allowing investors just to buy the more profitable units and let the other units to be liquidated.

The privatisation of small and medium-size state enterprises has been dominated by the MEBO method which transferred state ownership to employee associations, quite often lacking capital, management skills and experience in dealing with market conditions. For social reasons, bankruptcy law has rarely been applied, blocking the flow of resources to more effective owners. Slow progress in the privatisation of large enterprises and the domination of the MEBO method for the small and medium enterprises undermines the restructuring process of Romanian agro-food industry. As a result many Romanian agro-food enterprises remain strongly indebted, overstaffed and run without regard to market conditions. The acceleration of privatisation since late 1998 should contribute to the real restructuring of the Romanian agro-food industry and to its improved competitiveness in the mid- and long-term.

6. *Development of wholesale trade*

In 1990 three major policy guidelines were fixed for the reorganisation of the domestic distribution system (WB, 1991):

- decentralisation: the central distribution system was discontinued except for 139 basic goods, including basic food products, for which prices were controlled by the government and which were in short supply;
- elimination of intermediaries: commissions charged by intermediaries (including wholesale margins) were determined by the government and could not exceed 4%;

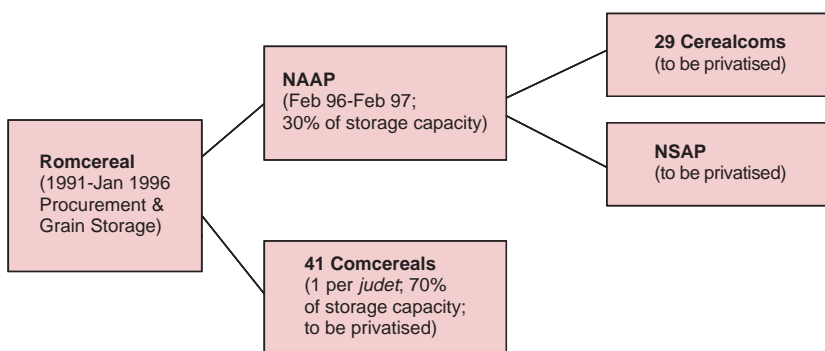
- privatisation: the 41 existing wholesale and food distribution agencies were split into 96 commercial companies and as such, according to Law 15/1990, were to be privatised with 30% of the shares of these companies to be sold immediately and the remainder privatised over several years.⁹

The strict regulations imposed on intermediary activities combined with the partial dismantling of the previous distribution structures created a vacuum which to a large extent was filled by the state purchasing system performed by “integrators”, such as Romcereal (Box III.6).

Box III.6. Privatisation of Romcereal

Romania’s monopolistic grain trading organisation Romcereal, which held the total storage capacity for grains (10.5 million tonnes) and provided farmers (most often through sub-contracted Agromecs) with inputs, services and funds, was broken up in early 1996 and replaced by the National Agency for Agricultural Products (NAAP) and 41 regional grain trading companies, the so-called “Comcereals”, operating as local monopolies. The NAAP owned 30% of the storage capacity of the former Romcereal and Comcereals owned the remaining 70%. While Comcereals were scheduled for privatisation in 1996, the NAAP was considered a state agency ensuring food security and holding strategic reserves. However, at the beginning of 1997 it was decided to privatise the NAAP which was initially reorganised into 29 commercial companies, Cerealcoms, and the storage capacity of 3.5 million tonnes was transferred to them. The privatisation process was delayed, however, due to difficulties in transferring NAAP debts to public debt. New reasons for delays arose with the reorganisation of NAAP into NSAP (National Society for Agro-Food Products), the would-be intervention agency, at the end of 1998. The NSAP was entitled to intervene to stabilise grain markets, but only on MoAF instructions. In 1999, the privatisation process accelerated with 46 Comcereals and Cerealcoms privatised and 4 liquidated by the end of November. The NSAP is to be privatised and the Rural Development and Agricultural Markets Agency will be created to, among other functions, intervene on agricultural markets.

Changes in Romanian grain storage system



Source: Adapted from Gorton *et al.* (1998).

The liberalisation of food prices in 1997 with the abolition of the state-fixed margins created more favourable conditions for competition at the wholesale level. In total, in 1997 there were about 2 000 wholesale enterprises officially registered as dealing with raw agricultural products and live animals and about 12 000 wholesale units dealing with food products, beverages and tobacco. Almost all of them are small-scale, supplying a limited number of processors or retailers. Organised wholesale markets started to appear in 1993 when the Bucharest Wholesale Market (Piata de Gros Bucuresti – PGB) was created

⁹

for fruits, vegetables and flowers. Since then, the government supported the creation of several new local wholesale markets. However, these markets, in particular PGB, are poorly integrated into the existing formal and informal flows of products between producers and consumers. Moreover, all transactions conducted through PGB are subject to obligatory VAT payments, an obligation not enforced on informal markets. Therefore, the capacity use of PGB is very limited at only 12% in 1999.

In fact, the only option available for the vast majority of small-scale producers is to go through local markets where farmers have to bring and sell the produce themselves. In particular, this concerns fruits and vegetables, but also pork and dairy products (Wei, 1999). Transactions are conducted on an *ad hoc* basis between individuals. If available, farmers rent stalls for a day in areas designated by local municipalities. Usually, these markets lack shelter and other facilities such as storage or transport, yet relatively high fees and rents are charged for occupancy.¹⁰ The majority of organised local markets are still owned and managed by the state (through the city halls), but some of them have been privatised. In general, the link between agricultural producers and processors remains one of the weakest elements in the whole food chain and producers quite often face a semi-monopsonic position of food processing enterprises and/or intermediaries originating from the old grain storage system.

An important part of agricultural production never enters markets as for the average Romanian family the share of own-consumption in total food consumption is 29% and for farming households the share is as high as 55%. About 40% of landowners live in urban areas and a significant part of them receives rents in kind. Many urban families cultivate their own plots of land only for own-consumption. A steady flow of agricultural produce from rural to urban households goes through family channels, quite often in exchange for financial support and/or labour provided during harvest or planting time. As a result, even for urban families, the share of own-consumption in total food consumption amounts to about 20%.

7. Restructuring of retail trade

The retail sector is one of the few sectors that expanded at the beginning of transition, despite the poor overall performance of the Romanian economy. Between 1990 and 1994 the total number of retail outlets rose from about 64 000 to about 183 000 and the share of private shops in the total rose to 72% in 1994, both due to the privatisation of existing shops and, in particular, rapid development of new privately owned shops. Both the inadequate development of retail trading under the previous system and low start-up costs contributed to this expansion. Many shopkeepers developed from petty traders selling from street kiosks and stalls. The vast majority of these new outlets are small, have less than 15 square meters of floor-space and deal with a wide variety of products. The share of the private sector in total food retailing (except for local markets) increased from less than 1% in 1990 to 84% in 1997 (Table III.5).

Due to economic instability and slow progress in structural reforms there was almost no foreign investment in food retailing up to 1996. Since 1997, such investment has been made by Kolos (a Danish group) which has opened two supermarkets, a Belgian-Romanian joint venture which has opened five supermarkets in Bucharest ("La Fourmi"), and Metro of Germany which has opened four cash-and-carry outlets in Bucharest, Brasov and Timisoara. The four-firm concentration ratio in retailing (all sectors) remains very low in Romania at about 1% in 1998, compared to 60% in the UK and 42% in Germany at the beginning of the 1990s (Gorton *et al.*, 1998), but is likely to rise with the merging process of domestic retailers and expected new foreign investments into the sector.

Table III.5. Food retail marketing (billion Lei, current prices)

	1990	1991	1992	1993	1994	1995	1996	1997
Food products	141	298	737	2 431	5 532	8 363	12 144	28 722
of which: private sector	0.6	52	341	1 752	4 093	6 423	9 217	24 164
Per cent	0.4	17.6	46.3	72.1	74.0	76.8	75.9	84.1

Source: National Commission for Statistics.

8. *Changes in foreign trade enterprises*

Up to 1989, all foreign trade transactions were centrally controlled and monopolised by the state Foreign Trade Companies (FTCs). In the agro-food sector the main FTCs were such companies as: Agroexport, Romagrimex, ProdExport and Fructexport. They were operating within the framework of permits to import and export, and government orders allocating foreign exchange. The state foreign trade monopoly was abolished in February 1990 and controls over companies wishing to engage in exporting and importing were removed. This allowed new foreign trade enterprises to be formed and to challenge the monopolistic positions held by the FTCs. This also enabled the FTCs to diversify the scope of activities into new areas. However, in the first half of the 1990s the FTCs were still used by the government for so called “emergency imports”, often involving direct or indirect subsidies and giving them a privileged position over private traders.

The former FTCs have been partially privatised. ProdExport and Fructexport were privatised in 1995. Romagrimex and Agroexport were still about 40% owned by the SOF at the beginning of 1999 but their links with the state were no longer important. Up to 1997 Agroexport owned the only cereal terminal in the Constanta harbour. In 1998, the state monopoly was broken with the construction of a modern terminal at Agigea, owned by Silotrans Company, set up by East Point Holding from Cyprus and Romtrans from Romania.

The share of private traders (foreign trade intermediaries with the domination of private capital and private producers carrying out direct foreign trade activity) in total foreign trade turnover has constantly been increasing from 28% of total exports and 33% of total imports in 1992 to 64% and 73%, respectively, in the first two months of 1999. The shares were even higher for agro-food trade at 90% for exports and 97% for imports at the beginning of 1999, meaning that foreign trade transactions in Romania are predominantly in private hands.

NOTES

1. The political climate for the privatisation of state farms was rather unfavourable. In addition to food security arguments, other opinions influencing policy makers included: “the privatisation process in agriculture has gone too far”, “private farming is less efficient and more environmentally damaging than state farms”, “the bigger the farm the better its economic performance”, “freed from their accumulated liabilities, state farms would be ‘world class’ competitors” (Quinn, 1996).
2. Their number increased from 411 to 547 due to divisions into smaller units during the restructuring process.
3. For a detailed discussion on factors influencing the shift to individual farming in Romania see Rizov *et al.* (1999) and Rizov and Swinnen (2000).
4. For detailed description of the establishment, membership, organisation and main activities of the associations see Ionita (1996).
5. This is based on the assumption that about 1.7 million hectares will be transferred to the household sector and the total number of households will remain at about 4.1 million.
6. The description of the Romanian privatisation process draws on: OECD *Economic Surveys: Romania 1998*, Paris, OECD, and *Romania: an Economic Assessment*, Paris, OECD, 1993.
7. There were many legal and institutional changes related to the privatisation process, but the basic scheme remained the same. For example, in the first half of 1998, two central government bodies – the Romanian Development Agency (RDA) and National Agency for Restructuring (NAR) – were merged to form the Ministry of Privatisation, and the SOF was subordinated to the new Ministry. To emphasise the government commitment to privatisation, the Prime Minister assumed the direction of the new Ministry. This institutional framework was modified again at the end of 1998. The Ministry of Privatisation was dissolved and its functions were assumed by the RDA. The SOF resumed its previous status as an autonomous body, responsible to Parliament.
8. In 1996, the POFs were transformed into Financial Investment Societies (FISs). In August 1999 the five FISs were listed on the Bucharest Stock Exchange.
9. Their privatisation went relatively smoothly in the early stage of transition, mainly through the MEBO method.
10. In particular, sellers complain that the fees and rents are considered too high in relation to the very poor administrative services provided (Wei, 1999).

AGRICULTURAL AND FOOD POLICY OBJECTIVES AND MEASURES

A. Agricultural policy framework

1. *Agro-food policy in the pre-reform period*

The main objectives of Romania's agricultural and food policy in the pre-reform decade were: to guarantee domestic food supply, with special emphasis on securing the needs of the urban population; to ensure low and stable food prices; to guarantee the supply of non-food raw materials for processing; and to increase foreign currency earnings from agro-food trade. Self-sufficiency at all levels, from local through national, and production maximisation, served as the principal policy guidelines.

These objectives were to be achieved within the framework of the planned command system. All agricultural enterprises (state farms and agricultural co-operatives) were obliged to fulfil production plans, which determined the product mix and quantities to be produced. The state ensured the financing of current operations, and the supply of inputs and services, and fully controlled marketable output. Prices were administratively fixed at each stage of the agro-food marketing chain. The system determined the level of producer receipts and strictly regulated profit distribution. Profits in excess of the established norms were retained by the state. At the same time, substantial state funds were channelled to farms for the replenishment of working capital, low-interest credits, input subsidies and as capital grants. The government financed most on-farm services and agricultural infrastructure. Farms' losses and debts were regularly absorbed by the state.

A programme of territorial self-management and self-sufficiency was adopted in 1982. It was based on the concept of local self-sufficiency and substantially increased the role of county (*judet*) authorities in agro-food supply and distribution. A county consumption fund and a centralised state fund were introduced. The first one covered agricultural production for county consumption (including non-marketable household production for family consumption). The centralised state fund was to cover needs at the national level, including agro-food exports, raw materials for processing industries, as well as agro-food supplies for special areas such as Bucharest and tourist resorts. The volume of the county consumption fund and deliveries to the centralised state fund, taken together, determined the agricultural production target for each county. A stringent responsibility was imposed on county authorities to achieve these targets. Not only state farms and co-operatives, but also individual households had to fulfil production targets to contribute to the planned output volumes. Thus, in 1984 the government adopted its Common Programme for Increasing Agricultural Production in Households. On this basis, all citizens with plots of land were obliged to cultivate them, as well as raise livestock. Households were to maximise agricultural production not only to meet their family needs, but also to increase deliveries to the county and state funds. Persons not complying with this requirement were to surrender the land to other users who undertook to cultivate it. The self-sufficiency policy of this type reflected largely the government's efforts to minimise agro-food imports, thus increasing net currency earnings from agro-food trade.

At the enterprise level, changes in financial mechanisms were introduced to increase the degree of farm self-financing. Farm enterprises were given greater autonomy in allocating revenue, but this was coupled with a reduction in budgetary financing for their current operations. Budgetary funds were to be destined mainly for support of newly set up state farms. Another important policy innovation was the inclusion of workers' earnings in farm financing. Workers of state farms and co-operatives were obliged to

contribute a part of their earnings (the so-called “social parts”) to the economic development of an enterprise, which gave them the right to receive certain dividends from the farms’ profits.¹ Adoption of the farms’ self-financing policy necessitated output price adjustments. Consequently, procurement prices were increased in 1980, 1981 and 1984. In order to stimulate production, price premiums were paid to farms which achieved higher yields and improved animal productivity.

The last pre-reform decade was also marked by a significant inflow of state capital investments in the sector. After years of heavy emphasis on industrialisation, agriculture was declared a basic economic sector. This was largely determined by the Romanian leadership’s perception of agriculture’s trade potential. Large-scale investment projects were to increase the sector’s production and currency-earning capacity. The major investment activities of the 1980s included: the nation-wide land amelioration projects; construction of large-scale livestock complexes and food processing facilities; development of input supply and service network; rural infrastructure; and “village systematisation”, an attempt to agglomerate 7 000 rural communities into urban centres.

These policy changes failed to bring about the expected results, as the underlying economic mechanisms remained basically unchanged. Moreover, the strategy of local self-sufficiency, forcing production growth at any cost, only increased distortions in resource allocation and accentuated the sector’s inefficiencies. Given realistically attainable levels of production, there was an increasing conflict between the goal of supplying agro-food products for domestic consumption and that of enhancing agro-food export earnings. The political choice was to maintain export earnings at any cost, putting severe limitations on domestic consumption. A Programme for Rational Food Nutrition, establishing “rational” food consumption norms, served as the “scientific” basis for consumption controls. At the beginning of the 1980s, a food rationing system was introduced. The number of rationed food categories increased, extending by the end of the 1980s to all major staple foods. Availability of other products, not officially rationed, was extremely limited, and access to them was possible only after long searches and queuing. A substantial drop in the production of all main livestock products in 1989 made the food supply situation in Romania extremely precarious and led the government to rigidify food rationing further. This, together with political factors fuelled up social tensions, which developed into revolt and the overthrow of the ruling regime in December 1989.

2. *New agricultural policy objectives in the reform period*

The reform programme presented by the newly elected Romanian government in May 1990, set food security and the development of sustainable agriculture as the major agro-food policy objectives. The policy guidelines were to focus on privatisation, improvement of producer incentives and stabilisation of agro-food markets.

In effect, agro-food policies applied up to 1996 were strongly influenced by the government’s commitment to improve food availability and prevent strong rises in consumer prices. However, to pursue these goals, the government opted for policies applied under the previous administrative system. State price regulation was maintained for basic agro-food products. This implied large-scale budgetary transfers to reduce consumer prices, and, at the same time, support producer prices. Additional massive transfers were involved to finance production on large-scale farms as the major suppliers to the state-controlled food marketing network. Food security concerns also contributed to the government’s reluctance to move forward the privatisation of state farms and the upstream and downstream sectors. Along with domestic market interventions, significant export restrictions were applied, perceived by the government as a way of assuring sufficient domestic food supply.

Policies continued to focus on large-scale farms, with the bulk of agricultural budgetary support channelled to unreformed state enterprises (particularly large-scale pig and poultry complexes). The policies responded poorly to a major shift in the production structure that increased the importance of small-scale producers. This shift called for significant policy reorientation to structural adjustment; development of input supply, credit and marketing systems for small producers; and building an adequate institutional framework. These issues were barely addressed by the policies of that period.

Overall, agro-food policies applied in Romania up to 1996 created strong distortions at all levels of the agro-food chain and were incompatible with restructuring and the development of market mechanisms in the sector. Despite the declared consumer protection goal, the policies exposed Romanian consumers to inefficient domestic agro-food agents operating in an overall environment that created few incentives for increased efficiency. Moreover, these policies involved high fiscal and quasi-fiscal costs, which grew to unsustainable levels and contributed to the destabilisation of the macroeconomic situation towards 1996.

The change in political leadership in Romania in November 1996, marked a radical turn in agro-food policies. Basic reform in agriculture became one of the pillars of the new government's Programme for Macro-Stabilisation and Development of Romania up to 2000. Achievement of national food security through the development of an efficient agro-food sector based on private ownership and market mechanisms was outlined as a key policy objective. Special importance was attributed to the formation of viable commercial family farms.

Apart from these general objectives, the new government's particular concern was to reduce the negative macroeconomic effects associated with the previous policies, and the transition to a less distortive system. A package of urgent reforms was prepared in close co-operation with the World Bank, whose US\$350 million Agricultural Sector Adjustment Loan (ASAL) to Romania was conditioned by implementation of the following policy measures:

- agro-food price liberalisation and abolition of price subsidies; reduction in producer input subsidies with their redirection to small-scale producers; reduction of import tariffs and removal of trade restrictions;
- agricultural and rural finance reform including elimination of inflationary practices of providing preferential credit to the agro-food sector; phasing out of preferential credit; and development of rural financial institutions;
- establishing the legal basis for an efficient land market, facilitating the purchase, sale and leasing of land;
- accelerating privatisation of state farms, including large livestock complexes, agro-service companies and the grain elevator system;
- redefining the role and functions of the Ministry of Agriculture and Food in order to transform it from an agency performing support and control of state-owned sector to one providing public goods for the whole agricultural sector.

A significant part of these provisions was implemented in 1997. Of a total package of 100 laws foreseen for adoption in 1997, nine were directly related to the agro-food sector. As a result, agro-food prices were completely liberalised along with the discontinuation of all price support. Preferential credit to large-scale farms was limited, while that to state-mandated purchasing agencies was discontinued. The government redirected input subsidies to small-scale producers. Several laws were submitted to Parliament, in order to give new impetus to land restitution and development of a land market. Important decisions were made regarding enterprise privatisation and restructuring to remove blockages in the process (see Part III). Substantial changes in the trade regime were introduced, including a significant reduction in import tariffs and the removal of all unilateral export bans and quotas.

After the radical changes in 1997, developments in agro-food policies mainly concerned ad hoc domestic and trade measures to stabilise some commodity markets. Towards 2000, the EU accession increasingly influenced policymaking in Romania. Legislative and organisational steps have been taken to move Romanian policies closer to the EU framework, concerning such areas as rural development, environmental protection, extension, and quality and sanitary controls. In this context, some shift in Romanian agro-food policies from production support to provision of public goods can be expected. Starting from 2000, substantial funds are to be granted to Romania by the European Union. These include PHARE funds (for institutional building and for public and private investments), as well as pre-accession structural funds under the Special Accession Programme for Agriculture and Rural Development (SAPARD). For the period of 2000-2006, about EURO 1 billion has been earmarked for Romania under the

SAPARD. These programs are targeted at agriculture and rural areas, and will finance improvement of agricultural marketing and processing, the quality of agro-food products, development of rural infrastructure, diversification of the rural economy, and agri-environmental measures. Annual funding is to reach about EURO 153 million, with Romania's expected co-financing of EURO 50 million per year. Building the necessary institutional and human resource capacities is currently one of the critical tasks to be accomplished in Romania in order to absorb these funds effectively.

3. Institutional arrangements

The Ministry of Agriculture and Food is the main institution responsible for formulating and implementing agro-food policy in Romania. In 1997 the structure and functions of the Ministry were substantially transformed in line with new policy tasks. Further reorganisation of the Ministry took place in 1999 as part of Romania's EU pre-accession work on harmonisation of administrative systems.

The Ministry has 42 county offices (in each county and in Bucharest), called General Directorates of Agriculture and Food. Their activity includes formulating regional development strategies, implementation of state and regional programmes of agricultural development, land cadastre, rural development. Before the creation of the National Agency for Agricultural Consultancy in 1998, the General Directorates were also responsible for agricultural extension, consultancy and professional training. Other state administrative bodies concerned with agro-food policy are:

- Specialised agencies of the Ministry of Agriculture and Food:
 - the National Sanitary Veterinary Agency;
 - the National Phytosanitary Agency;
 - the Regie Autonome for Land Reclamation, in charge of improvement and promotion of land reclamation;
 - the National Society for Agro-Food Products (see Part II, Box III.6);
 - the National Agency for Agricultural Consultancy;
- the Ministry of Water, Forest and Environmental Protection;
- the Ministry of Industry and Trade (responsible for foreign trade policy and regime, including in agro-food trade);
- the Ministry of Public Works and Territorial Development (in charge of public infrastructure and territorial development);
- the Ministry of National Education;
- the State Ownership Fund (SOF) (see Part III).

Several organisations represent producers' and processors' interests in Romania, such as the National Farmers Association; the National Union of Agricultural Producers; the National Union of Landowners and Shareholders in Agriculture; the Foundation for Rural Associations; the Free Trade Union of the Romanian Peasantry (PROPACT); the General Association of Cattle Breeders; the Union of Poultry Breeders; the Association of Private Milk Processors; the National Association of Millers and Bakers (ANAMOB); the Employers Organisations (*e.g.* of sugar, oil, horticulture, and fishery sectors).

4. Basic policy instruments

Agro-food policies applied after 1989 used a wide range of instruments, of which the major ones were:

- producer and consumer price support (control) up to 1996, including administrative price fixing, price support payments, and margin control in the downstream sector;
- preferential credits to agricultural producers and downstream agents with fixed or subsidised interest rates, debt restructuring and write-offs;

- input subsidies as a partial compensation of input costs and reduced prices for several inputs (some types of feeds, fertiliser);
- tax preferences;
- import and export tariffs, export quotas or bans and export subsidies;
- general services to support land reclamation systems, veterinary and phytosanitary services, agricultural research, education and extension.

B. Price and income support measures

1. Pre-reform period

Price policy in the pre-reform period was directed at maintaining “low and stable” food prices and minimising the cost of exportable agro-food surplus. Overall price administering applied to all stages of production and distribution.

Two price mechanisms existed before the reform: one was applied to product flows within the state (and co-operative) system; and the other to sales at the so-called peasant markets.² In 1989, the state system absorbed about 80% of total meat, 88% of eggs, 97% of wheat and rye, 83% of potatoes, and about half of milk, fruits and vegetables marketed at the producer level. The remainder was sold at peasant markets.

Prices at *peasant markets* were officially determined by supply and demand, but the government limited their upper levels. In a situation in which demand for food permanently exceeded supply, these price ceilings actually functioned as fixed prices.

Within the *state (and co-operative) system* prices at the farm gate and processing levels, as well as wholesale and retail mark-ups, were administratively fixed. This assured full state control over price formation through all stages of agro-food production and distribution. Procurement prices (*i.e.* state-fixed farm gate prices) were uniform across the country with the same levels applied to both state farms and agricultural co-operatives. Producers who registered higher per hectare yields and animal productivity, were eligible for price premiums over and above the base price. Price setting was based on a “cost-plus” principle, by which the procurement price was determined by adding a fixed profit margin to a set of normative production costs.

Procurement prices remained unchanged for long periods of time. They were increased in 1980, 1981 and 1984, and then frozen until the end of 1989, when the government allowed some slight adjustments.

The price system described above was typical for a centrally planned economy. Under this system prices served as a pure accounting instrument. They did not reflect resource scarcity nor did they provide incentives for efficient resource allocation. Comparative advantage as a basis for agricultural development was ignored. Although limited to basic food products and having undergone various modifications, administered pricing continued long after the start of reforms in Romania and was phased out only by 1997.

2. Reform period

Three periods can be distinguished in price policies after 1989: *i)* gradual price liberalisation with price regulation largely unchanged for basic commodities between 1990 and mid 1993; *ii)* a “new” price regime limited to four products of “national importance” from mid 1993 through 1996; *iii)* full price liberalisation in 1997-1999.

1990 – May 1993

Social goals largely dictated price policy during this period. The new government saw improved food availability at affordable prices as one of its principal goals. Only limited price liberalisation was implemented and strict price controls for basic food products were maintained. A direct budgetary subsidy was built into the pricing mechanism as a way to support both producers and consumers.

In 1990, the government discontinued price controls at peasant markets (*i.e.* lifted upper price limits). Agricultural enterprises were allowed to sell at freely negotiated prices, but this applied only to products marketed outside the state procurement system. No explicit obligation to deliver to the state was stipulated, nor was this obligation explicitly lifted. In February 1990, the government announced an increase in agricultural *procurement prices*, reaching on average 35% for crops and 45% for livestock products (Gavrilesco *et al.*, 1996). For certain products (sugar beet, tobacco, cattle) various incentives, such as granting free inputs or provision of low-price feeds, were introduced in order to stimulate their sales to the state.

General inflation combined with market shortages of some basic agricultural commodities exerted pressure on food prices. The government's priority was to restrain food price growth and reduce its negative effects on consumers. Thus, in 1990 the rigid state price controls were maintained, covering all stages of the official food chain. The government banned virtually all agro-food exports. Consumers received direct monthly payments, compensating for the growth in prices of basic foodstuffs. The list of these products was rather broad, including bread and bread products, flour, groats, meat and meat products, fish, animal and vegetable fats, milk and dairy products, eggs, sugar, beans and potatoes. Employers were obliged to pay this compensation to employees from their own resources, while payments to non-employed persons were covered from state funds.

In 1991 the list of products covered by administered pricing was considerably reduced. The government continued fixing procurement prices, now called "indicative", for 20 basic agricultural products. Price control up to the retail level narrowed to 12 food items, including bread, sugar, edible oil, liquid milk and milk powder, butter, beef, pork, poultry and some meat preparations. A major change in the consumer support mechanism occurred. Direct payments to consumers were discontinued and were replaced by budgetary compensation to processors. These payments were intended to reduce the final price charged to consumers and, in contrast to previous practice, were fully covered from the state budget (Table IV.1).

Table IV.1. Price support payments in 1990-1998

	1991	1992	1993	1994	1995	1996	1997	1998
Payments to processors under price support mechanism applied before mid-1993, billion Lei	17	158	64	2 ²	4 ²	1 ²	–	–
<i>of which in per cent:</i> ¹								
Bread	15	32	71	–	–	–	–	–
Milk and milk products	20	11	12	–	–	–	–	–
Pigmeat	37	36	0	–	–	–	–	–
Poultrymeat	16	13	0	–	–	–	–	–
Eggs	4	0	0	–	–	–	–	–
Other products	8	8	18	–	–	–	–	–
Premia compensation, billion Lei	–	–	255	316	795	1 235	534 ³	0.02 ³
<i>of which in per cent:</i> ¹								
Wheat	–	–	0.1	37	14	7	0	0
Milk	–	–	11	26	23	19	20	100
Pigmeat	–	–	53	26	43	59	62	0
Poultrymeat	–	–	16	8	15	13	14	0
Other products	–	–	21	3	4	3	4	0

1. Numbers may not add due to rounding.

2. Limited payments continued after mid-1993; information of their breakdown by specific products is not available.

3. Residual payments continued after 1996.

Source: Ministry of Agriculture and Food.

This regime was maintained until mid-1993. However, towards the end of this period the government stopped fixing procurement prices for a number of agricultural products, such as sunflower, sugar beet, potatoes, cereals other than wheat and maize, beef and eggs (Table IV.2 and Table IV.3). In parallel, compensation to processors was reduced. By mid-1993, most payments were allocated to bread, milk and milk products.

Table IV.2. Government fixed prices for main crop products in 1989-1996, Lei per kg

Date of enactment	Wheat		Barley	Maize		Sunflower	Sugar beet	Potatoes
	Price	of which: premia		Price	of which: premia			
1989	1.8	n.a.	1.4	1.8	n.a.	3.4	0.3	1.1
1990	2	n.a.	1.9	2.4	n.a.	4	0.6	2
1991	5	n.a.	5	6	n.a.	9.5	1.5	4
April	8	n.a.	7	6	n.a.	9.5	1.5	4
August	8	n.a.	7	10	n.a.	17	2.5	4
September	14	n.a.	13	15	n.a.	17	2.5	4
December	18	n.a.	15	20	n.a.	35	6	40
1992	25	n.a.	20	30	n.a.	50	6	60
February	40	n.a.	20	40	n.a.	n.a.	6	n.a.
May	70	30	50	60	20	n.a.	10	n.a.
November	100	10	n.a.	95	20	n.a.	n.a.	n.a.
1993	220	10	n.a.	95	n.a.	n.a.	n.a.	n.a.
March	220	10	n.a.	140	n.a.	n.a.	n.a.	n.a.
August	240	40	n.a.	140	n.a.	n.a.	n.a.	n.a.
1994	240	40	n.a.	170	n.a.	n.a.	n.a.	n.a.
March	240	40	n.a.	170	n.a.	n.a.	n.a.	n.a.
August	450	100	n.a.	170	n.a.	n.a.	n.a.	n.a.
1996								
April								

n.a. Not applicable.

Source: Ministry of Agriculture and Food; Gavrilesco *et al.*, (1996).

Table IV.3. Government fixed prices for main livestock products in 1989-1996

Date of enactment	Meat, Lei per kg of liveweight					Cow milk, Lei per litre		Eggs, Lei per piece
	Beef and veal	Pork		Poultry		Price	of which: premia	
		Price	of which: premia	Price	of which: premia			
1989	17	15	n.a.	14	n.a.	3	n.a.	1.1
1990	27	25	n.a.	20	n.a.	6	n.a.	1.5
1991	35	36	n.a.	34	n.a.	8	n.a.	2.2
January	50	50	n.a.	50	n.a.	11	n.a.	2.9
March	85	88	n.a.	98	n.a.	16	n.a.	5.0
April	100	120	n.a.	175	n.a.	25	n.a.	9.5
December	100	150	n.a.	195	n.a.	25	n.a.	10
1992	185	170	n.a.	195	n.a.	25	n.a.	10
February	215	225	n.a.	300	n.a.	40	n.a.	16
May	330	340	n.a.	350	n.a.	40	n.a.	18
August	400	400	n.a.	420	n.a.	55	n.a.	23
September	650	740	340	820	360	100	30	n.a.
November	n.a.	1 300	450	1 200	360	150	50	n.a.
1993	n.a.	1 300	450	1 200	360	200	50	n.a.
March	n.a.	1 300	450	1 200	360	300	100	n.a.
August	n.a.	2 200	650	2 100	700	300	100	n.a.
October	n.a.	3 000	1 150	2 600	950	425	225	n.a.
1994	n.a.	3 000	1 150	2 600	950	370	170	n.a.
February	n.a.	3 000	1 150	2 600	950	425	225	n.a.
May	n.a.	3 700	1 150	3 200	950	650	220	n.a.
November	n.a.	4 700	1 650	4 000	1 350	650	220	n.a.
1995	n.a.	4 700	1 650	4 000	1 350	750	250	n.a.
May	n.a.							
August	n.a.							
November	n.a.							

n.a. Not applicable.

Source: Ministry of Agriculture and Food; Gavrilesco *et al.*, (1996).

Despite this gradual liberalisation, the basic food sub-sectors continued to be subjected to strong interventions. This created huge price distortions reflected by a substantial wedge between the administered retail prices and actual "cost" prices. For example, in mid-1993 the cost of wheat needed to produce

one kilogram of standard bread equalled Lei 75, whereas the retail price of bread was set at Lei 40 (World Bank, 1994). The difference was compensated from the state budget. In 1992 the aggregate sum of this compensation reached 63% of total budgetary support to the agro-food sector (Table IV.32). The system stimulated excess consumption and food waste,³ but could not assure adequate incentives for targeted producers (state farms and other suppliers of the state-controlled network). The pressure to change existing price regulation had become very strong. This was accentuated by the position of international donors (IMF) which, among other conditions of financial aid, requested reduction of that portion of the budget burden arising from retail price control. Following the second presidential elections at the end of 1992, a new government was formed in Romania. In May 1993 it introduced a new price regulation regime.

May 1993 – 1996

During this period price regulation narrowed to four basic food products. Consumer protection continued to be seen as the main objective, but the policy focus shifted more to producer support. Arresting the output fall in the commercial sector (meaning mostly state farms) was declared equally important.

In May 1993, compensatory payments to processors were eliminated.⁴ By mid-1993, farm gate prices for most agricultural commodities were officially liberalised with their levels determined through direct negotiations between producers, purchasing agencies or processors. The same applied to wholesale and retail prices.

However, price interventions were maintained for products of “national importance”, the list of which was to be annually determined by the government. In practice, the list comprised four commodities, wheat, milk, pig and poultrymeat (and for a short period in 1993 also, maize), during the existence of this regulatory mechanism. Producer *minimum guaranteed price* and *premia* as a specific element of this price were introduced for the four commodities (Table IV.2 and Table IV.3). State purchasing agencies (state integrators such as the former Romcereal and the Agromecs, state-owned processors and other public agencies) were obliged to apply minimum guaranteed prices to all products. The premia were covered from the state budget. Technically, payments from the budget were provided to state purchasing agencies. They represented the reimbursement of part of the minimum guaranteed price these agencies paid to agricultural producers (further in the text these payments are referred to as “premia compensation”). Therefore, the premia served as an instrument of producer price support, but, by reducing the raw materials price for downstream agents, were also a subsidy to consumers. Minimum guaranteed prices and premia were set through negotiations between the Ministry of Agriculture, the Ministry of Finance and the interest groups, including producers, purchasing agencies and processors (Esanu, Lindert, 1996).

In addition to setting the minimum guaranteed prices and premia compensation, price control was maintained at the processing and trading stages. Thus, all state agents (or companies in which the government was the majority stakeholder) involved in collection/storage and processing of the four products of “national importance” had to apply fixed margins. Furthermore, the government fixed the retail prices of specific foodstuffs derived from these four products.⁵ Wholesale margins were stipulated to equal the difference between the fixed processing cost (plus a fixed profit) and the fixed retail price. These margins could not be exceeded irrespective of the number of intermediaries. All wholesalers and retailers involved in official trade turnover were subject to this pricing regime.⁶ As in the case of minimum guaranteed prices, the same negotiation procedure (involving the interest groups, the Ministry of Agriculture and the Ministry of Finance) was used to fix margin levels and prices. Extensive administrative control and reporting were imposed to ensure compliance with this price regime. Collectors/processors receiving premia as well as “official” wholesalers and retailers had to report the list of products they handled/produced, prices paid and margins charged. Local representatives of the Ministry of Finance controlled the performance of these agents (Esanu, Lindert, 1996).

In summary, the new price regulation mechanism incorporated certain changes, such as: i) reduction in commodity coverage to four commodities of “national importance”; ii) a negotiation procedure for

setting the levels of prices and margins; *iii*) introduction of the premia as a relatively transparent instrument of state intervention; *iv*) simplified (but not necessarily simple) administration and monitoring of budgetary price support.

Nevertheless, the basic principles of the mechanism introduced in May 1993 remained unchanged. Even though the negotiation procedure replaced the previous authoritative price setting, “normative” costs and profits still served as a base for price and margin negotiations. As before, minimum guaranteed prices were countrywide. They remained unadjusted over long periods of time and poorly reflected changing market conditions, with the negative gap between the minimum guaranteed and peasant market prices reaching as high as 50% (Graphs IV.1-IV.4). Producers were affected in addition by significant payment arrears from state purchasers. The latter received premia compensation with substantial delays and in turn postponed payments to producer-suppliers. Although there was no explicit obligation to sell to the state, private marketing channels were a poorly developed alternative while the state continued to control most of the existing marketing and processing infrastructure. In 1996 the state-controlled network absorbed 74% of total marketed wheat, 80% of poultrymeat, 61% of pigmeat and 45% of milk.

Premia compensation reproduced significant price distortions which were also associated with the previous system of payments to processors. In 1993-1996, premia comprised roughly one third of the minimum guaranteed price for milk, poultry and pigmeat and increased from 10% to 22% of the minimum guaranteed price for wheat (Esanu, Lindert, 1996). In the same way as payments to processors before 1993, premia compensation was a significant burden on state finance. In 1996 it represented nearly half of all budgetary transfers to the agro-food sector (Table IV.32), which as a whole accounted for about 4% of total budgetary outlays.

This type of price policy could not create genuine incentives for targeted producers. Price supports, coupled with a standstill in privatisation, lack of farm restructuring and substantial input subsidies, minimised incentives to more efficient production. The pork and poultry sector represented the most striking example. Over 60% of total premia payments were channelled to state pork and poultry complexes between 1993 and 1996 (Graph IV.5). Domestic producer prices for pork and poultrymeat during this period generally exceeded international reference prices levels. Despite these transfers, state complexes were becoming financially non-viable, and many of them finally had to go through liquidation (Part III). By the end of 1996, the price policy had not only demonstrated its inefficiency, but also became fiscally unsustainable.

1997-1999

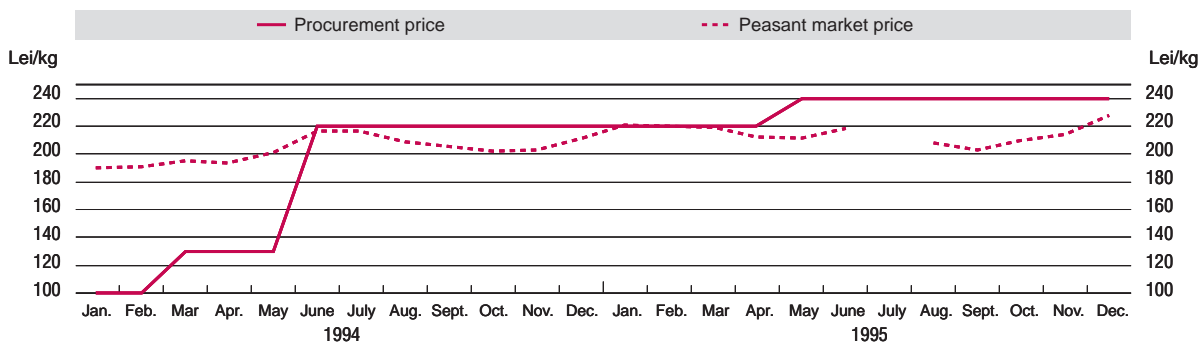
The change in government at the end of 1996 prompted a radical turn in price policies. Complete liberalisation of food and agricultural prices was one of the key objectives of Romania's market reform package put out by the new government. This was also one of the principal conditions of the Agricultural Sector Adjustment Loan (ASAL), which the World Bank approved for Romania to implement structural reforms in agriculture. In March 1997, the government started to remove margin controls in the wheat/bread, pork, poultry and milk product chains. In April 1997, minimum guaranteed prices and premia compensation were abolished.⁷

3. Price regulation for specific agricultural and food products

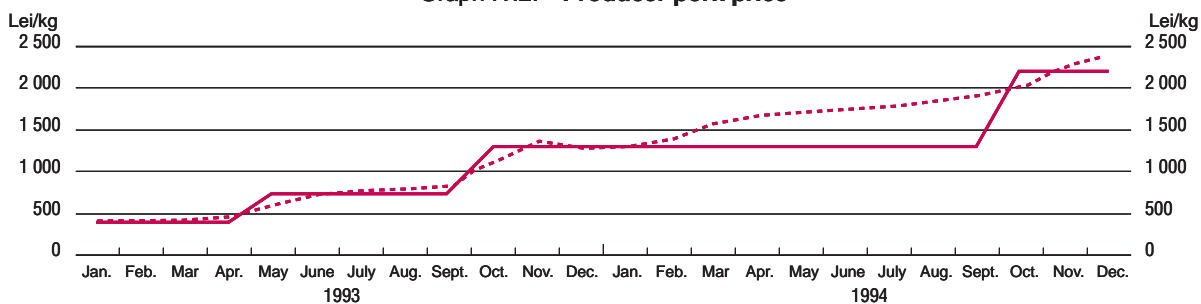
Grains

Romania has favourable natural conditions for growing grain. Between 1990 and 1999 about 67% of total arable land was sown to grains, and about 20% of GAO was generated in the grain sector, making it the largest sector of Romanian agriculture. In the 1990s the area sown to grain was rather stable at around 6 million hectares, about the same level as in 1986-1989 (Table IV.4). However, due to lower yields production declined: average annual output in 1996-1999 was 7% less compared to the four pre-reform years (1986-1989). State farms and agricultural co-operatives produced 85% of total grain output between 1986

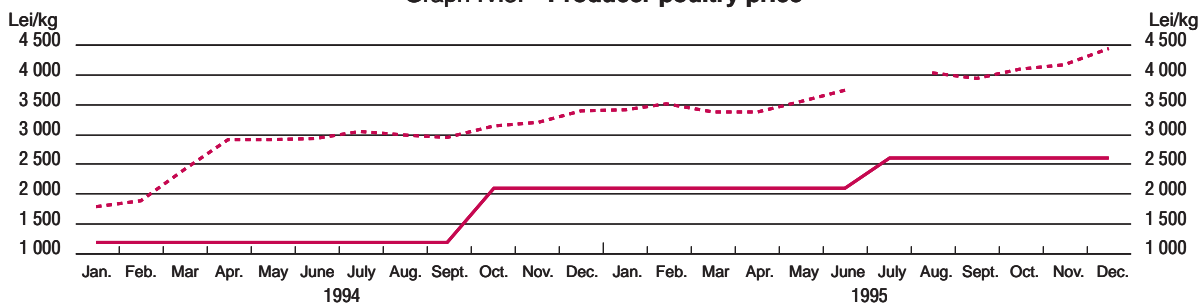
Graph IV.1. Producer wheat price



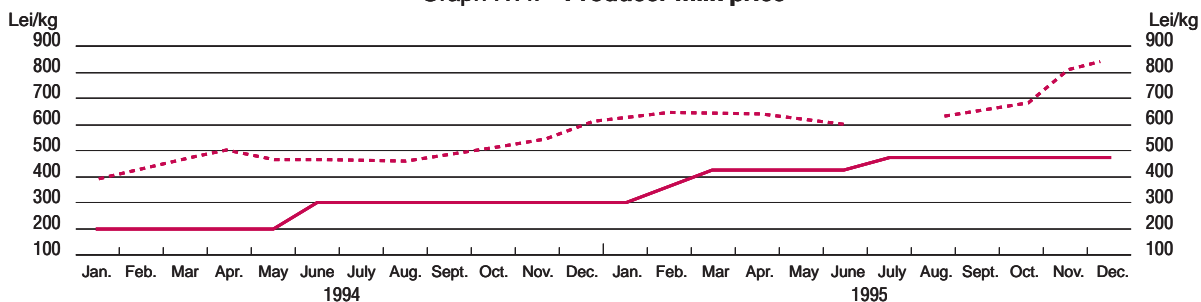
Graph IV.2. Producer pork price



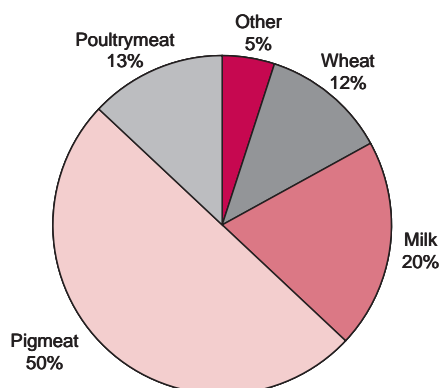
Graph IV.3. Producer poultry price



Graph IV.4. Producer milk price



Graph IV.5. Distribution of price support payments by specific products, mid 1993-1996



Source: Ministry of Agriculture and Food.

Table IV.4. Grain area, yield and production

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999p
Total grains (bf)													
Area planted	000 ha	6 286	6 027	5 704	6 049	5 774	6 395	6 558	6 445	5 843	6 320	5 921	5 371
Yield	kg per ha	3 103	3 049	3 011	3 192	2 128	2 423	2 773	3 085	2 430	3 497	2 610	3 172
Total grain production	000 tonnes	19 503	18 379	17 174	19 307	12 289	15 493	18 184	19 883	14 200	22 100	15 453	17 037
<i>of which in per cent</i>													
state farms	per cent	19	22	17	17	19	20	17	17	17	17	15	12
other large farms	per cent	55	67	46	28	23	22	20	20	33	20	18	n.a.
family farms ¹	per cent	26	11	36	55	58	58	63	63	51	63	67	n.a.
Wheat production	as % of total output	29	43	43	29	26	35	34	39	22	33	34	27
Maize production	as % of total output	61	37	40	54	56	52	51	50	68	57	56	64
Maize production													
Area planted	000 ha	3 090	2 733	2 467	2 575	3 336	3 066	2 983	3 109	3 277	3 038	3 129	3 013
Yield	kg per ha	3 852	2 474	2 761	4 077	2 047	2 605	3 132	3 192	2 932	4 174	2 756	3 629
Production	000 tonnes	11 903	6 762	6 810	10 497	6 828	7 988	9 343	9 923	9 608	12 680	8 623	10 935
<i>of which in per cent</i>													
state farms	per cent	17	18	8	7	7	9	7	7	8	7	6	5
other large farms	per cent	44	57	17	22	19	18	15	15	14	15	14	n.a.
family farms ¹	per cent	40	25	75	71	74	73	78	78	78	78	80	n.a.
Wheat and rye													
Area planted	000 ha	2 396	2 359	2 298	2 217	1 475	2 307	2 441	2 501	1 798	2 424	2 034	1 687
Yield	kg per ha	2 337	3 364	3 212	2 507	2 188	2 321	2 535	3 082	1 760	2 964	2 560	2 764
Production	000 tonnes	5 600	7 935	7 379	5 559	3 228	5 355	6 187	7 709	3 164	7 186	5 208	4 663
<i>of which in per cent</i>													
state farms	per cent	18	19	18	21	25	25	23	23	31	26	24	24
other large farms	per cent	78	78	69	38	31	28	26	28	25	29	26	n.a.
family farms ¹	per cent	3	3	13	40	45	47	51	49	44	45	50	n.a.

n.a. Not available.

p Provisional.

1. Including household plots.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

and 1990. Agricultural co-operatives alone accounted for nearly three quarters of this volume. Since 1990, the share of large-scale producers (both state farms and associations) has declined dramatically, with family farms contributing over 60% to total production towards the end of the 1990s.

In the second half of the 1980s, Romania was a net exporter of grains (except in 1986), but exports did not exceed 3% of domestic production. Grain exports were completely banned in 1990; then they remained at a very low level until 1995 (only in 1991 were exports relatively high due to high output). At the same time imports were increased substantially, particularly between 1990 and 1993 when they were at 1.8 million tonnes per year on average (compared to an annual average of 0.08 million tonnes in 1987-1989). As a result, during the first five years of the transition Romania was a net grain importer. This changed in 1995 when due to a substantial rise in exports and also a reduction in imports, the country regained its net exporter position. Between 4% and 12% of domestic production was destined for the world market in 1995-1997.

Wheat and maize are the dominant grains, comprising respectively 32% and 55% of total Romanian grain output in the 1990s.

In the pre-reform period, grain production, distribution and consumption were under strict government control. State farms and agricultural co-operatives were obliged to deliver all their marketable output to the state at fixed prices which remained virtually unchanged throughout 1984-1989.

From the onset of reform and up to 1997 the government maintained heavy interventions in the grain sector. Officially this was justified by the special role of grain in human consumption and food security. Government interventions were based on a *de facto* control over the downstream infrastructure (although private operations were legally allowed). The grain elevator system represented by the Romcereal agency was a quasi state monopoly with its diversified regional network of grain collection, storage and transportation. Decentralisation of this system began only in 1995, and privatisation only in 1997. Substantial state control remained at the processing stage: until 1994 state enterprises dominated grain milling and baking, while feed milling plants were state-owned until 1997. By November 1999 only two thirds of the existing units had been privatised (see Part III). Although there was no explicit obligation to deliver to the state, it was imposed implicitly because contracting to the state provided access to low interest credit, and subsidised seeds, fuel and fertilisers.

In the early reform period (1990-mid 1993) the government continued to fix countrywide procurement prices for all grains based on the same normative approach applied before reform. The new price regulation introduced in May-October 1993 abolished fixed procurement prices and downstream price controls for all grains except maize and wheat. For these two commodities (accounting for about 80% of the producer grain market in 1993-1998) minimum guaranteed prices and premia were introduced. Premia did not apply to exported production. For maize the premia were applied only for a short period and by the beginning of 1994 they had been abolished; however, the government continued to fix the guaranteed price up to 1997. Towards the end of the 1990s, the share of maize marketed through traditional, state-controlled channels, fell considerably and reached 16% in 1998 (Table IV.5).

Table IV.5. **Maize: procurement, peasant market and average producer prices**

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Average producer price ¹	Lei /tonne	2 728	2 948	3 600	9 950	32 540	131 466	184 941	209 565	465 439	863 329	853 919
Procurement price ²	Lei /tonne	1 430	1 450	2 610	8 190	29 220	114 760	150 735	214 433	459 388	639 471	755 770
Peasant market price	Lei /tonne	6 864	8 555	8 190	12 490	35 760	148 561	216 000	205 470	470 170	954 160	895 250
Ratio of procurement to peasant market price		0.2	0.2	0.3	0.7	0.8	0.8	0.7	1.0	1.0	0.7	0.8
Share of output marketed to purchasing agencies, processing plants and feed mills ³	Per cent	76	79	n.a.	n.a.	n.a.	42	46	27	22	15	16

n.a. Not available.

1. Unit value of output marketed through all channels.

2. Unit value of output marketed to the agencies of the former Romcereal system, Unisem, Semrom, processing plants, and feed mills.

3. As per cent of total marketed output.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

In the case of wheat, price controls were maintained along the whole wheat-flour-bread chain. Fixed margins were applied for collection/storage of milling wheat and in bread making. At the retail level the government continued fixing prices for bread (covering about 72 types of bread in 1995). State-owned processors were obliged to use mostly subsidised wheat for production of bread varieties covered by price control.

Starting from 1997, minimum guaranteed prices and premia for wheat as well as flour/bread price controls were removed. However, in 1997-1998 the government resorted to *ad hoc* measures in the producer wheat and maize markets. Due to the discontinuation of preferential credits to purchasing agencies in 1997, the latter ran into serious liquidity shortages. A revolving Wheat Fund was created, to which Lei 500 million were allocated from the state budget. Preferential short-term credit was provided out of this fund to downstream agents (both state and private) involved in wheat/flour/bread operations. Conversely, the abundant 1997 wheat harvest led the government to introduce producer storage subsidies which were designed to keep wheat off the market during the peak season. Wheat storage subsidies were maintained in 1998 and 1999, although they were not paid in 1999. In 1998 the Wheat Fund was liquidated, but the government introduced a per unit subsidy to agencies purchasing food wheat; this subsidy was paid only for a limited quantity of food wheat. Before 1997, over 80% of marketed wheat was sold to traditional buyers (agencies of the former Romcereal system, Unisem, Semrom, processing plants and feed mills); in 1997 and 1998 this share decreased markedly, but still exceeded 50% of total wheat marketing (Table IV.6).

Table IV.6. **Wheat and rye: procurement, peasant market and average producer prices**

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Average producer price ¹	Lei /tonne	1 836	1 947	2 560	10 010	28 910	106 898	210 062	225 545	466 916	825 316	857 574
Procurement price ²	Lei /tonne	1 710	1 730	1 980	6 890	26 720	99 368	205 271	226 317	437 905	796 273	833 387
Peasant market price	Lei /tonne	8 037	9 861	7 500	11 500	36 900	170 815	250 000	214 200	472 260	1 047 250	992 820
Ratio of procurement to peasant market price		0.2	0.2	0.3	0.6	0.7	0.6	0.8	1.1	0.9	0.8	0.8
Share of output marketed to purchasing agencies, processing plants and feed mills ³	Per cent	98	97	n.a.	n.a.	n.a.	84	86	81	74	62	53

n.a. Not available.

1. Unit value of output marketed through all channels.

2. Unit value of output marketed to the agencies of the former Romcereal system, Unisem, Semrom, processing plants, and feed mills.

3. As per cent of total marketed output.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

In 1990 the government imposed a ban on all food grain exports. The ban was maintained until 1994, by which time its coverage had been reduced to wheat and maize used for food and seed. However, in 1994 export quotas were introduced for seed maize and in 1995, for seed wheat as well. These quotas were in place until 1997. In 1998, the government introduced export subsidies for maize to reduce the excessive domestic supplies from the 1997 bumper harvest; in 1999 export subsidies were applied not only for maize, but also for wheat. Since the start of transition Romania has applied a common 25% import tariff for grains. This tariff was substantially increased and differentiated by type of grain in July 1995. Wheat and maize tariffs were set respectively at 65 and 63% and the rate for barley was brought up to 106%. Following the liberalisation of the trade regime in 1997, the tariff barriers were lowered to 25% for wheat and barley, and to 30% for maize.

Oilseeds

Romania is one of the largest oilseed producers in Europe. Sunflower and soyabeans accounted respectively for 84% and 14% of total Romanian oilseed production in 1990-1998 (Table IV.7). The area sown to sunflower grew substantially after 1989 particularly between 1995-1998. The average annual sunflower output during these four years exceeded the 1986-1989 level by 33%. This was largely in response to price liberalisation and the gradual relaxation of export restrictions. Growth in domestic sunflower production

Table IV.7. Oilseed area, yield and production

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999p
Total oilseeds													
Area planted	000 ha	1 001	1 072	655	643	810	703	664	807	1 012	872	1 156	1 244
Yield	kg per ha	1 080	965	1 129	1 281	1 137	1 167	1 317	1 308	1 204	1 149	1 114	1 292
Total oilseed production	000 tonnes	1 081	1 034	739	823	920	821	874	1 055	1 219	1 002	1 288	1 607
<i>of which in per cent</i>													
state farms	per cent	28	30	39	35	32	39	39	34	37	36	41	35
other large farms	per cent	71	69	60	34	33	30	29	30	30	28	27	n.a.
family farms ¹	per cent	1	1	1	31	35	31	33	36	33	36	32	n.a.
Sunflower production	as % of total output	64	63	n.a.	n.a.	84	85	87	88	90	86	83	88
Soybean production	as % of total output	28	29	n.a.	n.a.	14	12	11	10	9	12	16	11
Sunflower													
Area planted	000 ha	466	434	395	477	615	588	582	715	917	781	963	n.a.
Yield	kg per ha	1 494	1 512	1 409	1 284	1 258	1 183	1 312	1 306	1 195	1 099	1 115	n.a.
Production	000 tonnes	696	656	556	612	774	696	764	933	1 096	858	1 073	1 415
<i>of which in per cent</i>													
state farms	per cent	19	23	30	25	25	32	31	27	31	27	33	26
other large farms	per cent	79	76	68	37	36	34	32	34	33	32	30	n.a.
family farms ¹	per cent	2	1	2	38	39	35	36	39	36	41	37	n.a.
Soybeans													
Area planted	000 ha	319	512	190	108	166	75	64	73	80	63	147	n.a.
Yield	kg per ha	965	593	742	1 654	762	1 270	1 552	1 470	1 410	1 920	1 363	n.a.
Production	000 tonnes	308	304	141	179	126	95	100	108	113	121	201	169
<i>of which in per cent</i>													
state farms	per cent	50	44	83	70	75	89	93	89	93	91	82	79
other large farms	per cent	50	56	17	24	15	6	4	6	4	5	10	n.a.
family farms ¹	per cent	0	0	0	7	10	5	4	5	3	4	8	n.a.

n.a. Not available.

p Provisional.

1. Including household plots.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

made it possible to reduce oilseed imports. After a sharp increase in the first three years of reform imports fell to marginal levels towards 1998. Having had practically no exports before the reform, Romania has become a net exporter of sunflower since 1993, although the volume of exports is still relatively low.

Oilseeds were among the first products to go through price liberalisation. In 1992 retail price controls and consumer subsidies for sunflower oil were discontinued, and the government stopped fixing procurement prices. However, even though explicit price regulation was discontinued, the government maintained substantial control over the marketing infrastructure until recently. The state-controlled purchasing agencies, including those of the former Romcereal system, Semrom and Unisem were the main buyers and price-makers on the producer oilseed market, accounting for over 80% of total sunflower marketings in 1998 (Table IV.8).

Table IV.8. Sunflower: procurement, peasant market and average producer prices

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Average producer price ¹	Lei /tonne	3 400	3 400	4 000	14 780	46 380	157 175	316 658	427 503	617 265	1 145 290	1 700 401
Procurement price ²	Lei /tonne	3 400	3 400	4 000	14 780	46 380	156 130	316 217	432 184	619 261	1 145 248	1 736 434
Share of output marketed to purchasing agencies and processing plants ³	Per cent	n.a.	n.a.	n.a.	n.a.	n.a.	85	91	79	78	99	82

n.a. Not available.

1. Unit value of output marketed through all channels.

2. Unit value of output marketed to the agencies of the former Romcereal system, Unisem, Semrom, and processing plants.

3. As per cent of total marketed output.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

In 1997 the government resorted to *ad hoc* intervention to stabilise the refined oil market. Elimination of the remaining export restrictions triggered sunflower exports and caused disruptions in domestic supply. Domestic refined oil prices rose sharply. To prevent further price spiralling, retail price ceilings were imposed for two months and a substantial quantity of raw oil from the state reserve was released.

Between 1990 and 1996 sunflower exports were subjected to export bans and quotas.

Sugar – sugar beet

Sugar beet production is small in Romania. Between 1990 and 1999 this commodity accounted for only 1.6% of total arable land. The area under sugar beet sharply contracted over the first four years of transition (Table IV.9). In 1990 alone, the planted area was reduced by almost one third. Coupled with unstable yields this resulted in a dramatic decrease in total production. The average annual output in 1996-1999 was 56% below the 1986-1989 level. Cheap sugar imports from Moldova, Ukraine and Cuba (raw sugar) created strong competition for domestic production.

Table IV.9. Sugarbeet area, yield and production

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999p
Area planted	000 ha	276	256	163	202	180	97	130	133	136	129	118	66
Yield	kg per ha	22 303	26 460	20 146	23 327	16 102	18 275	21 260	19 929	20 958	21 161	20 046	21 439
Production	000 tonnes	6 145	6 771	3 278	4 703	2 897	1 776	2 764	2 655	2 848	2 726	2 361	1 415
<i>of which in per cent</i>													
state farms	per cent	2	14	10	12	14	22	26	19	19	13	15	10
other large farms	per cent	93	82	78	32	37	35	30	27	27	25	27	n.a.
family farms ¹	per cent	5	4	12	56	48	43	45	54	54	62	58	n.a.

n.a. Not available.

p Provisional.

1. Including household plots.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

Between 1990 and 1997 domestic sugar output (including sugar processed from imported raw sugar) covered from 34% to 58% of domestic consumption (in 1993 this ratio fell to 24% due to an exceptionally low sugar beet harvest).

Price controls for sugar up to the retail level existed until mid-1993, including fixed procurement prices, processing and trading margin control, and fixed retail prices and subsidies at the processor level. Between 1993 and 1998, about 80% of total marketed sugar beet was sold to processing plants, the majority of which remained state-owned (Table IV.10).

Table IV.10. Sugarbeet: procurement, peasant market and average producer prices

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Average producer price ¹	Lei /tonne	345	480	650	2 780	6 810	26 064	44 393	56 169	84 396	160 179	201 267
Procurement price ²	Lei /tonne	345	480	650	2 780	6 810	26 094	44 406	56 161	82 767	155 859	202 786
Share of output marketed to processing plants ³	Per cent	n.a.	n.a.	n.a.	n.a.	n.a.	99	99	99	96	84	93

1. Unit value of output marketed through all channels.

2. Unit value of output marketed to processing plants.

3. As per cent of total marketed output.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

An export ban on sugar was in place between 1990 and 1992. The import tariff for refined sugar had been set at 25% until July 1995, when it was increased to 135%. It was reduced to 50% as of May 1997 and to 45% as of May 1999.

Potatoes

Potatoes account for about 3% of total planted area; this share remained relatively stable between 1986 and 1999. In absolute terms the area sown to potatoes fell rapidly during the first three years of reform, then stabilised between 1993 and 1995 and tended to grow in the past few years (Table IV.11). However, average annual plantings in 1997-1999 were still 21% below those in 1987-1988, while total production was 14% lower. Traditionally, small individual producers play an important role in potato growing. Between 1986 and 1989 potatoes grown on household plots accounted for about 46% of total production; after the dismantling of agricultural co-operatives, small individual growers became the dominant producer group with their share in total output rising to over 90% in 1998.

Table IV.11. **Potato area, yield and production**

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999 ^p
Area planted	000 ha	321	351	290	235	219	249	248	244	257	255	261	274
Yield	kg per ha	20 658	12 579	11 000	7 973	11 896	14 895	11 882	12 361	13 974	12 573	12 702	14 442
Production	000 tonnes	6 631	4 420	3 186	1 873	2 602	3 709	2 947	3 020	3 591	3 206	3 319	3 957
<i>of which in per cent</i>													
state farms	per cent	8	11	8	9	8	8	6	4	4	6	3	3
other large farms	per cent	33	45	29	6	9	9	7	6	6	7	5	n.a.
family farms ¹	per cent	59	44	63	85	82	83	87	90	90	87	93	n.a.

n.a. Not available.

p Provisional.

1. Including household plots.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

Romania is self-sufficient in potatoes. There was a short rise in imports between 1989 and 1993, increasing up to 280 000 tonnes per year compared to an average of 23 000 tonnes in 1986-1988. Starting from 1994, the situation stabilised: imports fell to insignificant volumes with domestic production covering about 98% of domestic supply.

The government abolished retail price control in 1991, and in November 1992 stopped fixing procurement prices. During the reform period the potato market was fully liberalised, with the share of potatoes marketed through the traditional network (storages and processing plants) falling to 3% of total marketed output in 1998, and the bulk of the product sold at peasant markets (Table IV.12).

Exports of potatoes were banned in 1990 and 1992, but thereafter there were no quantitative restrictions on outflows. Until July 1995 the import tariff was set at a standard rate of 25%, but was then sharply increased to 150%. However, reductions followed in May 1997 and January 1999 bringing potato import tariffs down to 60 and 40% respectively.

Table IV.12. **Potatoes: procurement, peasant market and average producer prices**

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Average producer price ¹	Lei /tonne	1 679	2 341	4 370	25 160	77 250	146 086	302 227	820 315	938 219	1 422 601	2 788 143
Procurement price ²	Lei /tonne	1 160	1 130	2 610	4 000	n.a.	110 945	219 392	552 485	706 497	796 349	1 631 808
Peasant market price	Lei /tonne	4 524	8 249	9 000	32 000	86 000	167 640	317 000	860 710	977 480	1 492 606	2 878 610
Ratio of procurement to peasant market price		0.3	0.1	0.3	0.1	n.a.	0.7	0.7	0.6	0.7	0.5	0.6
Share of output marketed to processing plants and other purchasing agencies ³	Per cent	85	83	n.a.	n.a.	n.a.	34	12	8	7	6	3

n.a. Not available.

1. Unit value of output marketed through all channels.

2. Unit value of output marketed to processing plants and other purchasing agencies.

3. As per cent of total marketed output.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

Fruits and vegetables

Horticulture is an important agricultural activity in Romania. Accounting for about 6% of total area planted in the 1990s, fruit and vegetable growing contributed about 13% to GAO (1996) and provided approximately 5% of agro-food export earnings (1998). However, during the reform period the sector experienced serious decline. Between 1989 and 1999 the area under vegetables and fruits contracted by 7% and 25% respectively, and the total output of vegetables and fruits fell by 18% and 40% (Table IV.13). From 1997, a slight recovery in the vegetable sector can be observed. A substantial shift in the production structure occurred in the 1990s, reflecting the disappearance or withdrawal of large-scale units (particularly former agricultural co-operatives) from horticulture. As a result, during the 1990s, the share of family farms in total production of both fruits and vegetables increased considerably. The dissolution of agricultural co-operatives and the lack of funds for long-term investment led to the decline in intensive commercial operations and contributed significantly to the overall contraction of the sector.

Table IV.13. **Fruits and vegetables area, yield and production**

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999p
Vegetables													
Area planted	000 ha	262	253	216	195	223	219	204	214	217	208	223	234
Yield	kg per ha	20 457	14 741	10 914	11 346	11 825	13 095	12 611	13 427	12 552	11 666	12 641	13 030
Production	000 tonnes	5 354	3 727	2 358	2 214	2 632	2 872	2 569	2 871	2 728	2 427	2 819	3 049
Fruits													
Area planted	000 ha	344	318	313	311	305	296	289	278	271	267	263	239
Yield	kg per ha	5 690	4 969	4 636	3 740	3 829	7 380	3 392	3 305	6 021	5 307	3 939	3 937
Production	000 tonnes	1 958	1 580	1 453	1 165	1 167	2 183	980	917	1 632	1 417	1 036	941

p Provisional.

1. Including household plots.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

The fruit and vegetable sector was fully liberalised in 1990 when compulsory deliveries to the state were discontinued, together with fixed procurement prices and price control along the marketing chain.

A ban on exports of some vegetables (beans, onion, garlic) was imposed in 1992, and quotas on exports of certain processed products (tomato juice and paste, canned fruits and vegetables) were in place up until 1993. Domestic producers enjoy border protection on processed products. Thus, import tariffs on tomato paste and juice rose from 25% before July 1995 to 242% from July 1995 to May 1997, they then decreased to 60% between May 1997 and January 1999, and have remained at 40% since then. The same import regime was applied to grape and apple juice, apart from the period between May 1995-May 1997 when tariffs for these products were set at 74%.

Pigmeat

Pigmeat is the most important type of meat in Romania accounting for 55% of total meat production in 1990-1998. The decline in animal numbers and output started in 1989, and accelerated in the first three years of reform (Table IV.14). The dissolution of agricultural co-operatives in 1990-1991 led to mass animal slaughter. Inventories have kept falling since then except for a short period in 1995-1996. The liquidation of non-viable state complexes in 1997, as well as the sharp reduction in government support brought about a new fall in animal numbers and in production. From 1989 to 1999 the aggregate reduction in pig numbers and meat output reached 51% and 28% respectively.

Before 1997, specialised and in most cases vertically integrated state complexes played a very important role in the Romanian pig sector. Although these large state units produced only one third of total output, they accounted for about 64% (1995) of marketed pigmeat (Esanu and Lindnert, 1997). The importance of state-owned suppliers in the pigmeat market declined sharply in the past few years due

Table IV.14. Pig inventories and pigmeat production

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999p
Pig inventories, 31 Dec.	000 heads	13 651	11 671	12 003	10 954	9 852	9 262	7 758	7 960	8 235	7 096	7 194	5 749
Production (carcass weight)	000 tonnes	785	798	788	834	789	761	775	673	631	667	643	579
<i>of which in per cent</i>													
state farms	per cent	47	42	51	47	38	40	36	41	36	31	26	n.a.
other large farms	per cent	16	8	15	12	6	5	3	4	5	4	9	n.a.
family farms ¹	per cent	37	50	35	40	55	55	61	55	59	65	64	n.a.

n.a. Not available.

p Provisional.

1. Including household plots.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

to liquidation and/or privatisation of state pig complexes. At the same time newly emerging private farms have been increasing their market share.

Romania is self-sufficient in pigmeat and is a traditional net-exporter of this commodity. In the pre-reform period policies aimed at maximising exports. In 1986-1987, 12% of domestic production was channelled to export markets. In the first year of reform exports were totally banned. At the same time imports jumped to 66 000 tonnes from an average of about 1 000 tonnes in 1986-1989. Since 1991, Romania has gradually been returning to its net trader position: imported quantities have tended to stabilise at relatively low levels (about 7 000 tonnes in 1996-1997), while since 1992 the volume of exports has been recovering (except in 1995 and 1996 when they were again very low). There was another rise in imports in 1998, largely reflecting the 1997 import tariff reduction.

During 1984-1989 the procurement price for pork was kept at the same level, but in 1990 it was increased as part of the overall price rise implemented by the new government. Until May 1993 price regulation remained basically unchanged. Retail prices for pigmeat and products were fixed, compensation was provided to processors, and margin controls were applied at the processor and wholesale levels.

After the introduction of the new price regulations in May-October 1993, pigmeat was included in the list of commodities of "national importance". At the producer level guaranteed minimum prices (including producer premia) replaced previous fixed procurement prices. Price controls at collection/processing, wholesale and retail levels had been maintained. In February 1997, minimum guaranteed prices for pigmeat and premia compensation to collectors/processors were abolished. Controls were removed all along the marketing chain. Between 1993 and 1996 from 55% to 71% of all marketed pigmeat was sold to processing plants, most of which remained under state control; starting from 1997, the percentage of marketed output delivered to these traditional processors declined to about 40%, as new private processors and other types of buyers gained market shares (Table IV.15).

Table IV.15. Pigmeat: procurement, peasant market and average producer prices

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Average producer price ¹	000 Lei /tonne	25	28	44	95	424	1 044	2 188	3 481	5 208	10 524	16 897
Procurement price ²	000 Lei /tonne	18	18	32	73	294	934	1 843	3 078	4 947	9 357	13 650
Peasant market price	000 Lei /tonne	65	87	85	194	648	1 380	2 927	4 134	5 610	10 899	20 214
Ratio of procurement to peasant market price		0.3	0.2	0.4	0.4	0.5	0.7	0.6	0.7	0.9	0.9	0.7
Share of output marketed to processing plants and other purchasing agencies ³	Per cent	n.a.	n.a.	n.a.	n.a.	n.a.	71	55	56	60	47	41

n.a. Not available.

1. Unit value of output marketed through all channels.

2. Unit value of output marketed to processing plants and other purchasing agencies.

3. As per cent of total marketed output.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

The complete ban on exports of pigmeat was replaced in 1990 by an export quota, which was in place until 1992. In 1999, export subsidies were introduced for pigmeat. For this purpose, Lei 100 billion were earmarked in the state budget. Until July 1995, the import tariff for pigmeat was set at 20%, then it was increased to 236%. As a fulfilment of trade liberalisation commitments under the ASAL loan, import tariffs for pork were reduced to 60% in May 1997 with the next reduction to 45% due to be implemented in May 1999.

Poultrymeat and eggs

The decline in poultry numbers began in 1989, and with few exceptions continued through the whole reform period (Table IV.16). The contraction in inventory kept by state poultry complexes, and the liquidation of flocks belonging to the former agricultural co-operatives caused the overall decline. In 1999 the poultry inventory was only 53% of the 1988 level, while the output of poultrymeat and eggs in 1999 fell to 62% and 66% respectively of the 1988 levels. Between 1990 and 1998 poultrymeat accounted for about 22% of total meat production.

Table IV.16. Poultry inventories and poultrymeat and egg production

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999p
Poultry													
Poultry flock, 31 Dec.	000 heads	120 149 113 968	121 379 106 032	87 725	76 532	70 157	80 524	78 478	66 620	69 480	68 090		
Production (carcass weight)	000 tonnes	432	339	386	332	295	301	260	286	293	248	254	266
<i>of which in per cent</i>													
state farms	per cent	36	32	43	40	34	36	32	40	35	25	24	n.a.
other large farms	per cent	11	6	8	4	3	3	3	4	10	10	12	n.a.
family farms ¹	per cent	53	62	48	56	63	61	66	56	55	65	64	n.a.
Eggs													
Production	000 tonnes	371	358	411	365	313	288	276	278	301	270	273	270
<i>of which in per cent</i>													
state farms	per cent	26	31	37	37	31	29	25	26	25	17	14	n.a.
other large farms	per cent	14	12	14	12	9	8	6	6	8	8	8	n.a.
family farms ¹	per cent	59	57	49	50	60	63	69	68	68	75	77	n.a.

n.a. Not available.

p Provisional.

1. Including household plots.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

Romania was a net-exporter of poultrymeat and had negligible imports before 1990. After the start of the reform exports became marginal, while imports nearly equalled the previously exported amounts. Since the mid-1990s the volume of imports has tended to decline, exports have remained very low. However, in 1998 a significant rise in imports occurred (see Part II).

Romania is in general self-sufficient in eggs. Except for a jump in imports in 1990, both imported and exported volumes were insignificant between 1986-1997.

As in the case of pigmeat, large complexes are the major commercial producers. In 1996 they accounted for only about one third and one quarter of total poultrymeat and egg production, but supplied up to 80% of domestically marketed output (Esanu and Lindnert, 1997).

Between 1984 and 1989 the procurement price for poultrymeat remained unchanged and only in 1990 did the new government increase it. However, traditional price administering continued. In addition to fixed procurement prices, the government had been setting retail prices as well as processor and wholesale margins. The budgetary subsidy for poultrymeat and poultrymeat products was paid to wholesalers/processors to limit retail prices. In May-October 1993, price regulation similar to that for other products of "national importance" was established for poultrymeat. This included minimum guaranteed producer prices (and premia), premia compensation to collectors/processors and maintenance of price and margin control up to the retail level. In 1997 poultry prices were fully liberalised.

Table IV.17. **Poultry: procurement, peasant market and average producer prices**
Carcass weight

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Average producer price ¹	000 Lei /tonne	25	28	39	111	488	965	2 410	2 930	4 608	11 843	16 947
Procurement price ²	000 Lei /tonne	20	20	27	92	340	913	2 225	2 664	4 164	10 138	13 094
Peasant market price	000 Lei /tonne	71	97	95	216	722	1 421	3 539	4 868	6 989	17 713	29 878
Ratio of procurement to peasant market price		0.3	0.2	0.3	0.4	0.5	0.6	0.6	0.5	0.6	0.6	0.4
Share of output marketed to processing plants and other purchasing agencies ³	Per cent	n.a.	n.a.	n.a.	n.a.	n.a.	84	82	85	80	72	68

n.a. Not available.

1. Unit value of output marketed through all channels.

2. Unit value of output marketed to processing plants and other purchasing agencies.

3. As per cent of total marketed output.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

Table IV.18. **Eggs: procurement, peasant market and average producer prices**

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Average producer price ¹	000 Lei /tonne	30	34	32	85	288	868	2 226	2 922	4 808	10 994	14 277
Procurement price ²	000 Lei /tonne	28	28	30	80	264	769	1 948	2 591	4 312	9 272	11 270
Peasant market price	000 Lei /tonne	58	58	59	98	390	1 065	2 652	3 339	5 363	12 513	16 361
Ratio of procurement to peasant market price		0.5	0.5	0.5	0.8	0.7	0.7	0.7	0.8	0.8	0.7	0.7
Share of output marketed to purchasing agencies and processing plants ³	Per cent	92	88	n.a.	n.a.	n.a.	63	56	53	50	44	39

n.a. Not available.

1. Unit value of output marketed through all channels.

2. Unit value of output marketed to purchasing agencies and processing plants.

3. As per cent of total marketed output.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

Price liberalisation in the egg sector was implemented much earlier than in the poultrymeat sector. Between 1990 and 1992 the government continued to fix procurement as well as retail prices for eggs. In addition to this, a budgetary subsidy was injected to keep consumer prices at a low level. In 1993, all price controls for eggs were removed.

Traditional buyers, *i.e.* formerly or currently state-owned trading agencies and processing plants accounted for about two thirds of total poultrymeat purchased from producers in 1998; this share was significantly smaller in the egg sector, not exceeding 40% (Table IV.17 and Table IV.18).

Poultrymeat remained under an export ban up until 1993; since then no direct export restrictions have been applied. In 1999, the government introduced an export subsidy for poultrymeat; Lei 50 billion were budgeted for this purpose. Between 1990 and July 1995 the import tariff for poultrymeat was set at 25%. From July 1995 up until May 1997 domestic poultry producers were protected by an import tariff of 141%, which was then cut to 60% and again to 45% in May 1999.

Egg exports were banned in 1990, but no export restrictions were applied after that. The common import tariff rate of 25% had been applied for eggs before July 1995, when it was increased to 100%, and then reduced to 40% in May 1990. Since then, the import tariff for eggs has remained unchanged.

Beef and veal

Beef and veal accounted for about 35% of total meat production between 1990 and 1998. Compared to pork, beef is a less popular type of meat in Romania. Beef consumption was particularly low during the pre-reform period (7.2 kg per capita in 1989). Severe restrictions on the slaughter of young stock were

Table IV.19. **Cattle inventories and beef and veal production**

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999p
Cattle inventories, 31 Dec.	000 heads	6 692	6 291	5 381	4 355	3 683	3 597	3 481	3 496	3 435	3 235	3 143	3 038
Production (carcass weight)	000 tonnes	250	220	317	317	250	252	258	202	177	185	168	189
<i>of which in per cent</i>													
state farms	per cent	20	21	24	20	16	8	7	9	8	5	4	n.a.
other large farms	per cent	34	34	29	8	3	1	1	1	2	1	1	n.a.
family farms ¹	per cent	46	45	47	72	82	91	92	90	90	94	94	n.a.

n.a. Not available.

p Provisional.

1. Including household plots.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

enforced to support the cattle inventory. A 42% contraction in total inventory occurred during 1990-1992 when co-operatives were dissolved (Table IV.19). Removal of previous restrictions on animal slaughter also contributed to this fall. In 1993 the government reintroduced per head payments to producers keeping cattle. In the following three years reduction in cattle numbers slowed down, but has accelerated again since 1997. Between 1989 and 1999, the aggregate fall in cattle inventories reached 52%, while beef production in 1999 fell by 14% compared to 1989. Reduction in inventories was coupled with the improvements in the quality of stock and also led to substantial increase of per head availability of feed. This largely explains why output fell much less than did the inventory.

There is no specialised meat cattle breeding in Romania. Beef production is closely linked to milk production and exists predominantly as its side operation. This feature of beef production as a side activity became particularly pronounced during the past decade due to the disappearance of large-scale farms and concentration of herd in family farms, which kept cattle predominantly for milk production. Between 1989 and 1998 the share of total output coming from these semi-subsistence or subsistence units increased from 45% to 94%.

In 1986-1989, Romania exported about 110 000 tonnes of beef annually, which equalled nearly half of domestic beef output. In 1990 beef exports were banned, but revived slightly during the next four years to an annual average of 6 000 tonnes. Towards the end of the 1990s, exports became practically non-existent. Imported volumes jumped from a zero level before the transition to about 80 000 tonnes in 1990, however in the following year they were as low as 10 000 tonnes and contracted to only 1 000 tonnes annually from 1996.

 Table IV.20. **Beef and veal: procurement, peasant market and average producer prices**
 Carcass weight

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Average producer price ¹	000 Lei /tonne	46	53	56	105	596	1 187	2 399	3 726	5 142	11 431	22 875
Procurement price ²	000 Lei /tonne	28	27	44	84	397	935	1 864	3 125	4 567	10 307	17 322
Peasant market price	000 Lei /tonne	101	130	137	326	894	1 360	2 705	3 915	5 211	11 569	23 529
Ratio of procurement to peasant market price		0.3	0.2	0.3	0.3	0.4	0.7	0.7	0.8	0.9	0.9	0.7
Share of output marketed to processing plants and other purchasing agencies ³	Per cent	n.a.	n.a.	n.a.	n.a.	n.a.	52	31	22	20	14	8

n.a. Not available.

1. Unit value of output marketed through all channels.

2. Unit value of output marketed to processing plants and other purchasing agencies.

3. As per cent of total marketed output.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

During the first years of transition, retail prices for beef were controlled. This implied the fixing of the procurement price as well as downstream margin control up to the retail level. According to the new price regime introduced in mid-1993, prices for beef were freed. At the present time, the free market plays an important role in the formation of beef prices. In 1998, only about 8% of marketed output was sold to traditional processing plants, the majority of which remained state-owned or were only recently privatised (Table IV.20).

Beef was subject to an export ban in 1990. In addition, an export quota for live cattle was in place up until 1993. The import tariff, set at 20% up until July 1995, was increased to 169%, and then subsequently reduced to 50% in May 1997 and to 40% in January 1999.

Milk

The decline in cow numbers in the 1980s continued throughout the whole reform period (only in 1991 and 1995 were slight increases in inventories observed) (Table IV.21). By 1999, the cow herd had fallen by 36% compared to 1988. Milk production fluctuated in the first three years of reform, but between 1994 and 1999 a growth trend emerged, largely on the basis of improved per cow yields. Thus, in 1999 milk output was 8% higher than the 1988 level.

Table IV.21. Cow inventories and milk production

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999p
Cow inventories, 31 Dec.	000 heads	2 901	2 468	2 123	2 266	2 025	1 979	1 963	1 983	1 939	1 844	1 790	1 756
Milk production	mn tonnes	n.a.	3 742	3 813	4 061	3 862	4 066	4 680	5 039	5 063	5 009	4 849	5 174
<i>of which in per cent</i>													
state farms	per cent	16	18	18	15	13	10	7	6	5	5	4	n.a.
other large farms	per cent	28	31	26	7	2	1	1	1	1	1	1	n.a.
family farms ¹	per cent	56	51	56	78	86	89	92	93	94	94	95	n.a.

n.a. Not available.

p Provisional.

1. Including household plots.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

Similar to the pattern of beef production, milk output has been traditionally concentrated in the individual private sector. In 1986-1989, small household producers contributed 58% to total milk output. After the dissolution of co-operatives at the beginning of the 1990s, family farms became the dominant milk producers accounting for over 90% of total output towards the end of the 1990s. These production units are predominantly subsistence-oriented. In 1993-1996, about 60% of total milk production in Romania was used by producers themselves (for self-consumption and livestock feeding); however in 1998 only about 40% was retained by producers, with the rest of output marketed.

Under the previous regime, when marginal or no imports existed for the majority of basic agricultural products, Romania imported relatively large amounts of milk products. Nevertheless, the country maintained a net-exporter position. In 1990, imports rose abruptly and were high until 1993. This was largely driven by falling domestic production, but also reflected the new government's orientation towards improving food consumption. With the recovery of domestic production imports were reduced, but still remained much higher than before 1990. At the same time exports were partly restored. Since 1992 they have stabilised at about one third of their average annual level in 1986-1987.

Between 1984 and 1989 the procurement price for milk remained unchanged. At the beginning of 1990 it was doubled, but no further adjustments were made during the rest of the year. In 1991-1992 the government continued traditional administrative price fixing, although it resorted to more frequent procurement price adjustments. In addition to setting farm gate prices, strict control on price formation up to the retail level was maintained for basic milk products. For liquid milk, milk powder and butter the

government set retail prices and fixed processor and wholesale margins. In addition, compensation was injected at the processor level to cover the gap between higher processing and marketing costs and lower retail prices fixed for these products.

Strict control on milk and milk product prices continued after the introduction of the new price regulation in mid-1993. Like wheat, pigmeat and poultrymeat, milk was qualified as a product of “national importance” and became subject to a special pricing regime. Agricultural companies, in which the government was the majority stakeholder were obliged to sell milk at a minimum guaranteed price to any buyer (including private ones). State (and state majority-owned) processing plants had to use minimum guaranteed prices for all their milk purchases and apply fixed wholesale/retail prices for processed products covered by price control. Under these conditions state processors received premia compensation from the budget.⁸ Private processors could also be eligible for such compensation provided they complied with the same conditions. Milk prices were freed in 1997 in the course of the overall price liberalisation: this included the removal of minimum producer guaranteed prices and premia compensation to processors, as well as lifting controls on wholesale and retail prices for milk products. In 1998, over two thirds of marketed milk was sold outside of the traditional processing system, with peasant markets representing the main milk marketing outlet (Table IV.22).

Table IV.22. **Milk: procurement, peasant market and average producer prices**

	Units	1985	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Average producer price ¹	Lei /tonne	4 057	5 348	6 310	13 362	35 643	124 604	351 479	511 317	845 177	1 706 887	2 651 239
Procurement price ²	Lei /tonne	2 636	2 636	5 572	10 678	32 374	92 624	267 666	385 455	586 280	1 035 967	1 619 027
Peasant market price	Lei /tonne	6 589	8 171	11 492	19 089	51 812	173 815	454 826	639 690	1 069 079	2 165 203	3 149 913
Ratio of procurement to peasant market price		0.4	0.3	0.5	0.6	0.6	0.5	0.6	0.6	0.5	0.5	0.5
Share of output marketed to processing plants ³	Per cent	64	51	n.a.	n.a.	n.a.	59	54	49	45	39	32

n.a. Not available.

1. Unit value of output marketed through all channels.

2. Unit value of output marketed to processing plants.

3. As per cent of total marketed output.

Source: National Commission for Statistics, Ministry of Agriculture and Food.

Between 1990 and 1992 exports of liquid milk, butter and milk powder were prohibited, but in 1993 the ban was limited only to butter and other fats derived from milk. In addition to this, export quotas for cheeses were in place up until 1993. Before July 1995, a 25% import tariff was applied for milk powder and butter and a 20% tariff for cheese. Border protection increased significantly after introduction of the new tariff schedule resulting from the WTO membership. The import tariff for butter was brought up to 235%, for cheese and milk powder to 171 and 98% respectively. In May 1997 a substantial cut in import tariffs followed, with tariffs for milk powder lowered to 50%, for butter and cheese to 60%. The next reduction was in January 1999, bringing import tariffs for the three products down to 45%.

C. Foreign trade measures

1. Pre-reform period

Up to 1989, Romania's trade policy was determined by its system of central planning and participation in the CMEA. All foreign trade transactions were centrally controlled and carried out by the state Foreign Trade Companies (FTCs). Hard currency earnings were collected centrally and used for financing state planned imports. The exchange rate was fixed administratively and had no impact on foreign trade transactions.

The system completely isolated domestic producers from developments on world markets. The isolation was even reinforced in the second half of the 1980s when Romania's leaders decided to repay foreign debts at any cost. Imports were drastically reduced and exports enforced by administrative measures. Exports were redirected from CMEA members to convertible currency markets. Such a situation led to slow productivity growth and increasing lack of competitiveness. In contrast to most other central and eastern European countries, there was no relaxation in the foreign trade regime in Romania in the 1980s and the state monopoly in foreign trade remained unchanged up to the end of 1989.

2. *Reform period*

General measures

The economic reforms of the 1990s partially liberalised the economy, including foreign trade. The state foreign trade monopoly was abolished in February 1990. Controls on companies wishing to engage in exporting and importing were removed. This made it possible to set up new enterprises and to challenge the monopolistic positions held by the state-owned FTCs. This also gave the FTCs the opportunity to diversify their activities into new areas. The FTCs have been partially privatised (see Part III) but they continue to play an important role in foreign trade. For several years they were used by the government for so called "emergency imports", involving subsidies and giving the former FTCs a privileged position over private traders. The overall openness and market orientation of Romanian trade was improved through such measures as greater emphasis on tariffs than quantitative import restraints, elimination of "forced" exports, and participation in multilateral and bilateral trade agreements (see Part II). However, between 1990 and 1996 the agricultural trade regime tended to be protectionist and trade was subject to various direct and indirect controls. Bans and quotas were applied to a variety of exportable products (although the scale of these restrictions had been diminishing over time); the overvalued official exchange rate in certain periods provided further disincentives for exports. Starting from 1997 a substantial liberalisation of the agro-food trade regime was observed, driven to a large extent by the conditionalities of World Bank ASAL to Romania.

Import measures

In the reform period four phases in border protection against agro-food imports can be identified:

- 1990-1992

Between 1990 and 1992, the set of border measures against agro-food imports was mixed and combined rather low tariff protection with a wide set of non-tariff barriers such as minimum import prices, licensing of imports linked with quantitative restrictions, and excessive sanitary controls. The trade-weighted rate of tariff protection against agro-food imports was low at 12.9% in 1991 and declined to 9.7% in 1992. Tariff dispersion was also low with averages ranging in 1992 from 3.3% for crop products to 16.7% for prepared foodstuffs, beverages and tobacco. This means that tariff protection as such was rather neutral. However, there was a strong differentiation between protection levels linked with non-tariff measures and those with foreign exchange (FE) rationing. The latter gave preferential FE access to favoured sectors (in particular non-restructured heavy industry) and discriminated against other sectors.

- 1993 – mid-1995

A new Tariff Schedule was implemented in 1993 (Table IV.23). It provided for a rather moderate level of import protection of both industrial and agricultural products. The trade weighted average tariff for industrial products was 12% and for agricultural products, 22%. An apparent increase in tariffs on agricultural products was linked with the diminished importance of non-tariff barriers. The new tariff structure was neutral with very low dispersion of tariffs on individual products. The vast majority of tariffs on agro-food products ranged between 20% and 25% and the minima and maxima rates varied from zero on soyabeans to 60% on processed tobacco and substitutes. The rates tended to rise with the degree of

processing. The trade-weighted average tariff on agro-food products rose slightly to about 25% in the first half of 1995, but the dispersion remained low. In 1993 the Interim Agreement with the European Union came into force, but its impact on agro-food import protection in Romania was negligible (see Part II).

- Mid-1995 – 1996

This period was marked by the Uruguay Round Agreement which came into effect on 1 July 1995. Romania has developing country status in the WTO, and as such is subject to lower reduction commitments and longer implementation periods under the three pillars (domestic support, export competition and market access) of the URAA than developed countries (see Part II). Profiting from this status, Romania negotiated a high level of protection (Table IV.23). Non-tariff measures were discontinued, but tariff bindings on agro-food products were extremely high. The weighted average of bound tariffs for all agro-food products was at 160% with the highest for fresh or frozen pork at 366% in the second half of 1995. The tariffs actually applied (statutory tariffs) were lower than the bindings but still high. The average applied tariff on agro-food products rose from 25% in the first half of 1995 to 75% in the second, with tariffs of 236% and 143% respectively on pork and poultry. Moreover, tariffs became very dispersed, significantly distorting price ratios. The high tariff bindings gave Romania considerable room for manoeuvre to adjust the schedule according to a given situation, as perceived by policy makers. As a result, the tariff system became unpredictable, dominated by “temporary reduced tariffs” and *ad hoc* duty exemptions. Duty exemptions allocated to specific importers became the rule rather than the exception. This is evidenced by the fact that the actual revenues from tariffs related to the value of imports were three times lower than trade-weighted average statutory tariffs (Tesliuc, 1996b).

Table IV.23. MFN import tariffs for basic agro-food products in Romania, per cent

	Before 1 July 1995	From 1 July 1995	From 9 May 1997	From 1 January 1999	From 13 May 1999
Beef	20	169	50	40	40
Pork	20	236	60	60	45
Poultrymeat	25	140.8	60	60	45
Milk powder	25	98	50	45	45
Butter	25	235	60	45	45
Cheese	20	171	60	45	45
Eggs	25	100	40	40	40
Potatoes	25	150	60	40	40
Tomatoes	25	141	40	40	40
Wheat	25	65	25	25	25
Barley	25	106	25	25	25
Maize	25	63	30	30	30
Flour	25	145	45	40	40
Sunflower oil	25	75	35	35	35
Margarine	20	151	50	40	40
Meat preparations	25	80	50	50	45
Sugar	25	135	50	50	45
Pasta products	25	37-41	20-50	20-40	20-40
Wines	25	144	144	144	144
Edible offal	20	169-236	50-60	50-60	45
Canned meat	25	143.3	50	50	45
Chocolate and chocolate products	25	54-91	50-60	50-60	45
Tomato paste and juice	25	242.5	60	40	40
Grape juice	25	74	60	40	40
Apple juice	25	100	60	40	40
Ketchup	25	64	60	40	40

Source: OECD Secretariat

- 1997-1999

The 1997 “shock therapy” programme (see Part I) had important consequences for the import regime, including that for agro-food products. The protective trend of Romanian agricultural trade policy

reversed towards trade liberalisation. As a result, the MFN import tariffs were substantially reduced. As agreed with the World Bank, the production weighted average of 67% in 1996 was reduced to 27% by mid-1997. The maximum tariffs were lowered to 60% for sensitive commodities such as meat and meat products, dairy products, vegetables, sugar and fruit juice (Table IV.23). About 80 percent of the remaining tariff lines were fixed at below 40%. Excepted from this rule were beverages and cigarettes for which tariffs were higher, as they were not covered by the ASAL conditions. At the same time, all laws and regulations allowing for administratively managed import tariff exemptions were repealed.

In 1998 the Romanian government contemplated increases in import tariffs on other food products. This led to a disagreement with the World Bank over whether Romania's actions violated the conditions of the ASAL agreement and put the second tranche of the loan (US\$150 million) in jeopardy. After intensive talks, a second phase of import liberalisation took place at the end of 1998 with the production weighted average declining to 22% in 1999. In accordance with this agreement the maximum tariff rate was reduced in January 1999 and again in May 1999 to 45% for such commodities as pork, poultrymeat, dairy products, sugar, canned meat and chocolate. Tariffs for all other agro-food products were below 40% (Table IV.23). However, in August 1998 a minimum import price for meat was introduced in order to diminish customs under-invoicing (US\$1 100-1 500 per tonne for poultry and US\$1 300-2 500 per tonne for pork). It was officially stated that this measure also sought protection of Romanian producers against subsidised meat imports.

Agro-food trade liberalisation was also driven by the CEFTA agreement that Romania joined in 1997. Tariff concessions provided by Romania in the framework of the accession negotiations led to substantial reductions in tariffs on selected agro-food products compared to the MFN tariffs. Claiming that these reductions undermined domestic markets, Romania temporarily suspended tariff reductions on imports of several products, including meat, meat products and canned meat from Hungary, the major agro-food exporter in the region (see Part II).

In response to developments on the domestic market situation, the Romanian government resorted to temporary changes in import tariffs. "Speculative" increases in pork prices at the end of 1997 led the government to reduce import tariffs on pork to zero during the period between mid-December 1997 and mid-February 1998. Following a sharp decline in sunflower seed production in 1997, import tariffs on sunflower seeds were temporarily reduced to zero in 1998. However, in order to improve the balance of payments, in October 1998 Romania imposed a surcharge on all imports. Initially it was set at 6%, but was reduced to 4% starting from January 1999. A further reduction to 2% followed in January 2000, and the surcharge is to be completely eliminated by January 2001.

Export measures

Agro-food exports were exposed to bans and unilateral quotas between 1990 and 1997 (Table IV.24). These restrictions were particularly strict at the beginning of the transition with an almost complete ban on agro-food exports in 1990. Afterwards, successive governments reduced the number of products covered by bans, replacing some of them by export quotas, and allowed for larger export quotas. In 1996 export bans were limited to selected types of sunflower seeds, snails and skins, and finally completely removed in 1997. Export quotas were maintained for a range of products, such as maize and maize hybrids, raw sunflower oil, and common wheat, until 1997 and were finally removed in 1998. For exports of live animals, a regime of administrative licences on health grounds existed. According to the Romanian authorities, export restrictions were applied for food security reasons, to support domestic consumers and processors through the reduction of domestic prices, and to increase the utilisation of domestic food processing capacity. In fact, export restrictions were an integral part of the existing policy framework, which involved a complex system of interrelated controls and regulations, including producer price support, marketing margin controls, subsidies and rationing of foreign exchange. With price controls on basic food products backed by subsidies to processors, the concern of government officials was that, without export restrictions, subsidised products would be diverted to foreign markets (World Bank, 1994).

Table IV.24. **Non-tariff export measures for agricultural and food products, 1991-1998**

	Export Bans	Export Quotas	Quantity, tonnes
1991	Meat products	Live sheep	40 000 ¹
	Grains, dry beans, soybeans	Live cattle	40 000 ¹
	Milk and dairy products	Cattle skins and hides	8 000
	Sunflower oil	Sheep skins and hides	1 000
	Flour	Pig skins	2 000
	Sugar	Beef	5 000
	Concentrated feeds and their ingredients	Pork	26 000
		Edible offal	20 000
		Ham	5 000
		Tinned meat	10 000
		Crude-dried salami	2 000
		Tomato juice and tomato paste	15 000
	1992	Poultrymeat	Live sheep
Food grains: wheat, barley, maize, oats, rye, rice		Live cattle	40 000 ¹
Seeds: peas, beans, flax, sunflower and hemp		Pork	80 000
Milk, butter, powder milk		Edible offal	3 000
Vegetables: potatoes, onion, garlic and beans		Ham	3 000
Sunflower, soya and castor oil		Tinned meat	4 000
Flour		Crude-dried salami	2 500
Sugar		Cheeses	2 500
Concentrated feeds and their ingredients		Seeds: sunflower, soybeans and maize	14 000
		Tomato juice and tomato paste	100
		Tinned sterilised fruits and vegetables	1 000
1993		Hard wheat	
	Wheat for seeds		
	Other grains		
	Butter and other fat from milk		
1994	Common wheat and meslin for seed	Maize hybrids	9 115
	Other wheat (for consumption)	Sunflower seeds for sowing	230
	Maize hybrids for seed	Raw sunflower oil	15 000
	Other hybrids, maize		
	Maize (for consumption)		
	Sunflower seeds (for consumption)		
	Molasses from sugar beet processing		
1995	Sunflower seeds	Seed wheat and common wheat	500 500 ²
	Raw cattle and horse hides	Maize and maize hybrids	1 008 830
	Other animal hides	Sunflower for seeds	382
	Unprocessed wool	Raw sunflower oil	10 000
		Raw sheep skins and hides	315 000 ³
		Cattle hides	200 000 ⁴
		Sheep skins	185 000 ³
1996	Sunflower seeds for processing	Seed wheat and common wheat	1 510 000
	Snails, other than sea snails	Maize and maize hybrids	1 024 000
	Raw cattle and horse skins and hides	Sunflower seeds	2 000
	Treated skins	Raw sunflower oil	75 000
		Raw sheep skins and hides	320 000 ³
		Raw cattle hides	300 000 ⁴
		Sheep skins without hair	250 000 ³
		Raw wool	4 000
1997	All unilateral export bans lifted	Maize and maize hybrids	507 500
		Raw sunflower oil	100 000
		Common wheat	8 500
1998		All unilateral export quotas lifted	

1. Liveweight.

2. An initial quota which was reset later.

3. Pieces.

4. Square meters.

Source: Tesliuc, (1996b); OECD Secretariat.

In the framework of the ASAL agreement, all unilateral export bans were lifted in May 1997, and export quotas in January 1998. Export licensing, used previously to administer export restrictions, has been maintained for monitoring and statistical purposes only. Excepted are the cases concerning international agreements, such as voluntary export limitations on wine trade, or for live sheep and sheep meat exports within the preferential contingent agreed with the EU (see Part II).

From 1997, as permitted under its WTO commitments, Romania started to apply export subsidies to alleviate occasional surpluses on the domestic markets. A bumper maize crop in 1997 and a decline in domestic demand due to a fall in pig and poultry production left Romania with substantial maize surpluses. This led the government to introduce export subsidies of Lei 150 000/tonne (about US\$18/tonne) for one million tonnes of maize exported over the period December 1997-August 1998; in 1999 export subsidies for maize were maintained, in addition to this subsidies for wheat were introduced. As an emergency measure to alleviate oversupply on the domestic market caused, among other things, by cheap imports from Hungary, the government announced in March 1999 that it would allocate subsidies for pork and poultry exports. Export bonuses of Lei 4.3 million per tonne (about US\$290) were granted for pork for up to 20 000 tonnes, and for poultry at Lei 5.5 million per tonne (about US\$370) for up to 10 000 tonnes. However, quota fills appeared to be extremely low both for pork and poultry.

D. Reduction of input costs

1. Credit policies

Pre-reform period

Following the introduction of the farm enterprise self-financing mechanism at the beginning of the 1980s, direct budgetary support for agricultural enterprises was considerably reduced. This increased the role of credit in farm financing. However, in the centralised Romanian economy credit was simply another instrument of state financing of planned agricultural production. Irrespective of performance and credit-worthiness, producers received loans needed to carry out production plans. Credit risks were absorbed by the government, which resorted to regular write-offs of the banks' losses on agricultural loans. A major debt write-off took place in the second half of the 1980s. As a result, by 1988 all recognised bank losses had been covered using budgetary funds and government surpluses (World Bank, 1994). This action was driven by a substantial worsening of the financial condition of agricultural enterprises, evidenced by accumulation of bad debts and falling farm incomes (a large part of which were used to pay bank interest).

Bank interest rates were low and administratively fixed. In addition to the debt write-off, in 1987 the government reduced standard interest on short-term credit to agriculture. Moreover, interest on overdue short-term loans was brought down approximately to the level of the standard interest rate.

The state Bank for Agriculture and Food Industry (BAFI) was the single agency lending to the agriculture and food sector. Its role (as well as that of other banks) was limited to a simple transfer of funds according to administratively set credit plans and to collecting repayments. Such important banking functions as credit decision-making and risk-taking were practically non-existent.

Reform period

Finance and banking reform that started in the early 1990s, brought a substantial degree of freedom to the finance system. The Law on Banking Activity (1991) and further related legislation introduced a two-tier bank system with the National Bank of Romania (NBR) as a Central Bank; substantially broadened the autonomy and range of activities of the existing banks; allowed licensing of new private and foreign banks; liberalised interest rates.⁹

However, the development of market-based credit for the agricultural sector faced significant difficulties. Low profitability in agriculture, significant gaps in the legislative and institutional framework, as well as an unstable macroeconomic environment, made the agricultural lending highly risky. This substantially limited the supply of loanable funds from commercial sources and made their cost prohibitive for most potential agricultural borrowers. Thus, the state continued to be the major supplier of credit to the agro-food system.

Up to 1997, the government's credit policy was to support the state-controlled food production and distribution system. The latter represented a network of state owned (or majority-owned) farms, entities performing collection, storage, processing, distribution and retailing of agro-food products. *Preferential credits* were given to producers who supplied this system and to state agencies which purchased agro-food products for this system. With few exceptions, preferential credit was based on funds supplied by the government. The government made allocation decisions, set the effective price of credit and controlled its administration. Loan allocation procedures remained fundamentally unchanged, representing as before a simple administrative credit rationing; support of physical production rather than creditworthiness criteria guided this process. The state Banca Agricola (former BAFI) remained the principal agency for disbursement of preferential credit (Box IV.1).

Between 1992 and 1998, preferential credit consisted predominantly of short-term loans, with medium and long-term loans comprising a small fraction of the total. From three to eight government decisions came out each year authorising specific preferential credit lines, in most cases on an *ad hoc* or emergency basis.

Table IV.25. **Annual preferential credit allocations to agro-food sector, billion Lei**

	1992	1993	1994	1995	1996	1997	1998	1999p
Total preferential credit to agro-food sector	234	941	2 824	2 741	4 390	977	700	652
Short-term credit, total	228	905	2 728	2 550	4 160	977	700	600
Planting and harvesting loans	176	320	845	841	1 959	477	700	n.a.
Loans to livestock producers ¹	25	10	–	–	–	–	–	n.a.
Purchase loans	27	575	1 883	1 709	2 201	500	–	–
Investment credit, total	6	36	96	191	230	–	–	52
Machinery and construction loans	6	15	–	–	10	–	–	52
Loans from State Ownership Fund		21	96	191	220	–	–	–
Preferential credit to agro-food sector as per cent of GAO	11	13	17	12	12	1.2	0.7	n.a.
Preferential credit to agro-food sector as per cent of GDP	4	5	6	4	4	0.4	0.2	0.1

p Provisional.

n.a. Not available.

1. Credit to livestock producers for purchase of feeds, fuel, electricity and medicines. Pig and poultry complexes were the major recipients of these funds. In 1993-1997 credit to livestock complexes was part of purchase loans. In 1999 livestock producers received credit from the Revolving Fund.

Source: Ministry of Agriculture and Food; Tesliuc, (1996a); World Bank (1994).

• Preferential short-term credit

Short-term loans accounted for 93% to 97% of total preferential credit disbursements in 1992-1996. Two major types of preferential short-term credit were in place after the start of reform: i) planting and harvesting loans, and ii) purchase loans.

Planting and harvesting loans were introduced in 1992 as a major producer support measure. This was driven by the government's concern about the decline in agricultural output. It was considered important to provide low-cost seasonal credit to the sector in order to prevent negative developments in food supply. Institutional borrowers (state farms and private associations with legal status) were able to borrow directly from the banks. To individual producers and associations without legal status, credit was channelled via purchasing agencies. Through this procedure, purchasing agencies received credit, which they used to cover the cost of agricultural inputs (mainly seeds, fuel and fertilisers) or services (mechanical support) that they delivered to private producers at planting/harvesting time. This was actually a standardised in-kind advance, covering approximately 50% of the working capital calculated to produce the contracted amount of output. Producers in turn had to deliver a specified share of output to the "supplying" integrators. Such a system linked together credit flow, input supply and output delivery, with credit cost and input and output prices being administratively set. This "cycle" effectively tied individual producers to a state-controlled system of production and distribution and impeded the development of

Box IV.1. Banca Agricola and its role in providing credit to the agro-food system

The bank was established in 1948, initially with the responsibility to serve the agricultural sector, and later also the food industry. In 1958 the bank acquired the name of the Bank for Agriculture and Food Industry (BAFI). By 1989, BAFI was the second largest among the four existing Romanian banks (the others were the National Bank of Romania, Romanian Bank for Foreign Trade, and Investment Bank). BAFI had a developed regional network with headquarters in Bucharest, 41 county offices and 81 local agencies.

In December 1990, BAFI received the status of a "joint stock company fully owned by the state" and was renamed Banca Agricola (BA). Following the Bank's privatisation strategy, issues of its shares were created and traded at the Romanian Stock Exchange. Currently, 56% of BA's stock capital belongs to the State Ownership Fund, 28% to five state-affiliated investment funds, and the remaining 16% is in the hands of other investors, including private ones.

The 1991 Law on Banking Activity granted BA the status of a universal bank, which allowed it to perform all banking activities authorised in Romania. Since the beginning of the 1990s, the Bank had diversified out of lending to the agro-food sector, with the share of loans to agriculture and the food industry in total portfolio falling from about 50% at the end of 1991 to 35% at the end of 1998. However, BA continues to be the largest agro-food lender.

Between 1992 and 1996, BA was the principal banking institution implementing the government's agricultural credit programmes. Between 80% and 90% of total government preferential credit to the agro-food sector was channelled through BA. The virtual collapse of the Bank that led to its restructuring at the beginning of 1997, is largely linked with this activity. Preferential credit accounted for the major part of BA's agricultural portfolio (Box Table IV.1.1). Policy dictated allocation of these funds predominantly to state-owned entities, thus creating a high exposure of the Bank to low- or non-creditworthy borrowers. It should be stressed, however that not only heavy involvement in preferential credit, but the inadequate quality of BA's other loans also contributed to the Bank's difficulties.

Box Table IV.1.1. Banca Agricola outstanding credit to agro-food sector: total and preferential lending, billion lei

As of December 31	Agricultural credit outstanding		Credit to Romcereal ¹		Credit to other 9 largest borrowers ²	
	total	of which preferential credit	total	of which preferential credit	total	of which preferential credit
1994	3 608	1 842	846	727	319	220
1995	4 579	2 119	1 075	930	958	323
1996	5 405	3 393	409	366	676	465

1. NAAP in 1996.

2. Pig and poultry complexes and oil mills.

Source: Banca Agricola.

In 1996, financial losses in the BA agricultural portfolio amounted to Lei 1 110 billion, of which Lei 480 billion accrued in the current year. By end-1996 (before the 1997 restructuring), "loss" and "doubtful loans" represented in sum 71% of the whole agricultural portfolio, while standard credits accounted for only 4% (Box Table IV.1.2). In July 1997, the government had to initiate a fundamental restructuring programme for BA.

Box Table IV.1.2. Condition of Banca Agricola agricultural portfolio, per cent

	1994	1995	1996
Standard loans	40	25	4
Loans under observation	25	29	14
Below-standard loans	12	19	11
Doubtful loans	9	14	20
Loss loans	14	13	51
Total agricultural portfolio	100	100	100

Source: Banca Agricola.

Box IV.1. Banca Agricola and its role in providing credit to the agro-food system (cont.)

The main component of the programme was the partial take over of BA's "loss loans" by the government, which had been nearly completed by the beginning of 2000. Other components of BA's restructuring programme are: upgrading and streamlining of the organisational structure, the closure of 61 the Bank's branches and staff reduction by almost one third; launching of new lending products; implementation of information technology programmes in the branch offices; diversification from the agro-food sector into industry, services and personal sectors. The final goal of the restructuring program is the Bank's full privatisation, which is to take place in the year 2000.

private credit and marketing systems. The importance of planting and harvesting loans in total short-term preferential credit allocated varied during the 1990s, falling from 77% in 1992 to 31% in 1994, and then rising to 100% in 1998 (when loans to purchasing agencies were discontinued).

Purchase loans were designated to provide working capital to targeted agro-food agents. These included state-mandated agencies purchasing agricultural and food products (Romcereal/NAAP, Semrom, Unisem, food storages). State pig and poultry complexes also received these loans for purchase of feeds. Feed mills, which received these loans for purchase of grains and other raw materials, were the third major type of recipients. Purchase loans attracted 12% of short-term preferential credit allocated in 1992; this share jumped to over 60% in 1993-1995, but was reduced to 53% and 51% in 1996 and 1997 respectively. As of 1998, purchase loans were discontinued.

- Preferential investment credit

Investment loans (medium and long-term) represented less than 3% to 7% of total preferential credit disbursements in 1992-1996. Several types of investment credit existed: *i*) five year loans for purchase of agricultural machinery; *ii*) farm construction and land improvement loans, and *iii*) rehabilitation and restructuring loans from the State Ownership Fund (SOF).

The introduction of *machinery loans* was an attempt to address the problem of substantial de-capitalisation of agriculture. This programme also targeted easier access to production assets for individual landowners. According to this scheme, credit was granted to private farmers for purchase of domestically produced machinery on five year repayment terms with one year of grace and a 15% down payment. The preferential scheme provided that up to 70% of the commercial interest rate charged to final borrowers would be compensated from the state budget. In addition to machinery, loans for purchases of livestock were included. The first machinery loan programme was launched in 1992, with renewals in 1993, 1995 and in 1999-2000.

Farm construction and land improvement loans were introduced in 1993, but this programme was of minor importance.

Rehabilitation and restructuring loans from the SOF are part of a broader programme of this agency for structural adjustment and privatisation of state enterprises. SOF is responsible for the selection of state-owned companies for privatisation, design of privatisation projects and co-financing of related investments. In 1993-1996 SOF's activities also included projects for the rehabilitation of state enterprises. In the agro-food sector, SOF financed projects of rehabilitation and restructuring of 38 state pig and poultry complexes, under which these units received zero-interest long-term credit to be repaid out of future profits.

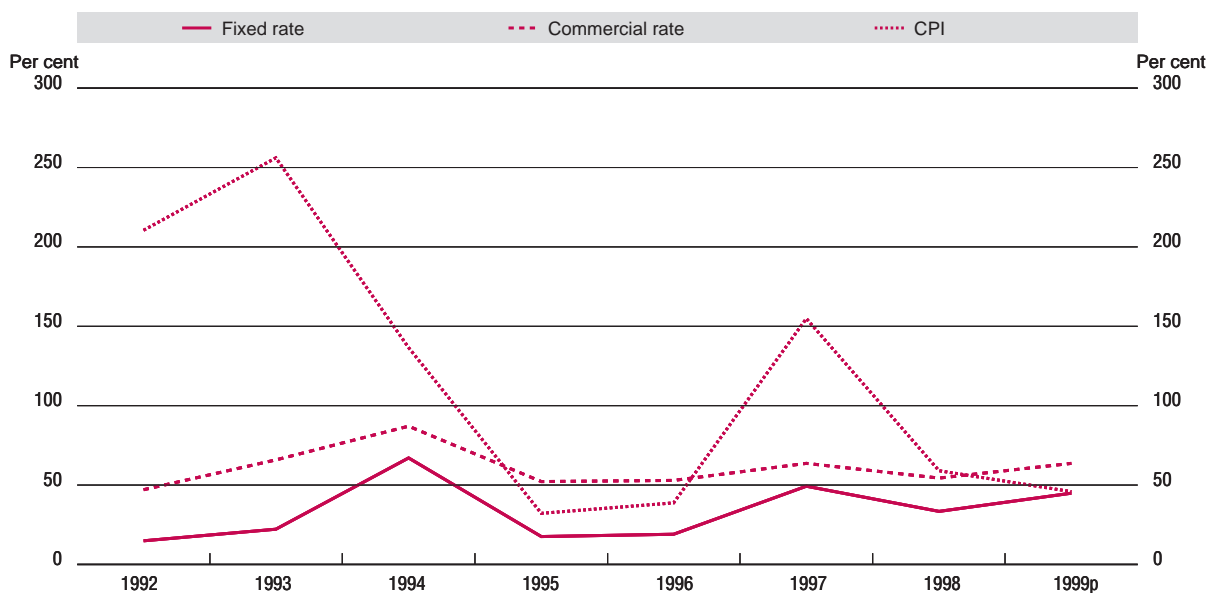
- Economic costs and transfers associated with preferential credit

Funds for preferential credit were provided from various sources, but with minor exceptions they were government-related. In 1992-1996 NBR directed credit served as a principal source for such funds, its share ranging from 31% to 92% of total credit lines to agro-food sector during this period. At the end of

1995 and 1996, directed credit represented about one half of the entire refinancing done by the NBR. It was used primarily to finance the agro-food and energy sectors, with more than 80% of these funds in 1995 and 1996 directed to agro-food sector (OECD, 1998a). However, since 1997 NBR directed credit had been stopped, which was one of the principal measures of the government's programme for macroeconomic stabilisation. Starting from 1994, the state budget also served as a source for preferential credit funds. Additional resources were raised through extra-budgetary funds (Supplementary Pension Fund) and other public institutions (*e.g.* State Ownership Fund). Commercial funds played a minor role in total resources for preferential credit.

Preferential credit was delivered to financial intermediaries and final borrowers at a very low cost, particularly in the early reform period, when even compared to low average interest rates (negative in real terms up to 1994) those for the agro-food sector were substantially decreased (Graph IV.6). This involved three basic elements: *i*) discount or zero based interest on government funds transferred to intermediary banks; *ii*) margin limits for banks performing on-lending of preferential credit to final borrowers; *iii*) limits on interest rates to final borrowers.

Graph IV.6. Fixed interest rates under preferential short-term credit, commercial rates and CPI



Note: Fixed and commercial interest rates are annual averages based on monthly rates weighted by the monthly amount of outstanding preferential credit to agro-food sector.

Source: OECD Secretariat.

In summary, a wide array of preferential credit schemes based on different combinations of these three elements were applied during 1992-1999.¹⁰ Limits on bank margins and on the final borrower's interest rate were in place throughout this period, although their levels varied. A preferential refinancing component was included in credit lines drawn on NBR refinancing facilities. Thus, in 1993 the average NBR rate on directed credit to the agro-food sector was 17%, compared with the average inter-bank lending rate of 69%; in 1994, 1995 and 1996 the respective rates were 66% and 93%, 40% and 49%, 35% and 54%. In addition to this, low-cost credit resources were drawn from the budget or extra-budgetary funds (which as a rule were allocated to intermediary banks at a zero interest rate). However, in some cases preferential credit funds were raised from commercial sources. The final borrower's rate of interest was limited in

two ways: *i*) by setting a low fixed rate; *ii*) by compensating part of it (in cases when no limits were imposed and loans were given at commercial interest rates). In 1993-1999 the final borrowers' fixed interest rates were between one third and three fourths of the commercial lending rate. Under the credit schemes which implied commercial rates for the final borrowers, the compensation of interest was set at 60% for short-term loans and 70% for long-term loans.

Between 72% and 88% of preferential credit was channelled to state entities (state farms and purchasing agencies). Very poor collection rates on preferential credit were registered, indicating considerable misallocation of credit resources. As in the pre-reform period, the government resorted to regular rescheduling and write-offs of state farms' and purchasing agencies' debts. Following the large scale write off/rescheduling at the end of the 1980s, debt forgiveness was granted in 1990 and 1991 (World Bank, 1994), in 1995 (Lei 101.4 billion to the SOF), and in 1996 (nearly Lei 928 billion rescheduled for 1997 and 1998) (Tesliuc, 1996*a*). In 1997, a Lei 1 000 billion debt was restructured to NAAP. However, this had limited effects and in 1997 a liquidation of major debtors started. The state-owned Banca Agricola, which handled the lion's share of total preferential credit, was on the verge of collapse by the beginning of 1997 and had to undergo a profound restructuring programme (Box. IV.1).

The system of preferential credit created considerable implicit and explicit transfers to the agro-food sector. Implicit transfers resulted from the difference between the market and low fixed preferential interest rates and also from debt forgiveness. Direct interest rate compensation represented explicit transfers. Table IV.26 presents the estimated total amount of transfers associated with preferential interest rates and debt forgiveness. The significance of these transfers as measured by their share of GAO and GDP grew from 1992, peaking in 1996 at nearly 2% of GDP. The substantial reduction in preferential credit (see below) led to a sharp drop in this share towards 1999.

Table IV.26. **Estimated transfers to agro-food sector associated with preferential interest rates and debt forgiveness, billion Lei**

	1992	1993	1994	1995	1996	1997	1998	1999 ^p
Total transfers	28	106	333	656	1 987	1 478	92	191
<i>of which:</i>								
From fixed interest rates	28	106	216	386	734	43	66	49
From interest rate compensation	–	–	117	169	325	435	26	143
From principal debt restructuring	n.a.	n.a.	n.a.	101	928	1 000	–	–
Total transfers as per cent of GAO	1.3	1.4	2.0	2.8	5.6	1.9	0.1	n.a.
Total transfers as per cent of GDP	0.5	0.5	0.7	0.9	1.8	0.6	0.03	0.04

^p Provisional.

n.a. Not available

Source: OECD Secretariat's calculations based on World Bank (1994), Tesliuc (1996*a*), National Bank of Romania and Ministry of Agriculture and Food data.

The preferential credit policy that existed in 1992-1996 was highly distortive. Moreover, being largely backed by money emissions, it had grave macroeconomic implications. At the end of 1996, the new government substantially reconsidered its credit support policy, which together with price liberalisation was a principal element of agricultural policy reform. This included: *i*) substantial reduction of funds allocated to preferential credit; *ii*) resort to non-inflationary sources of credit funds; *iii*) increase in the number of intermediary banks; and *iv*) delegating credit risks and decision-making to intermediary banks.

Between 1997 and 1999 preferential credit was limited mainly to short-term credit for planting and harvesting and loans to livestock producers. To this end, the government created a Revolving Fund, which functioned according to the principles outlined above. Purchase loans stopped, although in 1997 the government created a temporary Wheat Fund providing easy loans to downstream agents for wheat purchases (see Part IV, section B). Another principal change in policy was a substantial re-focusing from credit to the large-scale sector, to direct input grants to small-scale individual producers (see Part IV, section D).

- Credit to small-scale producers

With about 85% of agricultural land transferred into private hands in the course of land reform, the agricultural production structure was radically transformed. The small-scale producer had become its major element. The structure of demand for agricultural credit changed considerably, necessitating serious adjustments of the existing agricultural credit system and the development of new structures able to serve the credit needs of small-scale producers.

At present, a number of formal arrangements are in place to provide production credit to small individual borrowers. There exists a rural co-operative system, consisting of 700 to 800 active co-operatives with the CREDITCOOP as their nation-wide association (Vogel and Adams, 1996). Co-operatives belonging to this system normally combine consumer and credit co-operation functions; the latter also includes some production lending. In addition to this, individuals are formally eligible for state preferential credits. According to the legislation, purchasing agencies can advance inputs or money to small-scale producers who conclude delivery contracts with these agencies. Another activity related to small-scale borrowers consists of the loan guarantees facilitating access of such borrowers to commercial bank lending. Thus, in August 1994 a Rural Credit Guarantee Fund (RCGF) was set up, with 90% of its start-up capital coming from an EC grant. The RCGF was designed to stimulate lending to small and medium-sized farms and agro-business firms by guaranteeing a partial payment of loan recovery risks. A Romanian Loan Guarantee Fund for Private Entrepreneurs (also created in 1994) extends some credit guarantees to small private farmers.

In practice, during most of the period since the start of transition, small-scale producers have operated with no or minimal use of credit. According to the joint farm survey by MoAF, EC and the World Bank in December 1996, only about 23% of family (informal) associations took out borrowings. Among individual household farms only 10% resorted to borrowings at all, and only less than one half of them borrowed from banks (MoAF, 1997). Low borrowing activity of small-scale producers can be partly related to the fact that many of them are oriented towards a simple subsistence production with minimal use of inputs. However, important also is the fact that the existing formal credit facilities are not adequate to meet the needs of small-farmers. Thus, rural credit co-operatives, experiencing shortages of loanable funds, are not able to supply loans in good time or amounts requested (Vogel and Adams, 1996). The access of small-scale producers to advances from purchasing agencies is likely very limited, as the bulk of these funds is allocated to institutional borrowers (some small farmers are even reportedly unaware of such a facility). Credit guarantees have had little impact due to the overall disincentives for agricultural lending as well as the difficulties the traditional banking system experiences in dealing with small-scale clientele. Therefore, small producers rely predominantly on auto-financing or on informal credit (relatives, other persons, financial self-help groups, and rarely, trader credit).

A voucher programme launched in 1997 was an attempt to improve financing for small producers through a budgetary subsidy. However, this is an intermediary instrument, fulfilling mainly a social protection function (see Part IV, section D). Over the longer-term the problem is to be addressed by development of commercial and co-operative credit for small farmers and possibly also non-traditional financing practices. Any new system of credit for small producers should be able to meet the complex needs of rural borrowers. Thus, it should be viewed as rural rather than agricultural credit and become a core element of integrated rural development programmes. Until recently the government's credit policies barely addressed this problem, but it remains one of the major challenges of agricultural development in Romania.

2. *Input subsidies*

Pre-reform period

Input subsidies accounted for about one third of budgetary transfers to the agro-food sector before 1991 (Table IV.27). From 60% to 73% of the total amount was spent to cover *plant protection* costs in state farms and agricultural co-operatives. The *animal breeding* subsidy was the next important item. In addition to these general subsidies, agricultural co-operatives received special allocations for land reclamation.

Table IV.27. **Composition of input subsidy in 1986-1990, per cent**

	1986	1987	1988	1989	1990
Total input subsidy	100	100	100	100	100
<i>of which:</i>					
Plant protection	73	72	70	60	70
Land reclamation	5	4	5	0	3
Seeds	6	6	6	0	5
Pastures	0.1	0.4	0.2	0.0	0.5
Animal breeding	14	15	16	38	19
Other	2	2	3	2	2
Input subsidy as per cent of total budget transfers to agro-food sector	36	37	37	24	33

Source: Ministry of Agriculture and Food.

They also benefited from lower prices for seeds (with the differential covered from the national budget). A small share of input subsidies went for maintenance and reclamation of pastures used by the rural population for individual grazing. Other expenditures covered flood and soil erosion control, specific land reclamation projects, and certified materials for fruit trees.

Reform period

Rapid growth in input costs and the decline in output that occurred in the early reform period, led the government to introduce a set of direct aids to ease cash flow pressures and to support current production operations. Most input subsidies existing before 1997 were built into the state-controlled system of production and marketing, meaning that only producers delivering to this system were eligible. As a result, state farms and private large-scale producers became the major beneficiaries of input support. In 1997, a major shift in input support policy occurred. The previous subsidies (fertiliser, seed, imported feeds) were phased out, and the bulk of input subsidies was redirected to small-scale producers under the so-called voucher programme. Under this programme, individual small-scale landowners became the principal beneficiaries of input support.

The input subsidy accounted for roughly one third of total budget transfers before 1997 (except in 1994 when it exceeded 50%), but in 1997-1999 it became the major component of the budget support for the agro-food sector, reaching over one half of the total (Table IV.28).

 Table IV.28. **Composition of input subsidy in 1991-1999**

	1991	1992	1993	1994	1995	1996	1997	1998	1999p
Total input subsidies, billion Lei	16	77	167	761	513	938	2 427	3 729	3 452
<i>of which in per cent:</i>									
Fertilisers	30	60	15	17	35	22	8	–	–
Pesticide subsidy	4	7	1	–	–	–	–	–	–
Land reclamation	32	11	27	14	30	22	11	10	14
Seeds	–	–	–	–	–	17	6	3	8
Plant protection services and materials	11	5	5	7	19	8	4	3	4
Imported feeds	–	7	13	15	7	3	–	–	–
Veterinary services and medicines	11	4	2	1	1	1	1	1	2
Capital grants and reduction of fixed inputs cost	12	6	6	3	8	5	2	4	5
Voucher allocations	–	–	–	–	–	–	55	73	75
Other subsidies	0	0	31	43	0	22	13	6	3
Input subsidy as per cent of total budgetary transfers to agro-food sector	36	30	31	57	24	37	50	70	65

Source: Ministry of Agriculture and Food.

As in the pre-reform period, input subsidies were strongly focused on land improvement and crop production. Thus, from 39% to 84% of total input subsidies in 1991-1996 were directed to land reclamation, fertiliser, pesticide, seed and plant protection subsidies. These items remained most important in 1997-1999 when the bulk of total input subsidies were allocated to the voucher programme and were spent for crop production (Box IV.2.). The *fertiliser subsidy* was allocated to producers of wheat, sugar beet, sunflower, flax and hemp, potatoes and seed maize who concluded delivery contracts with state purchasing agencies. To be eligible, the producer was to deliver at least 40% of food and 60% of seed wheat output, 90% of seed maize and 80% of other crops. State contractors distributed free fertilisers (a fixed amount per hectare) to eligible producers at planting and harvesting time. This was of particular importance in the period of serious fertiliser shortages when, by contracting with the state purchasing agencies, producers could more easily have access to fertiliser. The *seed subsidy* was introduced in 1995, applying the same eligibility criteria as the fertiliser subsidy. Initially the seed subsidy partially covered the cost of certified seeds (maize, barley, flax and hemp) to the crop farmers, but since 1997 funds have been allocated to seed producers, who are to sell seeds at a fixed price (negotiated with the Ministry of Agriculture and Food). The *land reclamation subsidy* covers the costs of operation and maintenance of land reclamation systems.

Input support for the livestock sector was concentrated mainly on the reduction of feed costs for state complexes and animal health measures. A subsidy for *imported feeds* was introduced as a reaction to the decline in livestock production at the beginning of the 1990s. To ease access of producers to feeds the government resorted to barley and maize imports. Pig and poultry complexes received government-imported feeds at prices below their actual cost, with the difference compensated from the budget. The *cattle breeding* subsidy was an additional attempt to revitalise the sector by providing per head payments to all types of producers raising cattle. Traditionally, the government compensated part of the costs of veterinary services and medicines.

The share of capital grants in total input subsidies fell from 12% in 1991 to 2% in 1997, and increased to 5% in 1999.

In the initial reform period, implicit input subsidies were also important. Due to state controls, prices for fertilisers were limited until 1997. Also, agricultural producers enjoyed a gasoline tax exemption. Producers delivering to state purchasing agencies were eligible for additional tax exemptions and, in the case of sales to state elevators or milling and feed plants, they received low-priced feed. Several trade measures introduced in 1993 also related to reduction in agricultural input prices. Thus, imported components for concentrated feeds, insecticides and fungicides, veterinary medicines, tractors and agricultural machinery are exempt from import tariffs and VAT.

- Voucher programme

In 1997-1999 the voucher programme was the largest component of the budgetary support to agro-food sector, reaching respectively 28% of it in 1997, 51% in 1998 and 42% in 1999. This programme was prompted by serious setbacks of the previous strategy favouring large-scale, mostly state-owned farms. The private sector, particularly the part represented by individual producers, remained largely excluded from government support, operating with minimum recourse to finance and input markets. The voucher programme was targeted to widen finance/input inflows into the small-scale private sector and at the same time to stimulate development of private supply of inputs and services for this group of producers. It was foreseen to maintain the programme over a period of three to five years to ensure critical support to the development of rural input markets (Lazaroiu, Luca and Tesliuc, 1998).

According to the procedure applied in 1997-1999, small landowners were made eligible for a certain number of vouchers with which they could purchase agricultural inputs. Input suppliers were to accept these vouchers and redeem them at government-authorised banks. The cost of voucher redemption was fully covered by the state budget (see Box IV.2 for more programme details).

An assessment of the results of the voucher scheme in 1997-1999 is rather difficult due to lack of consistent information on the programme's performance. The programme had likely positive implications for private input suppliers, due to the fact that it created additional demand for agricultural inputs

and at the same time decoupled this demand from traditional supply channels. Individual landowners benefited from this programme and when interviewed, expressed support for it. The 1997 voucher programme survey stated that in the autumn of 1997 vouchers helped to finance 36% of the total cost of agricultural works undertaken by the producers sampled (Lazaroiu, Luca and Tesliuc, 1998); according to MoAF estimates, this share declined to 5% for the whole of 1999. An EU-PHARE project that studied the impact of different policy instruments on Romanian farms, including the voucher programme, showed that it had a visible income-supporting effect on individual household farms (EC, 1998a). The policy helped small landowners to increase their output, mostly for household consumption. Thus, the voucher programme had a poverty alleviation impact and clearly featured elements of social policy. However, as the major item of the state agricultural budget, the programme needs careful assessment as to what extent it went beyond social assistance and contributed to the increased economic viability of small-scale producers and their integration to the market.

Box IV.2. Voucher programme in 1997-1998

The programme was designed by the MoAF with the technical assistance of the World Bank and was first implemented in the fall of 1997. Under the programme, vouchers were distributed free of charge to all landowners, according to the area owned, with a minimum limit of 0.5 hectares and a maximum limit of 6 hectares. Each voucher was worth Lei 127 360, or about US\$16 (over the period when vouchers were disbursed). The vouchers were distributed through the Romanian Postal Service. In total, 4.4 million qualifying landowners (or their heirs) received 10.6 million vouchers, which they could use to pay for agricultural inputs, such as certified seeds and sowing material, fertilisers, pesticides, fuel and mechanical operations. Landowners were free to choose input suppliers. The latter, who collected vouchers as payment for inputs delivered, could convert them into cash at authorised banks.

The programme was continued in 1998, but with wider eligibility criteria. Thus, the previous upper area limit of 6 hectares was raised to 10 hectares. Institutional entities were also added to the list of beneficiaries, such as education and religious organisations (which could receive up to ten vouchers), as well as so-called "locators" (see Part III). In addition to these changes, a range of inputs that could be paid with vouchers was widened to veterinary medicaments.

A survey of 430 households and 50 associations carried out in 1997 at MoAF's initiative and supported by the World Bank (WB, 1998), showed that the distribution and use of vouchers followed the intended patterns. Nearly 99% of landowners questioned (all of whom qualified for the programme), received vouchers. About 1.2% of the total number of vouchers received were sold, 0.4% were given away (*e.g.* to relatives), and 1.1% were not utilised, these three categories totalling nearly 3% of the total number of vouchers transferred to the surveyed landowners. Of the remaining 97%, 84% were used directly by the recipients to buy inputs (Box Table IV.2.1.), while 13% were transferred to associations and tenants.

Box Table IV.2.1. Use of distributed vouchers in 1997

	Per cent
Total number of vouchers distributed	100
Vouchers used directly by landowners <i>of which for purchase of:</i>	84
Fertilisers	38
Seeds	7
Pesticides	1
Fuel	16
Mechanical services	22
Vouchers transferred to:	13
Associations	9
Tenants	4
Other uses ¹	3

1. Sold, given away, not used.

Box IV.2. **Voucher programme in 1997-1998** (cont.)

The same study showed that voucher holders used various channels to purchase inputs. However, except for fertilisers, traditional channels (Semrom/Unisem, Comcereals/Cerealcoms, Agromecs) prevailed for other types of inputs. (Box Table IV.2.2).

Box Table IV.2.2. **Importance of various channels in purchasing inputs for vouchers in 1997**

	Per cent
Fertilisers:	100
Manufacturers	15
Semrom/Unisem	7
Comcereal/Cerealcom	18
Village shops	8
Salesmen	17
Other	35
Seeds:	100
Semrom/Unisem	66
Comcereal/Cerealcom	16
Other	18
Mechanical services:	100
Agromecs	58
Private tractor operators	25
Informal association/landholding company	13
Other	4
Fuel:	100
PECO stations	97
Other	3
Other	3

Source: Lazaroiu, Luca and Tesliuc, 1998.

Starting in 2000, the programme procedure will incorporate significant changes. Vouchers will be distributed to land users as opposed to land owners as before. This means that farmers' associations, private commercial companies and any tenants of agricultural land with legal land leasing contracts, become eligible for vouchers in addition to individual landowners. Another change is that the number of vouchers given is differentiated by farming activity (the approximate value of one voucher being Lei 100 000): 5 vouchers per hectare of arable land (in order to support sugar beet production, this norm is brought up to 10 vouchers per hectare of sugar beet plantings), 12 vouchers per hectare of vineyard and orchard land and 4 vouchers per head of cow or buffalo cow. The changes in the programme entail considerable complications in implementation, including the identification of actual land users, collection and approval of applications from the potential beneficiaries, control over the use of vouchers according to the established purpose, etc. All this suggests a substantial bureaucratisation of the programme and strengthens the arguments for its discontinuation.

3. Tax concessions

Pre-reform period

Under the previous regime, agricultural producers were covered by the following taxes which applied to all economic sectors: *i*) payments to the budget from the enterprise benefit fund (consolidation to the state budget of all revenues in excess of the normative level); *ii*) tax on commodity turnover;

iii) contributions into the state and peasant social insurance systems; iv) contributions for supplementary pensions (for physical persons employed in state enterprises); v) employees' contributions (the so-called social parts) for economic development of an enterprise (applied to persons employed in both state and co-operative farms); vi) employees' contributions (in cash or in the form of social work) to the local budgets. Individual producers had to pay tax on agricultural income.

Reform period

The new tax system was established after the start of the reform. The following general taxes are levied on agro-food producers:

- profit tax, applied to legal entities only;
- salary tax, replaced by “global income tax” starting in 2000;
- real estate tax;
- value-added tax, which replaced the previous commodity turnover tax in January 1993;
- public roads and vehicle taxes;
- excise tax, levied on specific goods (regarding agro-food products this applies to alcoholic beverages, coffee, tobacco products).

The new tax structure also includes contributions to the unemployment fund, medical insurance systems, supplementary pension payments, payments to state social insurance system (for workers of state farms) and payments to the peasants' social insurance system (for persons working in agricultural associations and household farms).

In addition to these general taxes levied on agricultural producers, an “agricultural tax” was introduced in 1994, following the land reform in Romania. It is levied on physical persons who are the holders of agricultural land (owners and other land users having formal land certificates); this tax is also applied to legal entities not eligible for profit tax (*e.g.* public and religious institutions holding agricultural land). The tax rates are set as absolute per hectare values, differentiated by types of lands and fertility zones.

Agricultural producers enjoy various concessions under the new tax system. Thus, until the year 2000 entities receiving at least 80% of their income from agricultural activities were eligible for a 25% *profit tax* rate compared to the 38% rate levied on non-agricultural payers (starting from 2000, the profit tax rate for non-agricultural payers was also brought down to 25%). A five year holiday on this tax is granted to newly set up legal entities established in the agricultural sector.

Starting from 1997, eligible payers are free from *agricultural tax* until the year 2001. *Real estate tax* on structures used in agricultural production is also subject to a 50% cut.

A special *value added tax* treatment applies to the agro-food sector. First, output of individual households and their associations is exempt from VAT; the exemption applies also to the rental of land, buildings and equipment for agricultural use. Until January 1995, a number of processed food products (meat, fluid and powder milk, butter, sunflower oil) were exempt from VAT. Between 1995 and early 1998 zero VAT was maintained only for bread, wheat and barley, with a 9% rate (compared to a standard rate of 18%) applied to some other important food and agricultural products. At the beginning of 1998, the VAT rate for all agro-food products was increased to 11% (with the standard rate brought up to 22%) and all previous exemptions removed; at the beginning of 2000 the VAT rate was equalised for all products (food and non-food) and set at the level of 19%. Exemption from VAT (introduced in 1993) is currently maintained only for a number of imported agricultural inputs.

E. Infrastructural measures

1. Research and development

Pre-reform period

The first official agricultural research institute (the Romanian Agricultural Research Institute) was set up in the period between the two world wars. After World War II, it was split up into several sections, each

section was moved to a new location and renamed. What was left of the old institute was reorganised into the Institute for Horticultural and Wine Growing Research.

At the end of the 1960s, the agricultural research system went through another reorganisation. The Academy for Agricultural and Forestry Sciences (AAFS) was founded. It had six sections: *i*) crops; *ii*) horticulture, wine growing, and agricultural processing; *iii*) animal breeding and veterinary science; *iv*) forestry; *v*) soil science, land reclamation, water management and mechanisation; and *vi*) agricultural economics and organisation of socialist agricultural enterprises. Each section supervised one or several research institutes in its field. The AAFS was responsible for the scientific co-ordination of the agricultural research units, whereas the Ministry of Agriculture and Food (MoAF) defined research issues and funded research programmes.

In the 1970s, the conditions for agricultural research were favourable in terms of setting up research units, making investments, hiring highly skilled specialists and undertaking research in various fields. During this period, agricultural research benefited from substantial budgetary funding and a dense network of R&D institutes and experimental stations developing. At the end of the 1980s, around 92 agricultural research institutions and stations existed, representing more than 25% of the total research network in Romania. These institutions and stations employed between 7 000 and 8 000 university graduates, which corresponded to around 12% of the total number of the employees with university degrees in R&D units.

Reform period

The structure of the Romanian agricultural research network did not change significantly after 1989. The Academy for Agricultural and Forestry Sciences (AAFS) is still the leading co-ordinating institution for agricultural R&D. In 1998, some 29 000 people were employed in Romanian agricultural research, of which 20% were university graduates. Currently, the AAFS directs and finances 39 research institutes and central stations and 74 local experimental stations. Moreover, there are research units co-ordinated by the AAFS, but not subordinated to the MAF, such as: the Research Institute for Meteorology and Hydrology; the Research Institute for Environmental Engineering; the Research Institute for the Danube Delta; and the Forestry Research Institute. These four institutes are all subordinated to the Ministry of Water, Forests and Environmental Protection.

Some agricultural research is carried out by universities and agricultural high schools. Previously, agricultural universities performed few research activities. But since the reform they have intensified relations with foreign institutes involved in similar activities. Some of these activities are supported by specialised western programmes such as TEMPUS, PHARE, and LEONARDO. These programmes involve students and teachers in joint international research projects, providing the Romanian counterpart with new equipment, access to specialised literature and facilities for visits abroad. In recent years private agricultural research has been developing, generally, as part of the activities of multinational companies involved in pesticides and seed industries.

At present, the financial situation of the public agricultural research system is highly problematic. Agricultural research institutions are still considerably dependent on public funds. Many of them combine both research and production functions. Thus, the research units, either subordinated to or co-ordinated by the AAFS, hold a land area of about 100 000 hectares, 16 000 heads of cattle, 20 000 sheep, 260 000 pigs and 400 000 poultry. Earnings from production currently represent an important financial support for these institutions, including for their research activities.

In order to re-orient agri-food research according to the new situation of the agricultural sector, the AAFS identified new priority issues for research, among which are: *i*) increase in efficiency of small and medium-size producers; *ii*) sustainable development of agriculture; *iii*) growth in international competitiveness of the Romanian food sector. Concerning the functions of research institutions, it was considered important to develop their marketing and extension activities with particular emphasis on the needs of private producers. Some changes in the research financing mechanism were introduced. Until 1994, the MoAF was the funding body for agricultural research, but as of 1994 this function was transferred to the Ministry of Research and Technology, which channels funds through the AAFS. As from 1999, the Ministry

of Research and Technology started implementing new funding procedures, allocating projects with their respective funding to the research units on a competitive basis.

2. Extension

Pre-reform period

Development and extension activities were carried out directly by the research institutes and stations. The results of research were implemented first in the state agricultural enterprises, which were generally better equipped with inputs, machinery, irrigation facilities and skilled personnel than agricultural co-operatives. Quite often state farms had demonstration plots. No specialised extension networks existed.

Reform period

Many new small farmers with little agricultural education are currently engaged in farming in Romania. A system of training, education and advice had to be created for those who had little or no management and farming experience. Some research institutes adapted to the new conditions and started specialised extension activities aiming to pass on and help implement their results.

However, the first step towards an extensive, coherent and institutionalised extension system was undertaken by the MoAF, through its county General Directorates for Agriculture and Food. One or two persons from the staff of these Directorates were responsible for extension activities. At the commune level, the MoAF had Agricultural Chambers where several agricultural specialists were employed. These employees were specialised in horticulture, animal husbandry, agricultural mechanisation, or land reclamation, depending on local needs. In 1997 and 1998 there were several PHARE-funded programmes which dealt with the establishment of an official national extension network. Partly as a result of these programmes, the Romanian government set up a National Agency for Agricultural Consultancy (NAAC) in October 1998. This agency is subordinated to the MoAF. The NAAC currently employs 1 800 people (but it is still under-staffed, as the targeted number of personnel is 5 000). NAAC's territorial network includes 42 offices (in all counties and one in Bucharest) and 750 local centres. The main activities of NAAC consist of support to the reform process through publicity, specialised technical assistance and management advice (MoAF 2000). For the moment, NAAC is financed from the state budget and provides its services to private agricultural producers free of charge. In the long term, it is envisaged that NAAC will have to generate sufficient income to finance itself.

3. Education and training

Pre-reform period

Before 1989, the system of agricultural education and training was highly centralised and aimed to educate specialists in strictly defined fields according to technical requirements specified for each level. Upper secondary education was strongly oriented to practical skills. During practice hours pupils worked in the production workshops of the school or at other production units. Their practical skills were regularly tested. After finishing secondary education, pupils who did not want to continue their studies were offered a job, which they were not compelled to accept; others could proceed with higher education.

At the universities, the following agricultural faculties existed: Agriculture, Horticulture, Zoology, Veterinary Medicine, Land Amelioration and Agricultural Economics. These studies took four years, except for veterinary medicine and land amelioration, both requiring five years. The agricultural economics faculty was part of the economics university. In these studies, the focus was on technical subjects and agricultural practices. Almost no attention was paid to modern managerial techniques or business practices. After completion of this cycle, the graduate was offered an obligatory job, which had to be maintained for at least three years. This period was known as the "production stage". Graduates from the agricultural universities usually worked as specialists at state farms or co-operatives.

All persons with a qualification, from qualified worker to university degree, had to take refresher courses every five years. In general, these courses were taught by high school and university teachers, but specialists-practitioners were also invited to share their experience. For the agricultural sector refresher courses were organised at special locations, where necessary equipment and facilities were available. The subjects taught varied, but focused mainly on new technologies, new seed varieties and animal breeds.

Reform period

Integrated into the overall education system, agricultural education underwent important changes as part of educational reform in Romania. Reform began in 1990 and was given new impetus at the end of 1997. Compulsory education was reduced from 10 to 8 years. Possibilities for private education opened up and private educational institutions emerged alongside the state system. The reform also led to less centralisation of the system, renewed and more flexible curricula, and changes in education financing.

The financing of education in Romania is currently provided at both the central (represented by the Ministry of National Education) and the local (represented by local authorities) levels. All personnel expenses are covered from the central budget; while building and equipment maintenance, other current and capital repairs, subsidies for school boarding and, beginning in 1999, new capital investments are financed from local budgets. Extra-budgetary resources can be also generated by local authorities and individual schools (OECD 2000c).

The overall structure of agricultural education experienced only modest changes compared to the period before 1990. At present it incorporates:

- upper secondary education, preceded by eight years of compulsory schooling:
 - *agricultural high schools* (4-5 years), *vocational* (2-4 years) and *apprenticeship* (1-3 years) schools; after the first two years of high school pupils take an examination, and either can stay for the remaining years in high school or enter a vocational school;
 - post-high schools;
- higher education:
 - university education: short course (*university college*) of 3-4 years, or long course of 5-6 years;
 - post-university education;
 - specialised studies, including post-university study, doctorate, and refresher courses.

At present, there are 124 agricultural upper secondary education institutions (out of 1 309 such institutions in Romania), with the number of students reaching almost 47 000. At the end of high school, pupils have to pass the final examination (baccalaureate), giving them the opportunity to take the entrance examination to university. At vocational schools students study for 2, 3 or 4 years to obtain a vocational diploma, bringing them to a technician level. After vocational school further professional training is possible at apprenticeship schools. High school, vocational and apprenticeship schools are usually organised in one institution. Every institution has its rather narrowly determined profile, for example horticulture, topography or technology for the food industry. One third of the curriculum is composed of general subjects and two thirds of specialised subjects, including practice periods.

After high school, education continues at universities. Agricultural colleges operate within the framework of universities and offer a 3 year course, after which it is possible to continue university studies. During the pre-reform period, university graduates were allocated jobs in a centralised way. Since 1990, graduates must find jobs for themselves.

The system of refresher courses collapsed after 1990. Due to lack of finance, the educational system does not allow the establishment of modular educational and training systems for farmers and other adults wishing to supplement their education. This gap, however, represents one of the major challenges, as many people with minimal or no education have become engaged in farming since the reform. It is expected that the newly set up National Agency for Agricultural Consultancy (NAAC) will develop an

agricultural knowledge and extension system for agricultural producers, particularly the small ones. In the past 4 or 5 years various NGOs have begun to offer training to private farmers, however their activity is as yet limited.

4. Quality and sanitary control

Pre-reform period

During the pre-reform period, all products, including foodstuffs, were subject to quality standards which were issued and organised hierarchically. The most general regulation, the so-called state standard, was issued by the Romanian Institute for Standardisation (IRS). At the economic branch level, technical standards were applied, which were issued by the responsible ministry. At the level below there were internal department norms. The relevant departments of the ministries issued these norms. For example, products of the food industry were under the responsibility of the respective departments at the Ministry of Agriculture and Food. At the lowest level, internal enterprise norms were applicable (Table IV.29). The standards needed approval by a "Central", which was an intermediary link between the department and the specific sub-industry. For example, within the Ministry of Agriculture and Food Industry, the Department of Food Industry covered several Centrals, such as the Central for Sugar, the Central for Milk, the Central for Meat, Central for Beer, etc.

Table IV.29. **Romanian system of standards before and after 1990**

Before 1990		After 1990	
State standard	STAS, "standard de stat"	Romanian standard	SR, "standard roman"
Branch technical standard	STR, "standard tehnic de ramura"	Professional standard	SP, "standard profesional"
Internal department norm	NID, "norma interna departamentala"	Company standard	SF, "standard de firma"
Internal enterprise norm	NIU, "norma interna uzinala"	Technical specification	ST "specificatie tehnica"

Source: Ministry of Agriculture and Food.

The system of quality standards was applicable and compulsory for the whole economy. Quality control was performed at the enterprise level by internal quality control departments. The financing of the enterprise was based on the quantity produced, and this created a permanent tension between the tasks of increasing production and maintaining product quality.

Reform period

In 1990, a revision of standards commenced and is still in process. The existing system is derived from the previous four level system (Table IV.29). At the highest level there is the so-called *Romanian standard*. It is applied nation-wide and authorised by the Romanian Association for Standardisation (the successor of the Romanian Institute for Standardisation). Some of the Romanian standards are harmonised with European standards, while others meet international standards (ISO). At the subsequent hierarchical stages are the *professional* and *company* standards and *technical specifications*. Professional standards are issued by the respective ministries. Company standards apply to raw materials that are sold to other companies for further processing. Technical specifications refer to products manufactured by a specific company. These specifications are approved by the Ministry of Health which issues sanitary permits for the products involved.

Since 1990, standards are no longer compulsory except for: i) products that could endanger people's health if the quality standards are not met; and ii) alcoholic beverages containing more than 15% of alcohol.

Since 1996, foodstuffs are subject to manufacturing licenses that are issued by the Ministry of Agriculture and Food. The manufacturer is obliged to specify in advance which quality standard (SR, SP, SF, ST) his product will meet. To receive the licence, compliance with the technical specifications is sufficient provided that sanitary approval of the Ministry of Health is given. In the case of products with animal components the veterinary approval of the National Sanitary Veterinary Agency is also necessary.

All foodstuffs (including imported items) have to be labelled in the Romanian language. The labels must include information on the producer's name and address, the product's commercial name, nutritional composition, expiry date, ingredients, etc. Imported food products need, in addition, a technical specification from the manufacturer and sanitary approval issued by an organisation in the country of origin recognised by the Romanian authorities. Some products, like raw materials for the food industry (yeast, additives, colouring agents) and foodstuffs of animal origin, are on the list of commodities for which an import permit issued by the Ministry of Agriculture and Food is needed. If a foodstuff is of animal origin, it is also submitted to sanitary and veterinary control.

The Association for Consumer Protection is a private organisation which is also licensed by the state to perform quality controls of marketed foodstuffs, however its activity is limited due to financial and technical constraints.

In preparing for accession to the European Union, Romania is currently harmonising its laws on quality and sanitary control with EU legislation. Ordinances and instructions are being adapted to the EU rules. The changes apply to the sanitary-veterinary and phyto-sanitary sectors, seed and propagating material sectors, cereals, fruit and vegetables, as well as the wine and viticulture sector (Government of Romania, 1999a). In August 1999, a government ordinance setting a legal framework for food safety was published. The ordinance stipulates important measures for protecting consumers against bad practices in processing, storage and marketing of food products; it also aims at providing consumers with detailed information on the quality and other characteristics of marketed food products.

5. *Structural policies*

Except for land privatisation, no clear structural policy guidelines had been set at the beginning of the reform. Later in 1996, responding to the EU questionnaire on Romania's accession to the European Union the Romanian government formulated its structural objectives around farm consolidation and the development of commercial agricultural units. No specific programmes were established, beyond the government expressing a general commitment to promote associated forms of agricultural production, facilitate the development of supply, marketing and credit co-operation, and stimulate land transfer. The large-scale state (or majority state-owned) farms were attributed the role of focal points for the acceptance of advanced agricultural technologies. The 1997 reform program stressed that the development of agriculture as a major economic sector had to be based on private property and market mechanisms. From this starting point, it was stated that a commercial family farm was considered the basic element of the agricultural production system. Consolidation of land ownership and the enhancement of the economic viability of farms were stressed. These goals were to be achieved through more general policies (land reform, privatisation, credit, subsidy, training and extension, etc.), as no specific structural measures were introduced. Thus, among such general policies, adoption of the Land Circulation Bill and the amendments to the Land Lease Law in 1998 create a legal basis for farm consolidation. As part of the government's privatisation programme, another structural adjustment activity since 1997 had been the privatisation of state-owned farms (see Part III). The current version of the National Plan for Agriculture and Rural Development prepared by the MoAF in December 1999 (see Part IV, section F), again underlined the importance of "consolidation of private property" and also encouraging of transfer of agricultural assets to young farmers. The Plan envisages investments in farm modernisation and support for setting-up producer groups (Government of Romania 1999b).

6. Agricultural and rural infrastructure

Pre-reform period

In the pre-reform period, almost all rural communes were connected to public roads, with the rural road network accounting for about 80% of the total national road network. However, more than half of the rural network consisted of roads without asphalt coating. Practically all rural communes were supplied with electricity, and about 76% had water supply systems. At the same time, public utilities such as gas supply, sewerage and water treatment were poorly developed. Household use of gas was not encouraged as gas was mainly intended for industrial purposes. For this reason, the number of communes provided with natural gas remained quite small: in 1970, only 13% and in 1989 still only 17% of them had gas supply. The existence of sewerage systems was even more rare, since only one tenth of the rural communes had a public sewerage system.

Given the moisture deficit for most crops cultivated and the uneven distribution of rainfall over the year, irrigation is important in Romania, particularly for such major agricultural areas as the Romanian Danube plain, the Western plain, Dobrogea, and the eastern part of Moldova. Periods of drought alternate with torrential rains, resulting in excessive humidity, landslides and soil erosion. Under such conditions, land amelioration tasks are multidimensional, including irrigation, drainage, erosion control and desalination.

In the 1970s and 1980s, major investments were made in land amelioration. As a result, about 3.5 million hectares were put under irrigation; nearly 3.3 million hectares were equipped with drainage systems; and about 2.3 million hectares came under soil erosion control. All these works involved major technical and financial efforts. Important hydrotechnical works were performed in the Danube Delta, including flood prevention systems, creation of special fish farms and draining swamps, and reclaiming land for agricultural use.

Reform period

After 1989, public investments in agricultural and rural infrastructure declined. However, both the local and national authorities allocated funds to improve gas and fresh water supplies to rural areas. By 1997, 95% of rural communes had fresh water supply as compared to 76% in 1989. Lack of sewerage continues to be a problem: in 1997 only 13% of rural communes had such systems, slightly more than in 1989 when this share was 10%. Only 10% of village houses have sewerage facilities, and only a small part of the water collected is cleaned.

The National Plan of Territorial Development incorporates important provisions on rural infrastructure, including improvement of drinking water supply, water and waste treatment systems. Development of the rural road network is also one of the priorities outlined. The Plan serves as a general guideline for setting the public investment programme and financing of investment projects. Development of rural infrastructure is also one of the priorities of the National Plan for Agriculture and Rural Development (see Part IV, section F).

Since the start of transition, serious problems have emerged in the financing and operation of land reclamation systems due to: 1) lack of capital investments to continue large-scale works; 2) the systems' design oriented at large-scale users which are inappropriate for current small-scale users; and 3) budgetary constraints in funding the maintenance of the systems. After the dismantling of co-operatives, important land reclamation projects were stopped. Under the current agricultural structure dominated by small private farms, it is difficult to operate the traditional system. Even in many state farms irrigation facilities are no longer used due to high costs (see Annex I).

Currently, all land reclamation systems (*i.e.* irrigation, drainage, embankments against floods and soil erosion control) are under the supervision of the Regie Autonome for Land Reclamation, which is a structural unit of the Ministry of Agriculture and Food. In 1999, the Regie was overseeing irrigation and drainage facilities for 3.1 million hectares. It conducted soil anti-erosion works over 2.2 million hectares and flood control works and embankments on the Danube and inland rivers (2 224 km).

The works and the maintenance of these systems are funded by the state budget, of which 82% through the MoAF. This is to be gradually reformed according to a new government ordinance issued in 1999. Starting in 2000, the ownership, financing and management of the national land reclamation system will be decentralised, with the primary network coming under the control of the National Society for Land Reclamation (a successor of the Regie Autonome for Land Reclamation), and the secondary network taken over by the *associations of water users*. A five year transition period is foreseen during which the associations of water users will receive a subsidy to cover part of their expenses (electricity and other exploitation costs).

7. Marketing and promotion

Pre-reform period

Under the previous regime, the distribution of agricultural output was under strict state control. Marketing in its original sense hardly existed. State farms and co-operatives had to “market” their output according to plans, which determined the volumes to be delivered and their destinations. Even individual households fell under this regulation, although they were allowed to sell small volumes of their products at “free” peasant markets.

For such commodities as grains and oilseeds, fresh fruits, vegetables and grapes, there existed standardised procurement-distribution networks with a top-down territorial organisation. These networks included a central agency with branches in each county; each county branch had collection and storage facilities and operated according to procurement and distribution plans set by a central agency. In the meat and dairy sub-sectors the procurement function was performed by the processing plants. The plants were located in each county, having a number of local collection points and special vehicles to transport products from producers to processing sites. The agro-industrialisation campaign of the 1980s resulted in the emergence of large vertically-integrated operations, such as pig and poultry complexes, agro-kombinats producing canned fruits and vegetables, and wineries. Thus, an important part of the after-farm product flows in these sub-sectors represented inter-enterprise flows.

Reform period

Although the gradual dismantling of the state-controlled system began after 1989, state-owned (or state majority owned) agents dominated the processing and marketing infrastructure long after the start of the reform. Moreover, the general policy framework that was in place until 1997 impeded the emergence of a new private marketing infrastructure, while slow progress in privatisation worked against the market orientation of the existing downstream enterprises. Substantial reduction of state intervention in the agro-food sector as a result of the 1997 policy reform created a more favourable environment for the development of market-oriented marketing systems.

In 1993-1998 the government supported several projects for the development of agricultural wholesale markets (see Part III, section C.6).

Between 1993 and 1997 within the framework of an EU-PHARE project, a Market Information System (MIS) was set up, with the task of providing weekly information on price and agro-food market developments across the country. The system was installed on the premises of the MoAF and its county branches and later was transferred to a private company, which made attempts to commercialise it. However, these attempts failed and at present the system is virtually abandoned.

No other specific marketing and promotion activities are undertaken by the Romanian government. Participation in important international fairs and exhibitions by Romanian agro-food companies is self-financed. Romanian embassies and consulates and the Romanian Chamber of Trade and Industry provide information on business and investment opportunities in the Romanian agro-food sector, but often this information is rather limited.

F. Rural development policy

The rural population accounts for 45% of total population and rural communes make up 89% of the country's surface area. Romanian rural areas are characterised by low levels of development, with significant socio-economic disparities between rural and urban areas. From the economic standpoint, one of the major problems of rural areas is their poorly diversified economy, based predominantly on agriculture. Currently absorbing about 70% of the active rural population, agriculture serves as an occupational buffer for most rural inhabitants. However, agricultural incomes are too low to assure appropriate levels of welfare: with an average of 41% of rural people being under the poverty line (1998), this share reaches 58% for individual farmers of working age (Chirca and Tesliuc, 1999; see also Part I). Rural areas in Romania are characterised by under-developed infrastructure, social services and housing, as well as by socio-demographic pressures, such as ageing and low educational level of population.

Until recently, no specific rural development policy was implemented. The broadly formulated goal of "improving the life quality in rural areas" meant, in fact, financial support through agricultural policies and investments in public utilities. Rural development as a policy goal was first mentioned in December 1996 in the programme of the newly elected government.

Only in 1998, was a special inter-ministerial working group set up, including representatives from the MoAF, the Ministry of Public Works and Territorial Development and the Ministry of Water, Forests and Environmental Protection, Ministry of Finance and Council of Reform. Its task was to identify common and specific issues between rural and regional development and to set the policy priorities in these two fields. One of the important results of this work was the preparation of the law On Less Favoured Areas Regime.

Inside the MoAF, a Directorate for Rural Development was created to develop and co-ordinate social, economic and infrastructure programmes in rural areas. A rural development policy strategy was prepared in 1998, preceded by a comprehensive diagnosis of rural areas (MoAF and European Union PHARE Programme, 1998). The following rural policy objectives were defined: *i*) development of infrastructure: water supply, waste management, transportation, communication and energy; *ii*) promotion and diversification of economic activities; *iii*) development of efficient and diversified agriculture; *iv*) development of viable forestry sector based on sustainable forestry management; *v*) creation of favourable conditions for tourism; *vi*) set-up of small and medium-sized enterprises; *vii*) development of human resources. The strategy also defined several specific objectives related to improvement of the quality of life and support of the viability of rural communes.

Rural development issues were further concretised in the National Plan for Agriculture and Rural Development which was approved by the Chamber of Deputies in April 2000 (Government of Romania 1999*b*). The Plan outlined four priorities of rural development in Romania for the period 2000-2006:

- development of agro-food processing and marketing infrastructure in rural areas in conjunction with improvement of quality, veterinary and phytosanitary control;
- development of rural infrastructure as a way of increasing living standard in rural areas;
- diversification of economic activity in rural areas in order to create alternative employment opportunities and income sources, coupled with improvement of economic performance of private agricultural structures based on principles of sustainable development;
- development of human resources by improvement of vocational training of persons occupied in agriculture and forestry.

The Plan translates these priorities into more detailed rural development measures, which are to serve as a basis for the implementation of the SAPARD. At present (beginning of 2000), European Commission is reviewing the Plan with a view to deciding what set of measures will be accepted for support through the SAPARD. From 2000 up to 2006, the SAPARD will finance individual projects consistent with selected measures and strictly defined criteria. The first 1 800 projects are to be launched in 2000 under the Special Preparatory Programme (SPP) even before the SAPARD financing is approved. However, lack of institutional and human capacity is a serious impediment for implementation of these programmes. In this respect, it is intended to allocate substantial funds during the EU pre-accession period for human

resource development, in particular to reorient some bilateral agreements towards training of specialists and the staff of the local public administrations and to put more emphasis on training programmes through the National Agency for Agricultural Consultancy.

Other activities related to rural development and carried out by the MoAF in co-operation with other governmental and non-governmental institutions, include:

- Programme for the Social and Economic Normalisation of the Romanian Village, focusing on economic and services development, access to infrastructure and technical development of public utilities; and the Support for Rural Development Programme, which consists of designing, initiating and implementing measures for infrastructure improvement, such as: water supply, phone lines, transport, electric power. These activities are carried out in co-operation with the Ministry of Public Works and Territorial Planning.
- Assessment of the opportunities for professional reorientation of unemployed miners under the Programme for Absorption of Labour Dismissed from Mining Activities, by Setting up and Developing Agro-Tourism Farms. This is a joint activity with the National Agency for Mining Zones.
- The project on Consolidation of the Economic Role Played by Women in the Rural Areas covering Buzau and Vaslui counties as two pilot areas, carried out under the auspices of the UNDP's National Commission for Poverty Control.
- The UN-IFAD project in the Apuseni Mountains and Danube Delta incorporating measures for support of less favoured areas.

G. Social measures

1. *Pre-reform period*

During the pre-reform period there were several social insurance schemes in Romania, of which the *state social insurance system* was the largest one. Separate systems existed for the members of consumer co-operatives and for specific professions, such as artists and lawyers. Persons working on state farms and also those employed by agricultural co-operatives were covered by the state system. Members of agricultural co-operatives and individual producers (mostly from mountainous areas) came under the so-called *peasant social insurance system* managed by the Autonomous House of Peasants' Pensions and Social Insurance. The state and peasant insurance systems functioned according to the same principles, with differences relating to the rates of beneficiaries' contributions and the extent of state support. As personal contributions and state support to the peasant social insurance system were generally smaller compared to the state system, the level of benefits provided by the peasant social insurance was very low.

Before 1989, a large part of social activities in rural areas was financed through agricultural enterprises. Investments for social and cultural infrastructure (such as housing for workers, canteens, kindergartens, etc.), as well as costs of other social activities were partly covered from the profits of agricultural enterprises. For this purpose, several social funds (for house construction, for social activities) had to be generated by each enterprise, to which it had to allocate a normative share of its profit. By the end of the 1980s, these contributions were substantially reduced due to the declining profitability of agricultural enterprises, which in turn led to the contraction of social and cultural expenditures. State farms were generally better endowed with social funds than agricultural co-operatives. In the 1970s and 1980s one of the important policies carried out within the framework of agricultural enterprises was the construction of dwellings for agricultural specialists. The latter were graduates of universities and of specialised post-secondary schools or persons with technical education. This policy was driven by the need to keep young agricultural specialists in rural areas.

The health care system was entirely state-owned; no private practices were allowed. In almost every commune there was a small clinic and a dentist, which were subordinated to the Ministry of Health.

2. Reform period

Since 1989, the need for social protection has grown significantly because of large-scale unemployment and the sharp rise in the number of pensioners (partly due to increasing early retirements) (see Part I). The policy response to the new situation was the expansion of the system's coverage, by loosening or changing the eligibility criteria for social protection.

After 1989, all independent social insurance systems were merged with the state social insurance system. However, the autonomy of the former peasant social insurance system was maintained. According to the new legislation (Law 80/1992 and Law 1/1994) the farmers' (peasant) system currently covers persons engaged in agricultural production in households (including unpaid family members over 15 years of age) and in agricultural associations, as well as owners of forest lands. The beneficiaries are eligible for pensions for old age, disability, and dependants; sickness and maternity payments; and other financial assistance. The former Autonomous House for Peasants' Pensions and Social Insurance has been liquidated and its activities have been taken over by a specialised department in the Ministry of Labour and Social Protection.

As before the reform, the level of pensions and other payments provided by the farmers' social insurance system was very low compared to the state system. At the end of 1996, the average farmer's pension equalled only 21% of the average state pension and only 8% of the average wage, and, in the case of the full-payment scheme, covered only 40% of the minimum cost of living. In 1997 farmers' pensions were increased, but still remained low compared to state pensions. There is currently an active debate in Romania on the merits of merging the farmers' social insurance system with the state system.

H. Environmental measures

1. Pre-reform period

Under the command system environmental concerns in agriculture (and throughout the economy) were largely disregarded. The ruling regime prevented public involvement in environmental debate and state environmental data were often kept secret. The system encouraged output growth at any cost and induced intensive production; at the same time it isolated producers from the real cost of natural resources. The result was poor enforcement of pollution prevention and control; widespread environmentally unfriendly practices; wasteful production; and development of production structures with high environmental risks, such as large-scale livestock complexes. Inappropriate agricultural practices and intensive agriculture significantly increased pollution, negatively affected the fertility and quality of soil, accelerated its erosion, and disturbed the ecological stability of landscapes. Itself contributing to environmental problems, agriculture was at the same time adversely affected by other human activities, particularly in areas situated close to industrial centres.

2. Reform period

Within the changed political and economic framework in Romania, more focus was put on environmental problems. This was prompted by the opening opportunities for civil activity, in particular by the emergence of numerous environmental NGOs in Romania. Strong impulse was also given by the *Environmental Action Programme for Central and Eastern Europe* (1993) prepared under common initiative of the Central and Eastern European countries, the NIS and OECD countries. It laid the basis for action by national and local governments and urged them to seek a new approach to development and implementation of environmental policies (OECD 1999d). In the most recent period, accession to the European Union, implying the prospective adoption of the EU environmental legislation as part of the *Aquis Communautaire*, became the main driving force for environmental protection reform in Romania.

The changes in the field of environmental protection included formulation of new strategies and policies and the build-up of a legal framework and institutions. In contrast to the pre-reform period when the responsibility for environmental protection was divided between several ministries, a specialised Ministry of Water, Forests and Environmental Protection (MoWFEP) was created in 1990, with branches in all

country regions. Environmental departments were created in other ministries, including the MoAF, where the Department of Land Reclamation and Environmental Protection was set up. A number of active non-governmental environmental structures emerged, including a Romanian regional branch of the Environmental Centre for Central and Eastern Europe, the Centre for Environmentally Sustainable Economic Policy, and about 300 other environmental NGOs. By the mid-1990s Romania had developed its *Environmental Protection Strategy*, the *National Programme for Environmental Protection* and the *National Environmental Action Plan*. In 1999, the *National Strategy for Sustainable Development* was prepared by the Romanian Government with the assistance of UNDP experts.

With substantial progress in the creation of basic environmental strategies, laws and institutions, there are still significant gaps in formulation of sectoral policies, development of policy instruments, and enforcement mechanisms. Harmonisation of Romanian environmental legislation with that of the European Union is proceeding with delays. Environmental agencies are under-funded and their personnel require training. Few educational institutions have incorporated environmental issues into their curricula. Although certain progress in environmental monitoring has been achieved in Romania since the start of the transition, it is still insufficient. Environmental parameters, analytical methods and monitoring procedures need further improvement. Thus, the gaps in environmental information are still considerable, including for example the lack of comprehensive data about pollution and its levels, location and sources. In 1995 Romania legally introduced the polluter pays principle (PPP) consistent with EU provisions, however, generally the tax is ineffective in changing polluters' practices or contributing tangibly to environmental funds. While environmental challenges are significant, the financial and human resources are far from being adequate. At present, Romania has neither sufficient funds nor the institutional capacities to undertake effective environmental protection.

As far as agriculture is concerned, production issues have dominated the policy agenda, while environmental concerns have been of low priority. Agricultural and rural development strategies, as well as the environmental documents mentioned above, state several environmental objectives, which relate specifically to agriculture, such as sustainable development of the sector, reduction of pollution and development of environmentally sound practices, including organic farming. However, at present Romania is just at the stage of translating these objectives into specific agri-environmental policies and measures.

Several legislative acts incorporating specific agri-environmental provisions are currently under preparation. Thus, the draft law On Soil Protection defines good agricultural practices. The draft law On State Aid to Farmers Applying Environmentally Friendly Methods of Production is intended to follow EU agri-environmental legislation, according to which financial aid is provided to farmers for performing certain activities or production techniques conducive to protection of environment. The current version of the Romanian law stipulates that only farmers who incur financial losses due to application of environmentally friendly methods are eligible for subsidies. This support is to be provided from the national budget, Environmental Fund, EC funds and several other sources. And finally, a government ordinance On Ecological Agro-Food Products is being drafted by the MoAF. It sets the legal framework for production and marketing of ecological products in Romania, including major definitions, rules for ecological production; organisation of certification and labelling; and creation of the National Authority for Ecological Agriculture (as part of the MoAF structure). It should be stressed again that these documents are currently at the drafting stages or adoption, and the perspectives of their introduction are yet unclear.

While specific agri-environmental measures are being elaborated in Romania, environmental activity in the agricultural sector is currently governed by general environmental regulation (Box IV.3.). In addition, infrastructure, rural development, education and extension policies also address some specific environmental tasks. The most important environmental activities implemented within this framework are:

- horizontal activities for restoration and maintenance of soil quality, including afforestation of degraded lands, soil protection works, and soil conservation;
- investments in upgrading and maintenance of irrigation and drainage facilities; investments in sewage and water treatment systems in rural area;

Box IV.3. Legislative and institutional framework related to protection of natural resources in agriculture

The new **framework law** for environmental protection (Law 137/1995) contains regulations on: prevention and control of the deterioration of the environmental quality status; ecological reconstruction of deteriorated areas; protection and conservation of natural habitats, terrestrial and aquatic ecosystems, of wild plant and animal species; a regime for natural protected areas and nature monuments; introducing of non-autochthonous species. This framework law is to be followed by specific laws on protected areas and other environmental issues.

Land Law 18/1991 amended by Law 167/1997, establishes the legal framework with respect to lands subject to special ecological protection, such as lands in natural reserves, national parks, nature monuments. It also contains regulations on identification of degraded lands and works on ecological reconstruction and improvement.

Law 107/1999 On Improvement of Degraded Lands by Afforestation regulates transfer of agricultural land into forestland; defines financial sources for afforestation works; established the responsibility of owners of degraded lands.

Law 5/1982 On Crop and Forest Protection and the Pesticide Regime defines the co-ordination of activities on pest and weed control in agriculture and forestry and measures to reduce risks associated with the use of products for pest and weed control.

Law 85/1995 concerns production, trade and use of phytosanitary products against pests and weeds in agriculture and forestry.

The common ordinance issued by the MoAF, the Ministry of Health, and the Ministry of Water, Forest and Environmental Protection, on the approval of the statute of the Inter-Ministerial Commission for Certification of Phytosanitary Products Use, establishes the procedures for pesticide certification.

Draft documents being prepared in 1998-1999:

- Law On State Aid to Farmers Applying Environmentally Friendly Methods of Production;
- Government ordinance On Ecological Agro-Food Products;
- Law On Soil Protection;
- Law On Protection of Plants, Forests, Phytosanitary Quarantine and Phytosanitary Products Regime;
- Mountain project law (includes new provisions on natural parks and nature monuments, protection of endangered species and preservation of biodiversity).

State bodies responsible for the enforcement of environmental regulations: the Ministry of Water, Forest and Environmental Protection; the Ministry of Agriculture and Food; the Commission for Nature Monuments Protection of the Romanian Academy; the Ministry of Public Works and Territorial Development; Forestry Agency; the National Sanitary and Veterinary Agency; the Romanian Water Agency; the county inspections for plant protection and phytosanitary quarantine; the Ministry of Health; the Academy of Agricultural and Forestry Sciences; the Ministry of Trade and Industry.

Source: Toma, 1999; the Ministry of Agriculture and Food.

- Danube Delta and Apuseni Mountain programmes (incorporating measures for less favoured areas);
- advisory service and training to farmers on environmentally friendly practices through the National Agency for Agricultural Consultancy.

I. Consumer measures

1. Pre-reform period

During the communist era the country's leadership sought to ensure a stable supply of food at low prices. However, the 1980s witnessed dramatic food shortages aggravated by massive agricultural exports and a deterioration of the nutritional situation (see Part I). As a result a rigid food rationing system was

established. In the early 1980s, sugar and edible oil were put on ration books; by 1989 the rationing extended to meat, meat products, cheese, butter and eggs. A person living in an urban area was allowed to buy one litre of edible oil, 1.5 kg of sugar and 1 kg of meat per month. The norms for rural areas were much lower, taking into account the subsistence production existing there. People had the possibility of buying some products in peasant markets, but supply of the most critical items (meat, milk) was marginal there, as almost all marketable quantities had to be channelled to the state network. However, peasant markets were important sources of fresh fruit and vegetables.

2. Reform period

The land restitution process substantially increased the number of people with access to land, while the fall in real incomes and increased unemployment forced people to rely more heavily on subsistence production. In 1998, the equivalent value of subsistence production comprised 30% of the total value of food consumed by urban households, with this share reaching 46% in rural households (see Part I).

Normalisation of the food supply became one of the major government objectives after 1989, leading to the abolition of food rationing and radical re-orientation of trade policy. Availability of foodstuffs improved promptly after the lifting of restrictions on domestic trade and food imports. The government incurred large budgetary costs and devoted considerable administrative efforts in striving to limit or compensate significant increases in consumer prices during the initial reform period and to control prices for core foodstuffs thereafter. However, such policies proved to be unsustainable and highly distortive and were discontinued in 1997 (see Part IV, section B). Since then, no specific consumer food policies have been applied.

J. Overall budgetary outlays on agro-food policies

Before 1991, budgetary transfers to the agro-food sector were channelled from the central and county budget levels. Central government funds were predominantly allocated to state farms, agro-service and agro-processing enterprises, and for general services infrastructure. County budgets financed agricultural co-operatives and in some cases individual households (*e.g.* premiums for calves), as well as general services at the county level. Certain amounts from central budget funds were also injected into the programmes financed at the county level. Between 1986 and 1991, the share of county budgets in total transfers varied from 68% to 87% (Table IV.30), implying that the bulk of total budgetary support was directed to agricultural co-operatives. However, due to the fact that agricultural co-operatives were far more numerous than state farms, the level of budgetary support per enterprise in the co-operative sector was lower than in the state sector. Towards the end of the 1980s, this difference became more manifest.

Between 1986 and 1990, budgetary transfers to the agro-food sector were at a relatively low level, not exceeding 1% of GDP and 2% of total budgetary expenditures. Input subsidies (in sum with the per head payments for calves) represented between 34% and 44% of total budgetary transfers during this period, general services accounting for a share roughly equal to that of input subsidies (Table IV.30).

Table IV.30. Composition of budgetary transfers to agro-food sector in 1986-1990, per cent

	1986	1987	1988	1989	1990
Total budgetary transfers to agro-food sector	100	100	100	100	100
<i>of which:</i>					
Input subsidies and per head premiums for calves	43	44	43	34	38
General services	38	41	42	65	42
Other transfers	19	15	15	0	20
Share of the central budget in total transfers, per cent	32	30	29	13	13
Share of county budgets in total transfers, per cent	68	70	71	87	87
Budgetary transfers to agro-food sector as per cent of total budgetary expenditure	1.6	1.6	1.6	0.9	2.0
Budgetary transfers to agro-food sector as per cent of GDP	0.7	0.6	0.6	0.4	0.7

Source: OECD Secretariat.

The previous system of budgetary financing was dismantled in 1991 mainly due to significant changes in the agricultural structure, particularly the dissolution of agricultural co-operatives, but also due to a change in agro-food policies. Financing from the county level, directed previously to agricultural co-operatives, was discontinued. All transfers were centralised and from 1991 were financed from the state budget. The scale and the structure of budgetary transfers changed substantially following the introduction of large-scale price support payments, as well as preferential credit. Another major shift occurred as a result of the 1997 liberalisation when these transfers were discontinued or substantially downsized.

In real terms after a sharp rise in 1992, budgetary transfers to the agro-food sector decreased and remained relatively stable during 1993-1996. In subsequent years they declined and by 1999 were at about one third of their 1996 level (Table IV.31). After almost a two-fold rise in 1992 (to 10.9%), the share of transfers in consolidated budget expenditure stabilised at around 8.0% between 1993 and 1997, and then dropped to about 4.1% in 1999. The relation of agro-food budgetary transfers to GDP rose sharply to 4.3% in 1992, then remained between 2.3%-3.0% during the next four years, and started falling in 1997 to reach 1.0% in 1999.

Table IV.31. **Budgetary and quasi-fiscal transfers to agro-food sector in 1991-1999**
General indicators, billion Lei

	1991	1992	1993	1994	1995	1996	1997	1998	1999p
Total budgetary transfers to agro-food sector in nominal terms	44	262	547	1 334	2 149	2 546	4 810	5 295	5 274
Total budgetary transfers to agro-food sector in 1990 prices	16	31	18	19	23	20	15	10	7
Consolidated budgetary expenditure	780	2 406	6 312	15 913	22 927	34 033	63 267	90 998	128 443
Budgetary transfers to agro-food sector as per cent of consolidated budgetary expenditure	5.7	10.9	8.7	8.4	9.4	7.5	7.6	5.8	4.1
Budgetary transfers to agro-food sector as per cent of GDP	2.0	4.3	2.7	2.7	3.0	2.3	1.9	1.6	1.0
Quasi-fiscal transfers to agro-food sector	–	234	1 026	2 944	2 554	5 832	1 043	66	101
Overall transfers to agro-food sector (budgetary and quasi-fiscal)	44	496	1 573	4 278	4 703	8 378	5 853	5 360	5 374
Overall transfers to agro-food sector as per cent of GDP	2.0	8.2	7.9	8.6	6.5	7.7	2.3	1.6	1.1

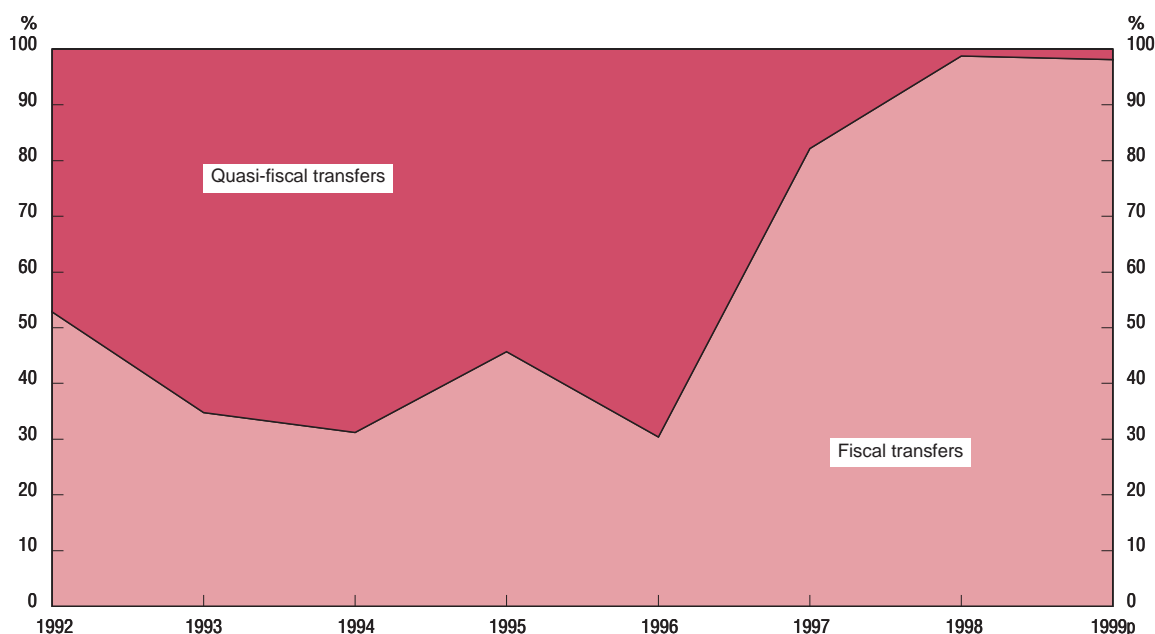
p Provisional.

Source: OECD Secretariat.

However, budgetary support does not fully reflect the amount of transfers directed to the agro-food sector in Romania. Between 1992 and 1996 substantial support for the sector was provided via quasi-fiscal transfers, and these have to be considered as well in order to capture the actual scale of support (Tesliuc, 1996a). As presented in Table IV.31, quasi-fiscal transfers include transfers arising from preferential credits to the agro-food sector which do not originate from budgetary sources, such as: *i*) funds channelled for principal credit and based on other than state budget sources (mainly, NBR refinancing facilities); *ii*) transfers arising from preferential interest rates, net of that part of such transfers which is already captured in the budgetary transfers (direct compensation of interest rates from the budget); and *iii*) amounts of forgiven debt. The element *i*) is derived from the total sum of the principal preferential credit presented in Table IV.25, after extracting that part of this credit which was covered from the state budget. The sum of elements *ii*) and *iii*) is roughly equivalent to the “transfers associated with preferential interest rates and debt forgiveness” presented in Table IV.26, but differs from these transfers by the amount of direct budgetary compensation of interest rates. Therefore, an attempt was made to avoid double counting between fiscal and quasi-fiscal transfers presented in Table IV.31 in order to arrive at a relatively accurate estimate of the overall transfers to agro-food sector.

Overall (fiscal and quasi-fiscal) transfers to the agro-food sector accounted for about 2.0% of GDP in 1991, and reached 8.2% in 1992; their share remained at approximately this level up until 1996. In 1997, the provision of credit from non-budgetary sources to support principal payments stopped, resulting in a reduction in quasi-fiscal transfers, leaving only those associated with fixed interest rates and debt forgiveness. As a result, the importance of quasi-fiscal transfers in overall transfers to the agro-food sector declined (Graph IV.7). Together with the abolition of large-scale (budgetary) price support payments, this brought the share of overall transfers in GDP sharply down in 1997-1999.

Graph IV.7. Shares of budgetary and quasi-fiscal transfers in the total transfers to agro-food sector



Source: OECD Secretariat.

Between 1991 and 1996, price support (payments to processors before mid-1993 and premia compensation thereafter) was the major component of budgetary transfers to the agro-food sector (Table IV.32). Since 1997, price support payments were limited only to reimbursements of arrears on the previous premia compensation and *ad hoc* price supports (for maize, wheat, pork and poultrymeat); therefore the share of this item in total budgetary transfers dropped considerably.

Input subsidies were the next most important component of budgetary transfers, and were maintained at a relatively high level through the whole period after 1990. They became particularly significant in 1997-1999, reaching 50% and over of total budgetary transfers. This shift occurred due to a substantial reduction in price support.

Budgetary transfers related to preferential credit were practically non-existent before 1994. During that period, off-budgetary resources backed preferential credit for the agro-food sector. Since 1994, the government has used budgetary funds, initially for interest rate compensation, and later also for the provision of principal credit. As a result, in 1995-1999 the share of credit-related transfers in total budgetary support to agro-food sector was significant, ranging between 13% and 30%.

Table IV.32. Composition of budgetary transfers to agro-food sector in 1991-1999, per cent

	1991	1992	1993	1994	1995	1996	1997	1998	1999p
Total budgetary transfers to agro-food sector	100	100	100	100	100	100	100	100	100
of which:									
Price support payments ¹	41	63	58	24	37	49	11	3	7
Input subsidy	36	30	31	57	24	37	50	70	65
Credit support to agro-food sector	0	0	0	9	30	13	29	14	14
General services	21	8	11	10	9	2	9	13	14
Other expenditures	2	0	0	0	0	0	0	0	0

p Provisional.

1. In 1997-1999 include subsidy for food wheat, export subsidies for maize, wheat, pork and poultry.

Source: OECD Secretariat.

General services represented another principal recipient of budgetary transfers. Its share of budgetary transfers was significantly reduced in 1992, but was relatively stable at around 10% over the next four years until 1998 (except for 1996 when it fell to 2%). In 1998 and 1999 the share of general services in total budgetary support increased to 14%.

Overall, up to 90% of budgetary transfers during the reform period was linked to highly distortive types of policies, such as price support, input subsidy and preferential credit (Graph IV.8). Large-scale price supports were abolished in 1997, but the major part of budgetary funds was still tied to input subsidy and credit support, reaching about 79% of the total allocations in 1999. Although major changes in the implementation procedures have been introduced for input and credit support, the government should still consider moving towards less distortive support.

Graph IV.8. Composition of budgetary transfers to agro-food sector



Source: OECD Secretariat.

NOTES

1. Persons employed in all economic sectors, not only in agriculture, were liable for such a contribution.
2. Peasant markets are described in greater detail in Part III, section C.6.
3. Feeding bread to animals was reported during this period.
4. Nevertheless, limited payments for bread and fresh milk continued and were completely phased out only by 1996.
5. This list covered main staple foodstuffs derived from the four commodities of “national importance”, including different wheat bread varieties, pigmeat, poultrymeat and products processed from these meats, liquid milk and milk products.
6. In the case of pigmeat, poultrymeat and milk this could refer to agents other than the state (or state majority-owned) agents. Private collectors/processors who were interested in receiving premia compensations had to pay minimum guarantee prices for their raw materials and apply official retail prices for products they sold to final consumers. In fact, private agents had little incentive to qualify for such compensations because this put them under rigid price and margin control.
7. However, transfers from the budget continued during 1997 because the government had to cover previous arrears on premia compensations.
8. For processors located in highly industrialised milk deficit areas in addition to standard premia compensations, surplus payments were made.
9. Although, until late 1993 the government limited interest rates, which were held below the inflation level and were negative in real terms (OECD, 1998a).
10. A detailed study of various preferential credit mechanisms that existed between 1993-1996 is contained in a World Bank report *Agricultural Finance. An Assessment of the Costs and Implicit Transfers Associated with the Current System of Agricultural Finance*. (Tesliuc, 1996a)

EVALUATION OF SUPPORT TO AGRICULTURE

In accordance with the latest OECD classification, support to Romanian agriculture presented in this report has been measured by the PSE, CSE, TSE and GSSE (Box V.1).

Box V.1. Definitions of the OECD indicators of support

Producer Support Estimate (PSE): an indicator of the annual monetary value of gross transfers from consumers and taxpayers to support agricultural producers, measured at the farm gate level, arising from policy measures which support agriculture, regardless of their nature, objectives or impacts on farm production or income. The PSE can be expressed in monetary terms; as a ratio to the value of gross farm receipts valued at farm gate prices, including budgetary support (percentage PSE); or as a ratio to the value of gross farm receipts valued at world market prices, without budgetary support (producer Nominal Assistance Coefficient, NAC).

Consumer Support Estimate (CSE): an indicator of the annual monetary value of gross transfers to (from) consumers of agricultural commodities, measured at the farm gate level, arising from policy measures which support agriculture, regardless of their nature, objectives or impacts on consumption of farm products. The CSE can be expressed in monetary terms; as a ratio to the value of consumption expenditure valued at farm gate prices, including budgetary support to consumers (percentage CSE); or as a ratio to the value of consumption expenditure valued at world market prices, without budgetary support to consumers (consumer NAC).

General Services Support Estimate (GSSE): an indicator of the annual monetary value of gross transfers to general services provided to agriculture collectively, arising from policy measures which support agriculture, regardless of their nature, objectives and impacts on farm production, income, or consumption of farm products. The GSSE can be expressed in monetary terms or as a percentage of the total support to agriculture (percentage GSSE).

Total Support Estimate (TSE): an indicator of the annual monetary value of all gross transfers from taxpayers and consumers arising from policy measures which support agriculture, net of the associated budgetary receipts, regardless of their objectives and impacts on farm production and income, or consumption of farm products. The TSE can be expressed in monetary terms or as a percentage of the Gross Domestic Product (Percentage TSE).

PSEs and CSEs as indicators of government assistance granted for the main agricultural commodities have been estimated for all OECD countries as well as for several CEECs and used in the process of monitoring their progress towards a more market oriented agriculture. The description of the methodology, including the new OECD classification, as well as detailed tables of PSE/CSE calculations and results are presented in Annex II.

Although one of the objectives of the new OECD classification is to make the indicators more consistent and more comparable between countries, the results presented in this study must be interpreted carefully. In any use of PSE and CSE indicators, such as for comparison between countries, it is important to bear in mind the recognised limitations of these indicators with respect to policy coverage, commodity coverage and data availability. Moreover, the macroeconomic and institutional framework in which

agricultural policy measures have been applied has a strong impact on the results. Thus, the market price support (MPS) element, measured as a price gap between domestic and foreign reference prices, captures the impact not only of agricultural policies as such, but also of macroeconomic policies (in particular through the exchange rate) and of inefficiencies in the downstream sector which separate agricultural producers from developments on world markets. This qualification is particularly important when the PSE/CSE method is used for countries in transition where dramatic macroeconomic reforms have been taking place, the downstream sector is inefficient and the data collection systems lag behind the changes in the economy. Recognising its limitations, it must be underlined however, that the PSE/CSE method is a very useful tool in analysing agricultural reforms and the level of support provided for agricultural producers in countries in transition.

A. Aggregate results

1. PSE/CSE

The development of aggregate support to agricultural producers in Romania as measured by the Producer Support Estimate is shown in Table V.1. The results fluctuate, but indicate that over the whole period of 1986-1998, Romanian producers were subsidised and consumers implicitly taxed (except in 1992 and 1997).

Table V.1. **Aggregate percentage PSEs and CSEs for Romania, 1986-1999**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
Percentage PSE	48	54	51	46	28	15	8	16	19	10	12	3	25	20
Percentage CSE	-46	-48	-44	-37	-27	-15	5	-15	-12	-3	-2	0	-26	-21

e Estimate.

p Provisional.

Source: OECD.

The percentage PSE was high during the *pre-reform period* at an average level of 50% (within a range of 46% to 54%), mostly due to the high Market Price Support. This reflected the fact that domestic prices in Romania were considerably higher than the reference prices used in the estimates. Also an overvaluation of official exchange rates contributed to widen the price gap between international reference prices and domestic prices. The major portion of agricultural production was sold by state farms and co-operatives at administered prices fixed by the state and supported through the system of central planning. The remaining part of marketed production was sold on peasant markets at prices which were much higher than official prices (about 6 times for grains, 4.5 times for meat and about 3 times for milk and eggs on average for the period) with an upper limit fixed by the government. High prices on local markets reflected shortages of food products on the dominating official markets. Domestic prices were both isolated from world market prices through the state monopoly on all trade and also did not reflect domestic market conditions. In 1989, the Market Price Support declined strongly for pigmeat and poultry, but also for grains (becoming negative for all grains except maize). This was due to a strong increase in reference prices for these products not transmitted to domestic prices, which (with minor exceptions) had been kept constant since 1984. The budgetary support¹ to the agro-food sector was low compared to Market Price Support and included mainly input subsidies to cover plant protection costs and per head payments for calves as well as support to general services in infrastructure (irrigation and drainage subsidies).

During 1990-1992, the strong depreciation of the currency was the major factor determining the decline in the percentage PSE, from 46% in 1989 to 8% in 1992. The fall in this period was accelerated by the partial liberalisation of agro-food imports and substantial restrictions imposed on agro-food exports, in particular in 1990. Nevertheless, the percentage PSE remained positive despite the large depreciation of the currency due to a rise in the government controlled procurement prices, and a lift of the upper limit on prices at peasant markets.

Between **1993 and 1996**, the percentage PSE increased again to about 14% on average reflecting stronger support for producers through minimum guaranteed prices. Moreover, budgetary and quasi-budgetary support for producers rose significantly in this period, mostly through the preferential credit system. Much higher tariffs introduced in the second half of 1995 may also have had some impact on the rise in protection. However, tariffs actually applied were lower than those officially announced because of frequent duty exemptions allocated to specific importers (see Part IV, section C).

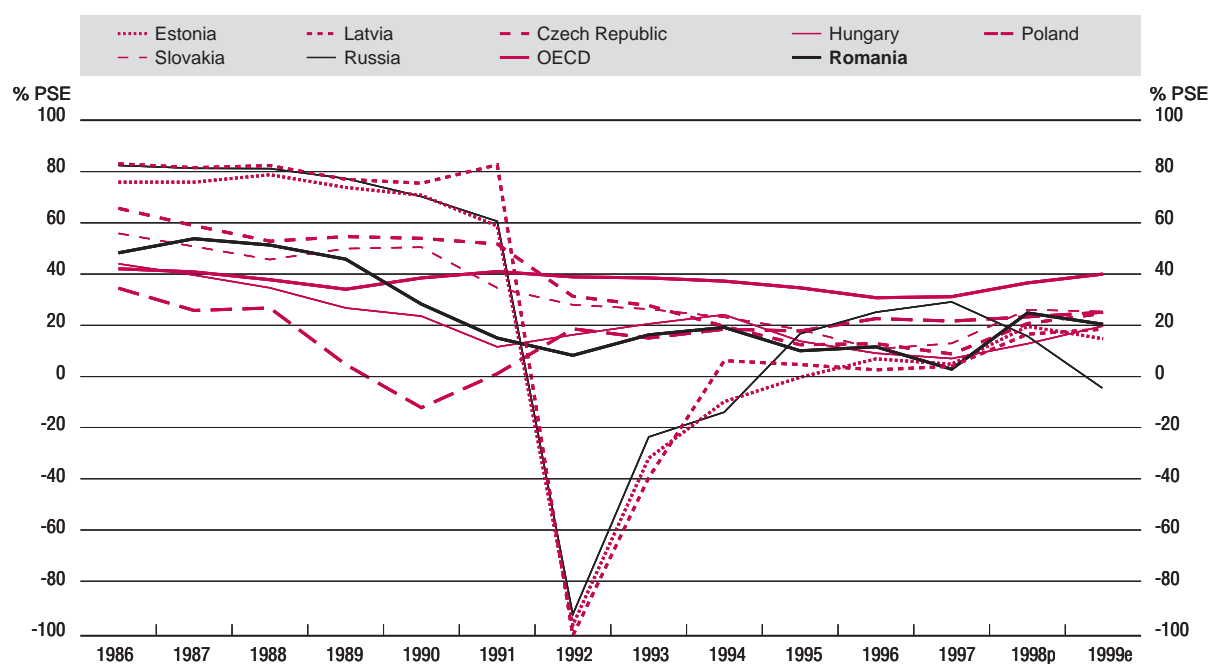
In **1997**, the full price liberalisation linked with the discontinuation of the minimum guaranteed price and premia system and the liberalisation of trade led to the drastic drop of Market Price Support to a negative level and consequently of the percentage PSE to 3%. Moreover, transfers related to credit programmes decreased significantly, leading to a reduction in budgetary support.

The percentage PSE increased abruptly to 25% in **1998**. This was mainly due to the combined effect of the dramatic fall in international reference prices not reflected in domestic prices together with the real appreciation of the Leu that widened the price differential. In 1999, the percentage PSE declined to 20%, mostly due to the real depreciation of the Leu.

During the pre-reform period, the level of support in Romania was substantially higher than the average in OECD countries (which declined from 43% in 1986 to 32% in 1989). However, the percentage PSE was lower than in most of the other transition countries for which the OECD has calculated PSEs (the three Baltic countries, the Czech Republic, the Slovak Republic and Russia). Only in Poland and Hungary was the level of support lower than in Romania.

During the transition period, changes in the level of measured support reflected the Romanian government's gradual approach to reforms and a lack of continuity in Romanian agricultural and macroeconomic policies. The evolution of support differed from that observed in most other countries in transition where the support sharply dropped at the beginning of transition, reflecting significant currency depreciation and overall economic liberalisation, but subsequently increased with the appreciation of the currencies and more protective policies for producers (Graph V.1). In 1999, the percentage PSE in Romania

Graph V.1. PSEs by country and OECD average, 1986-1999



Source: OECD.

(20%) was lower than the OECD average of 40%, equal to that in Hungary² (20%), higher than in Estonia (15%) and very close to that in other transition countries: Latvia (18%), Lithuania (21%), Czech Republic² (25%), Poland² (25%) and Slovakia (25%). Only in Russia was the level of support negative at minus 3%.

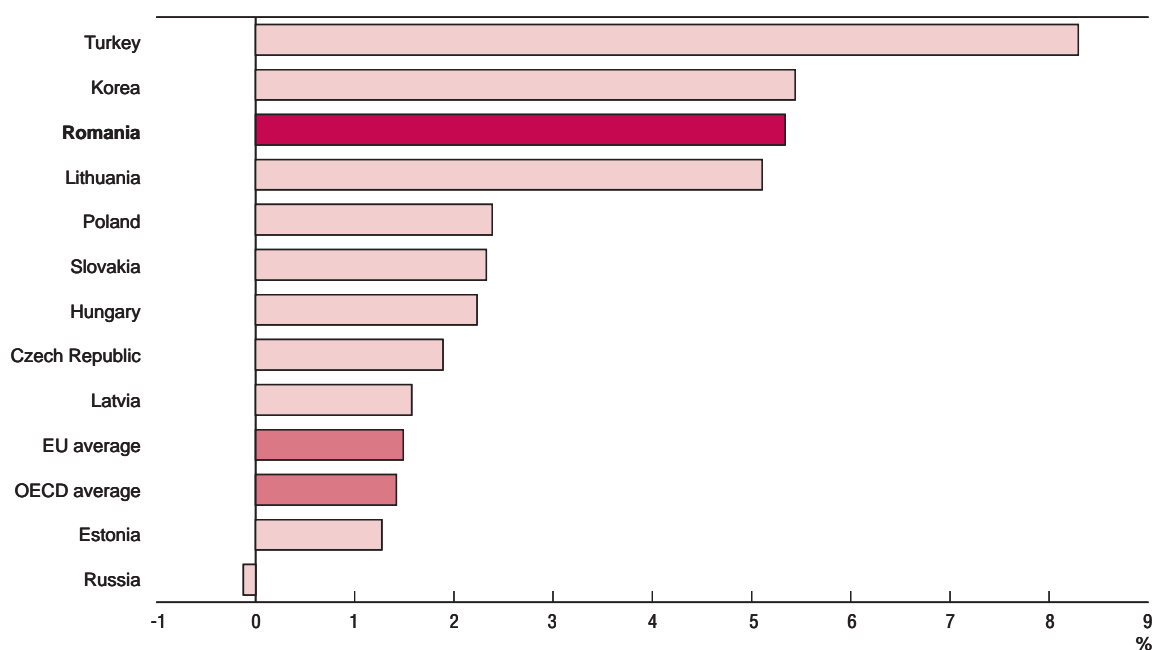
The percentage CSE was negative throughout the period under review except in 1992.³ In the *pre-reform period*, the negative CSEs, meaning the implicit tax on consumers, mirrored developments in positive Market Price Support. Consumer subsidies⁴ were introduced in 1991 (see Part IV, section B) and they compensated, in particular in 1992, for a large part of the market transfers from consumers to producers. This was reflected in a positive percentage CSE of 5% for 1992, compared to a percentage PSE of 8%, indicating implicit net positive support of both consumers and producers in that year (see Section C1 below). Since 1993 the implicit tax on consumers has closely reflected changes in Market Price Support, with consumer taxation reaching minus 21% in 1999.

2. TSE and General Services

Support to general services to agriculture (GSSE) remained low during the period under review, with its share in total support estimated below 11% for the whole period, except in 1997 when it reached 20%, compared to the OECD average of 16% between 1997 and 1999. The main components of GSSE were infrastructure measures (land reclamation) and from 1991 also transfers to research and extension. Therefore, changes in overall transfers from taxpayers and consumers associated with agricultural policies, as measured by the Total Support Estimate (TSE), reflected mainly developments in PSEs and consumer subsidies.

TSE was low in 1997, reflecting the relatively small budgetary transfers to producers and transfers to general services and the low market price support. On the contrary, the sharp rise in Market Price Support in 1998, resulting from high domestic producer prices compared to falling world market prices, inflated the percentage TSE to 8%. This was by far the highest level among all transition countries for which OECD has measured the level of support and several times higher than the OECD and EU averages. In 1999, the

Graph V.2. Total support estimate by country, EU and OECD average 1999
In per cent of GDP



percentage TSE fell to 5.3%, but still was the third highest among all countries for which OECD has measured the level of support, next only to Turkey and Korea (Graph V.2). Such a high percentage TSE indicates that for a comparatively poor country, such as Romania, the cost of agricultural support relative to a low GDP is very high. Moreover, it has to be noted that in Romania the dominant part of support is provided through Market Price Support policies and input subsidies. These are policy measures with the lowest transfer efficiency, meaning that only a small part of support is effectively received by producers (see Box V.2).

Box V.2. Transfer efficiency in agricultural support policies

PSE/CSE methodology estimates the support aimed at agricultural producers, not the support effectively received by producers. It is important to note that a part of the support aimed at agricultural producers is captured at other stages of the food chain, such as upstream and downstream sectors, and part of it is a dead-weight loss. The higher the support effectively received by producers out of total costs incurred by consumers and taxpayers to provide such support, the higher the transfer efficiency of agricultural support policies is.

The Policy Evaluation Matrix (PEM), which is an OECD model showing the effects of 'small' changes in support on production, trade and economic welfare, indicates that the effects of a given amount of support may differ substantially depending on the type of support measures used. The results show that the estimated effects on farm household income of support in the form of payments based on area are systematically higher than for the other support measures (market price support, payments based on output, payment based on input use). The model also shows that the estimated effects on farm household income of support provided in the form of payments based on the use of purchased inputs are always lower than when the same amount of support is provided through other measures. It means that transfer efficiency of payments based on area is relatively high and that transfer efficiency of input subsidies is relatively low. The results confirm that input subsidies constitute the least efficient way of supporting producers, as most of the support is captured by input suppliers and part of it is a dead-weight loss.

Quantitative estimations of transfer efficiency of such measures as market price support and area payments have been made for the European Union, the United States, Mexico and Canada. The results show that only between 25% and 64% of the additional support given in the form of market price support is transferred to farm households (about 27% for the European Union, 25% for the United States, 61% for Mexico and 64% for Canada). In the case of area payments, the percentage is systematically higher (63% for EU, 57% for the United States, 70% for Mexico and 73% for Canada), meaning that transfer efficiency through area payments is in all analysed cases higher than that of market price support measures.

Source: OECD, 2000b.

B. Exchange rate sensitivity

Market Price Support (MPS) is an important component of support to agriculture in Romania. Therefore, PSE estimates are highly sensitive to exchange rate variations. The calculations of PSEs/CSEs in this study are made at the official exchange rate, on the assumption that this rate reflects the actual economic conditions in which the government and all economic agents make their decisions. However, a second set of PSEs/CSEs was calculated using an adjusted exchange rate, based on the "Atlas Conversion Factor" calculated by the World Bank (see definition in Annex II). The complete set of results is presented in Annex II. The ratio of the adjusted rate to the official exchange rate presented in Table V.2 shows that in the pre-reform period the Leu was usually overvalued, up to 34% in 1987 and 32% in 1988. In the reform period the difference between the official and adjusted exchange rates was not large and indicates an undervaluation of 28% in 1992, followed by an overvaluation of 7% to 11% between 1994 and 1996. For the period of 1997-1999 no adjustment was made to the exchange rate.

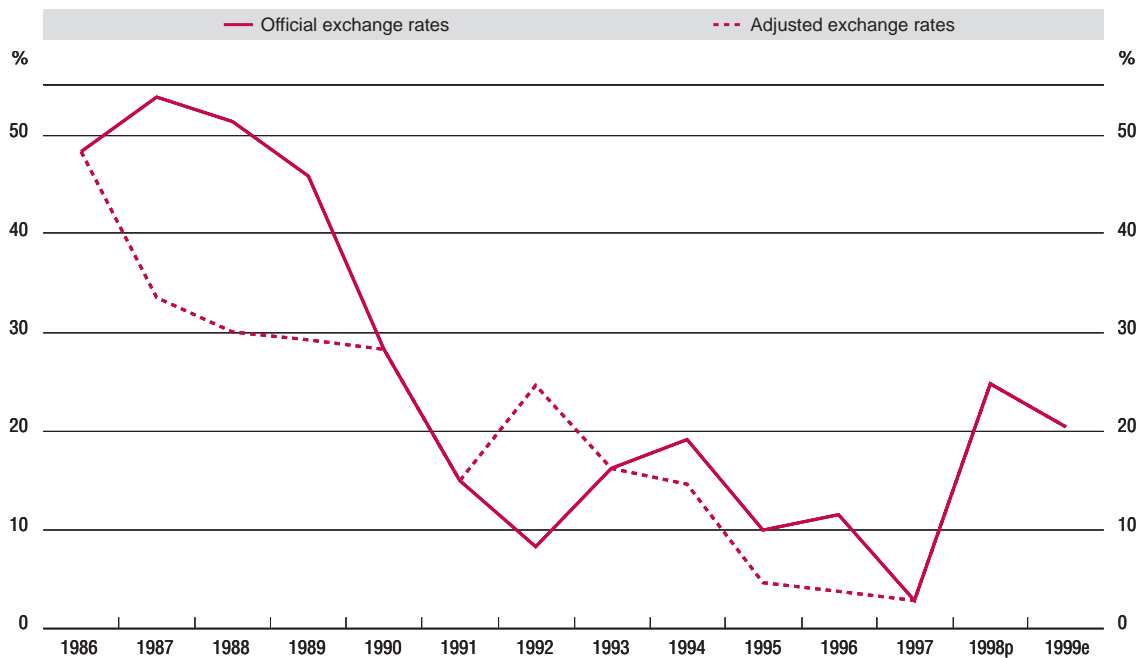
Table V.2. Official and adjusted exchange rates, Lei/US\$

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Official rate	16.2	14.6	14.3	14.9	22.4	76.4	308.0	760.1	1 655.1	2 033.0	3 083.0	7 167.9	8 875.5	15 332.8
Adjusted exchange rate	16.2	22.2	21.2	19.3	22.4	76.4	240.0	760.1	1 775.2	2 196.5	3 476.4	7 167.9	8 875.5	15 332.8
Ratio Official/Adjusted	1.00	0.66	0.67	0.77	1.00	1.00	1.28	1.00	0.93	0.93	0.89	1.00	1.00	1.00

Source: OECD.

The results of these adjustments are relatively important in the pre-reform period, when the Leu was overvalued (Graph V.3). Between 1987 and 1989, the percentage PSE at the adjusted exchange rate was about 38% lower on average. During the reform period an important disparity is observed in 1992, when the Leu depreciated significantly by 303% in nominal terms while the annual average inflation rate was 210%. As a result, the percentage PSE at the adjusted exchange rate rose to 25% compared to a fall to 8% at the official rate. Thereafter, the effects of the adjustment were relatively small with the results at both exchange rates following similar patterns.

Graph V.3. PSEs for Romania at adjusted and official exchange rates



Source: OECD.

C. Decomposition analysis of support

1. Composition of support

The shares of the different components of support in the Total Support Estimate (TSE) are presented in Table V.3.

During the *pre-reform period*, the Market Price Support was by far the most important component of the total support, reaching about 90%. The share of MPS decreased sharply in 1992 when transfers to consumers

Table V.3. **Composition of support to agricultural sector in Romania, per cent**

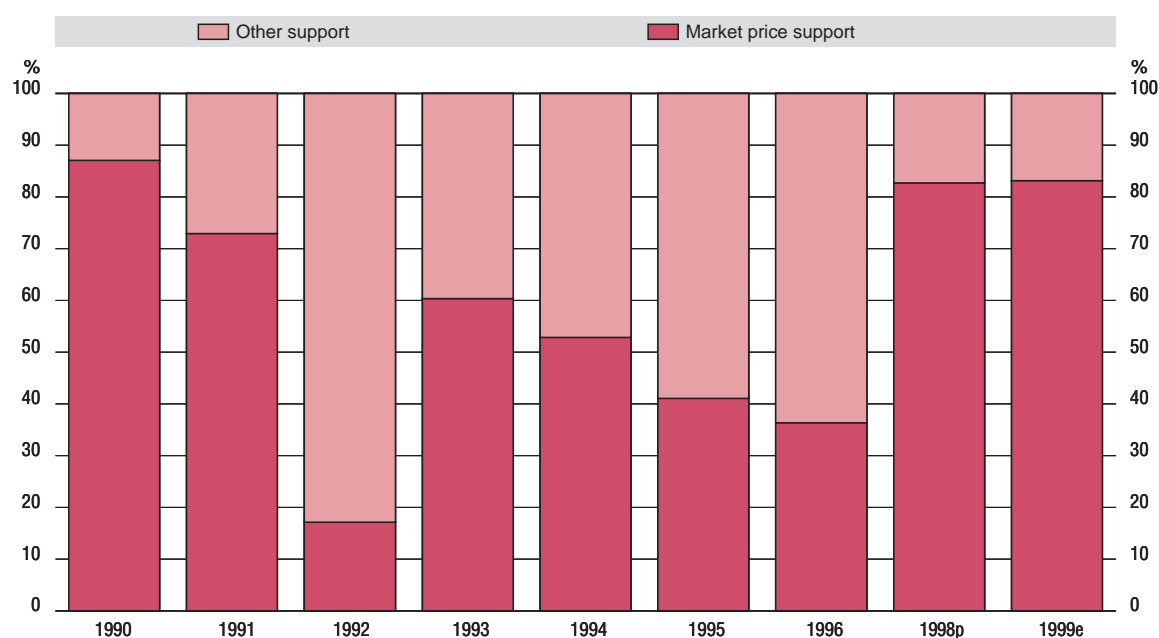
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
Total Support Estimate (TSE)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Producer Support Estimate (PSE)	95.5	95.5	95.4	94.2	93.1	80.4	49.1	75.1	85.8	68.9	74.7	65.1	95.1	94.3
<i>of which:</i>														
Market price Support	91.8	89.4	89.6	90.7	87.1	72.9	17.1	60.3	52.8	41.1	36.3	-2.5	82.7	83.1
Budgetary support	3.7	6.1	5.8	3.6	6.1	7.5	31.9	14.7	33.0	27.8	38.4	67.7	12.4	11.2
General Services (GSSE)	4.5	4.5	4.6	5.8	6.9	11.4	8.7	6.8	6.5	10.0	4.7	20.5	4.5	4.9
Transfers to consumers from taxpayers	0.0	0.0	0.0	0.0	0.0	8.1	42.3	18.1	7.7	21.1	20.6	14.3	0.4	0.8

e Estimate.

p Provisional.

Source: OECD.

reached their peak and the Leu depreciated significantly. In 1992, transfers to consumers represented 42% of total support and 63% of total budgetary transfers to agro-food sector. From 1993 to 1996, the share of Market Price Support decreased from 60% to 36% of total support. In this period, budgetary support was mainly provided through preferential credits. Their introduction increased the share of budgetary support in the total to 33% in 1994. MPS dropped substantially in 1997 to a negative level, and this drop was partly compensated by budgetary support and in particular by the vouchers to support input purchases. Input subsidies represented 50% of the total budgetary transfers to agro-food sector in 1997. In 1998-1999, MPS increased abruptly and accounted for 83% of total support (Graph V.4). The share of budgetary transfers fell to an average of 12%, even if input subsidies were continued and accounted for almost 70% of the total budgetary support.

Graph V.4. **Composition of support in Romania, 1990-1999¹**

1. In 1997 the MPS turned negative, making the presentation of the composition of support not relevant.
Source: OECD.

Table V.4 shows the shares of CSE components. The most important component is market transfers (transfers to producers and other transfers from consumers), which are the corollary on the consumer side of market price support for producers. Consumer subsidies (transfers to consumers from taxpayers) partly compensated for the negative market transfers from 1991 to 1997. The ratio of transfers to consumers from taxpayers related to market transfers shows the relative importance of consumer subsidies in offsetting the tax on consumers due to supported producer prices. Budgetary compensations to offset negative consumer market transfers ranged from 8% in 1991 to 249% in 1992, resulting in a net protection of consumers in 1992 instead of a tax.

Table V.4. **Composition of food consumer support in Romania, per cent**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
Consumer Support Estimate (CSE) ¹	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Transfers to producers														
from consumers	114.0	112.8	110.2	105.0	97.1	126.6	-62.1	156.2	123.8	160.6	266.3	1 574.5	99.2	106.9
Other transfers from consumers	-0.2	0.0	-1.2	1.2	7.2	4.2	6.7	10.3	2.9	2.5	-19.8	-23.5	3.5	4.6
Transfers to consumers														
from taxpayers	0.0	0.0	0.0	0.0	0.0	-10.6	154.8	-28.1	-15.7	-113.3	-185.6	-1 247.7	-0.5	-0.8
Excess feed cost	-13.9	-12.7	-8.9	-6.3	-4.3	-20.2	0.7	-38.5	-10.9	50.2	39.1	-203.3	-2.2	-10.7

e Estimate.

p Provisional.

1. A share greater than 100 per cent was possible because the strong negative transfers from consumers to producers were partly compensated by direct subsidies and feed cost adjustment.

Source: OECD.

2. Commodity composition

The PSE/CSE calculations do not cover all agricultural products⁵ and in the period under review, the products covered by the PSE estimates accounted for on average 60% of the total value of agricultural production. The share of livestock products was much higher (90%) than that for crops (40%). In OECD countries, the coverage varies from 40% of total production in Turkey to 94% in Finland.

Distribution of support between the different commodities as measured by the total PSE is shown in Table V.5. In the pre-reform period support to livestock dominated, increasing from 63% to 83% of the total PSE between 1986 and 1989. This was due to the higher support provided for livestock producers

Table V.5. **Distribution of total value of PSE by specific commodities, per cent**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
Wheat	7	9	8	-1	-2	36	29	30	28	-6	10	-27	5	11
Maize	25	22	18	17	16	30	25	60	12	-14	2	59	6	24
Other grains	2	3	0	-2	-1	9	-8	14	6	-3	4	0	3	4
Oilseeds	0	1	-1	-1	-1	-2	-5	1	-1	-5	-1	-31	-5	-11
Sugar	2	2	1	4	1	13	10	4	4	5	5	21	2	3
Crops	37	36	27	17	12	86	50	110	49	-23	19	22	11	31
Milk	20	18	19	26	33	17	-8	7	25	62	52	260	52	60
Beef and veal	9	9	10	15	14	-9	30	-20	-13	-12	-12	-102	1	-11
Pigmeat	17	20	21	18	24	-4	-5	8	20	31	14	-232	9	-9
Poultry	6	7	9	8	10	8	27	-3	11	20	14	56	13	21
Eggs	12	10	14	17	9	3	5	-1	8	22	14	97	15	9
Livestock	63	64	73	83	88	14	50	-10	51	123	81	78	89	69
All commodities	100	100	100	100	100	100	100	100	100	100	100	100	100	100

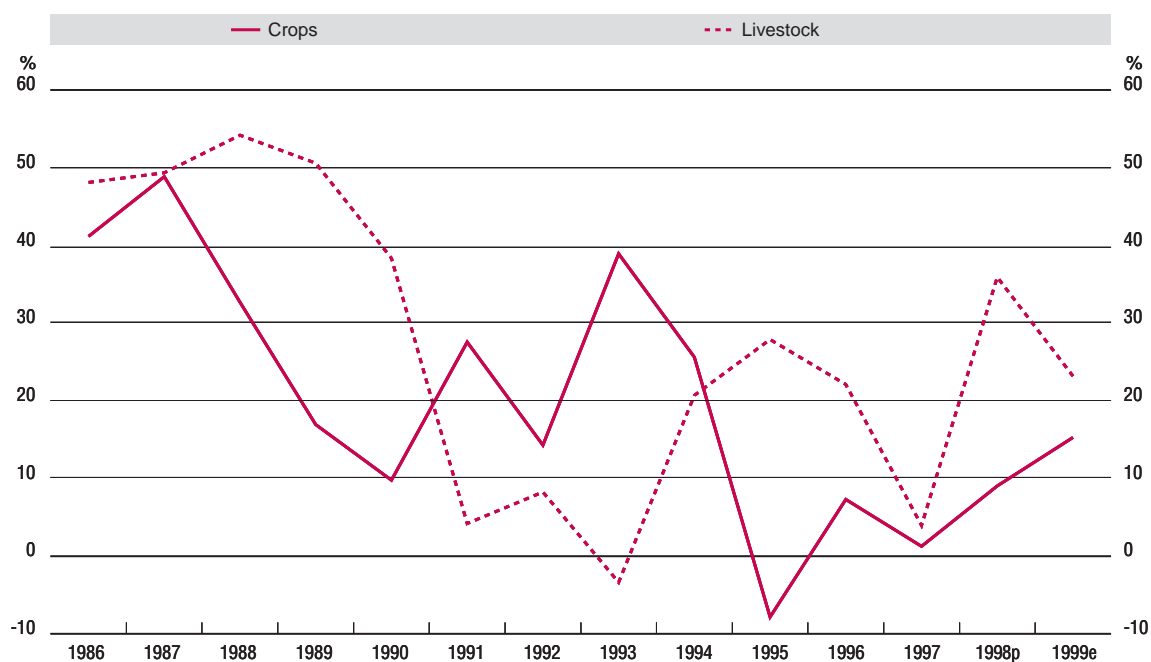
e Estimate.

p Provisional.

Source: OECD.

(in particular milk and pigmeat), but also to the larger share of PSE livestock products in the total value of agricultural production in Romania. In the reform period the share of support for specific livestock and crop products in the total PSE varied, which would indicate that government policy was not consistently supportive of any particular type of production. The share of livestock products remained high in 1990 at 88%, but dropped sharply to 14% in 1991 and to a negative contribution of minus 10% in 1993 when livestock producers were implicitly taxed. Wheat and maize were the products most supported during this period. High support for crop producers (Graph V.5) had the effect of taxing livestock producers through adjustments made in feed costs. Indeed, when feed crops are supported by higher domestic prices than world reference prices, this is taken into account in the calculations of support to livestock products, so that MPS for livestock is lowered. Conversely, MPS for livestock is increased when the price differential for feed crops is negative.

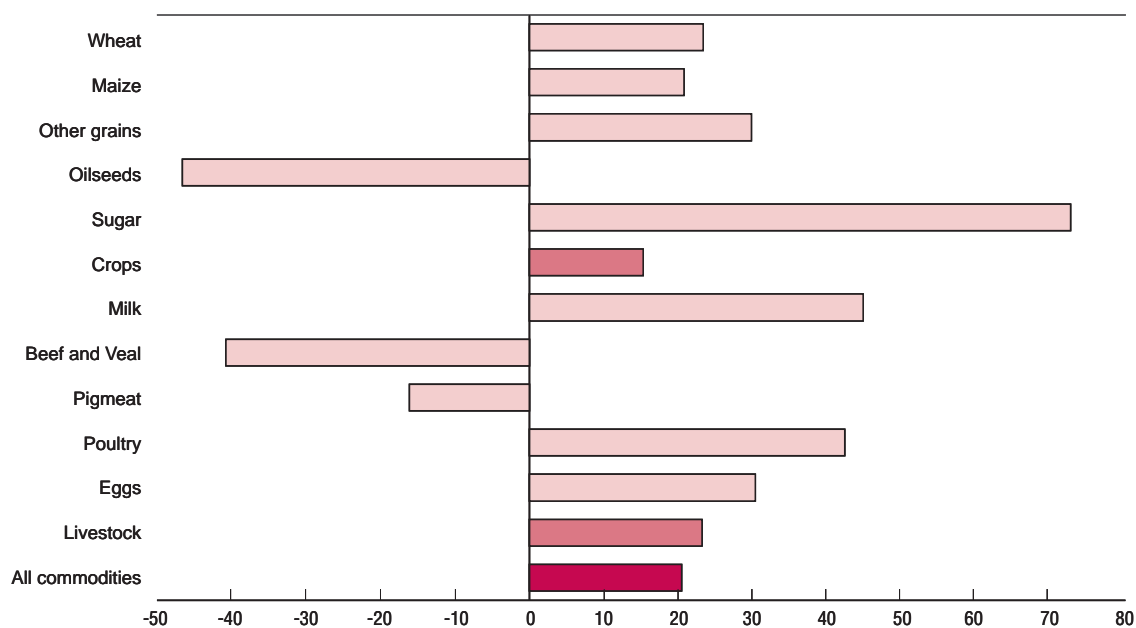
Graph V.5. Percentage PSE for crops and livestock, 1986-1999



Source: OECD.

Between 1994 and 1996 the share of livestock products rose again to above 50%, with particularly strong support for milk. In 1995 the share of 123% for livestock reflects the high percentage PSE for livestock products, as well as the taxation of crop producers induced by negative PSEs for crops products. In 1997 the total PSE fell to 3%, mainly due to the drastic drop in the livestock PSE from plus 22% to 4%, while the crop PSE decreased moderately from 7% to 1%. In 1998, support to livestock products accounted for 89% of the total positive PSE due to the strong increase in the livestock PSE (especially for milk) and the larger relative importance of PSE livestock commodities in the total value of agricultural production. This share decreased to 69% in 1999 when PSEs increased for crop products (grains and sugar) and decreased for livestock products (Graph V.6).

Graph V.6. Romanian percentage PSE in 1999, by commodity



Source: OECD.

D. Analysis of support by commodity

Detailed PSE results, on a product by product basis, are given in Tables V.6 and V.7 below and in Annex II.

Table V.6. Romanian percentage PSE, by commodity

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
Wheat	35	40	29	-4	-5	42	29	36	40	-5	17	-5	15	23
Maize	48	60	48	40	29	20	15	43	15	-12	1	6	10	21
Other grains	31	43	4	-20	-12	22	-24	44	30	-12	17	0	27	30
Potatoes (not included in the aggregation)	22	25	37	37	46	63	66	72	29	34	71	67	61	34
Oilseeds	7	15	-15	-10	-16	-10	-15	5	-9	-17	-4	-28	-29	-47
Sugar	64	54	40	55	13	70	56	63	61	50	55	53	57	73
Crops	41	49	33	17	10	28	14	39	26	-8	7	1	9	15
Milk	64	58	54	59	61	22	-8	10	36	42	40	37	57	45
Beef and veal	50	51	56	59	35	-19	30	-51	-49	-27	-44	-58	2	-41
Pigmeat	42	49	53	36	31	-4	-2	7	22	20	12	-40	13	-16
Poultry	26	35	45	38	30	15	27	-8	34	36	29	23	41	42
Eggs	57	49	62	65	30	6	7	-3	29	48	32	39	52	30
Livestock	48	49	54	51	38	4	8	-3	21	28	22	4	36	23
All commodities	48	54	51	46	28	15	8	16	19	10	12	3	27	21

e Estimate.

p Provisional.

Source: OECD.

Table V.7. Romanian percentage CSE, by commodity

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
Wheat	-24	-28	-21	4	4	-22	77	-15	-9	27	15	11	-4	-12
Maize	-12	-22	-18	-14	-10	-7	-2	-11	-2	3	1	-1	-1	-4
Other grains	-9	-7	-1	7	5	-8	16	-19	-10	13	-1	5	-12	-10
Potatoes (not included in the aggregation)	-13	-19	-28	-28	-30	-59	-53	-56	-22	-29	-58	-55	-50	-27
Oilseeds	4	-5	31	13	4	16	46	-2	32	23	24	39	34	49
Sugar	-62	-52	-38	-54	-10	-68	-10	-50	-52	-44	-47	-49	-55	-72
Crops	-21	-30	-22	-14	-11	-34	-8	-36	-12	-5	-20	-15	-26	-18
Milk	-75	-68	-59	-60	-60	-27	25	-20	-36	-33	-34	-35	-58	-47
Beef and veal	-73	-70	-67	-63	-36	2	-14	33	43	40	52	58	-7	22
Pigmeat	-52	-55	-58	-41	-33	1	18	8	-2	11	39	48	-13	11
Poultry	-46	-51	-57	-50	-36	-18	-16	-2	-22	-7	-1	-22	-43	-50
Eggs	-71	-62	-69	-70	-33	-12	-7	-24	-33	-43	-29	-40	-54	-39
Livestock	-62	-60	-61	-55	-40	-10	5	-1	-14	-10	-4	-3	-38	-29
All commodities	-46	-48	-44	-37	-27	-15	5	-15	-12	-3	-2	0	-26	-21

e Estimate.

p Provisional.

Source: OECD.

1. Wheat

Wheat represents about 12% of the value of Romanian crop production. Wheat PSEs fluctuated significantly between 1986 and 1998. The average percentage PSE was high at about 35% during 1986-1988, due to the fact that domestic prices were substantially higher than EU reference prices at official exchange rates. The sharp increase in reference prices led to a fall in wheat PSEs to minus 4 and minus 5% respectively in 1989 and 1990. Then the percentage PSE increased again to 42% in 1991 following the domestic price increase. The percentage PSE remained at high levels between 1991 and 1994, even if the depreciation of the currency resulted in a sharp decline in the market price support in 1992 to a negative level; this fall was compensated by budget expenditures (mainly input subsidies), leading to a positive PSE of 29%. In 1993 a minimum guaranteed price for wheat was introduced, wheat being considered a commodity of "national importance". In 1995, the percentage PSE fell to minus 5% following an increase in the reference price not reflected in the domestic producer price. In 1996, large budget transfers consisting mainly of input subsidies, offset the negative market price support and resulted in a positive PSE of 17%. In 1997, the input subsidies did not compensate for the dramatic fall in market price support following the overall price and trade liberalisation and the percentage PSE dropped to minus 5%. The fall in the EU reference price, not transmitted to the domestic producer price, led to a large increase in the percentage PSE for wheat to 15% in 1998 and to 23% in 1999.

The CSE for wheat was also quite erratic, mirroring to some extent the development of MPS on the PSE side. Consumer subsidies were applied between 1991 and 1996. They compensated for a large part of market transfers when they were negative and contributed to an increase in consumer protection when market transfers were positive (*e.g.* in 1992, 1995 and 1996). In 1998, market transfers became positive contributing to an implicit tax on consumers of 2%, which rose to 12% in 1999.

2. Maize

Maize is the most important grain in Romania, accounting on average for 50% of total grain output and 20% of total crop production value during the period under review. The average level of support to maize in the pre-reform period amounted to 49% and was higher than for wheat and other grains. In the reform period, percentage PSEs declined gradually during 1990-1992 from 29% to 15% with the depreciation of the Leu, then increased again to 43% in 1993 when the domestic price for maize increased significantly (by 304%) and the Leu appreciated. Market Price Support was negative in 1995 and 1996, leading to

negative PSEs except for 1996 when budget transfers were large enough to offset the negative Market Price Support. Between 1997 and 1999, a fall in the EU reference price below the domestic price led to a rise in percentage PSE from 6% to 21%.

The CSE for maize was mostly influenced by market transfers and the feed cost adjustment, as a limited consumer subsidy was only applied in 1993. Maize consumers were implicitly taxed during the whole period, except for 1995 and 1996 when market price support was negative.

3. *Other grains*

Other grains included in the PSE calculations for Romania are barley and oats. Barley represents 87% of the combined output of these two grains, and barley and oats together account for an average of 4% of crop production value. Support for other grains was generally much lower than that for wheat and maize. It was high in percentage terms in 1986 and 1987 at 31% and 43%, but dropped to 4% in 1988, minus 20% in 1989 and minus 12% in 1990, due to a sharp increase in the EU reference price for barley. In 1991, domestic producer prices rose, which resulted in a positive PSE of 22%. The depreciation of the Leu contributed to a negative PSE of minus 24% in 1992. In 1993 and 1994, the increase in the domestic price together with important input subsidies and credit transfers combined with the strong appreciation of the Leu, resulted in high positive PSEs of respectively 44% and 30%. The barley reference price increased again between 1995 and 1997, resulting in a negative MPS in 1995 and 1997, compensated in 1997 by budget transfers. In 1998, the high percentage PSE (27%) reflected the fall in world reference prices. The price differential widened in 1999 and the percentage PSE rose to 30%.

The CSE for other grains was influenced by market transfers and the feed cost adjustment, as consumer subsidies were applied for barley only in 1993. Consumers of barley and oats were implicitly taxed when Market Price Support was positive and supported in the opposite case. This means that even if the PSE was positive in 1997, due to budget transfers, the CSE was also positive due to the negative Market Price Support. In 1998 and 1999, the percentage CSE was negative reflecting positive Market Price Support.

4. *Potatoes*

Potatoes are an important crop in Romania with an average share in the total value of crop production at about 12%. Their share in the total value of agricultural production was 7% for the period 1986-1999. Individual results of PSE estimates for potatoes are presented in Annex II (Tables 2.i. and 3.i.) but due to methodological problems related to reference prices and negligible amounts of potatoes traded internationally, potatoes are not included in the calculation of aggregate PSE. However since potatoes are such an important agricultural commodity in Romania, an attempt has been made to estimate the level of support by using the standard PSE methodology.

The level of support to potato producers was highly positive during the whole period, ranging from 22 to 72%. Changes in percentage PSEs for potatoes reflected mainly fluctuations in Market Price Support, as budget transfers were low. Variations in the level of MPS are mainly attributable to wide fluctuations in the world reference price (German producer price) and in the exchange rate. The highest percentage PSE was at 72% in 1993, when the Leu appreciated and the reference price dropped sharply. Percentage PSEs decreased gradually from 71% in 1996 to 34% in 1999.

High negative CSEs for the whole period under review reflected the high negative consumer market transfers, as no consumer subsidy was applied (except for a low amount in 1991) and changes in CSEs mirrored the developments of market price support on PSE side. Potato consumers were implicitly taxed during the whole period 1986-1999.

5. *Oilseeds*

Sunflower is the major oilseed crop product in Romania, accounting for about 80% of the total oilseed output, the remaining part being mainly soybeans. Nevertheless, oilseeds contribute a small part to the total value of crop production (about 3%). The level of support has been low compared to other PSE products, both in absolute and percentage terms, with the exception of 1986 and 1987 when support to

oilseeds was positive with PSEs of 7% and 15%, respectively. As of 1988, the percentage PSE has been negative with the exception of 1993. The domestic price for sunflower was kept below the reference price from 1988 to 1999, resulting in a negative market price support. In 1993, this was more than compensated by budget transfers (input subsidies and credit programmes for crop producers), which resulted in positive PSEs at 5%. In 1999, oilseed producers were implicitly taxed at minus 29%.

The CSEs mirrored the MPS component of the PSE. The percentage CSE for oilseeds was positive during the whole period under review, except in 1987 and 1993. The effect of market price support for oilseeds was moderated by consumer subsidies for sunflower in 1991 and amplified in 1992 when consumer subsidies were added to positive market transfers, leading to a positive support to oilseeds consumers of 42%. In 1999, oilseed consumers were implicitly subsidised at 49%, which reflected highly negative market price support.

6. *Sugar*

Sugar beet accounts for only about 1% of the total value of agricultural production in Romania and 2% of the value of crop production. Therefore, the support for sugar producers represents a minor part of the total support to agricultural producers. As measured by the percentage PSE, support for sugar producers was highly positive during the period under review, at more than 50% for most years. The high PSEs reflect the higher domestic producer price compared with the EU reference price, as no major budget transfers were allocated to sugar producers. The support estimated for 1990 went down to 13% in line with the depreciation of the Leu. The percentage PSE in 1999 was high at 73% due to the sharp increase in domestic price and to the fall in reference price.

The CSEs were the corollary on the consumer side of the Market Price Support. Sugar consumers were highly taxed during the whole period, even between 1991 and 1993 when consumer subsidies were applied. In 1999, the percentage CSE was minus 72%, clearly reflecting highly positive Market Price Support.

7. *Milk*

Milk is the most highly supported livestock product in Romania, and represents 24% of total livestock production value. Market Price Support was by far the most important component of support during the whole period under review, and domestic producer prices were constantly kept above the New Zealand reference price, except for 1992. High Market Price Support was supplemented by per head payments and input subsidies. Percentage PSEs were high during the pre-reform period and in 1990, at an average level of 60%. PSEs declined in 1991 and 1992 to 22 and minus 8%, respectively, in line with the increase in the reference price and the strong depreciation of the currency. Then, the level of support increased again in 1993 due to the combined effect of the increase in domestic price, the drop in the New Zealand price and the appreciation of the Leu. Thereafter, the percentage PSE was maintained at high levels largely due to the minimum guaranteed price system applied to products of "national importance". In 1997, the percentage PSE remained high at 36% due to the decrease of the New Zealand reference price and the rise of the domestic producer price for milk. In 1998, the level of support peaked at 58% following the fall in the reference price and higher domestic prices, and decreased slightly to 45% in 1999 in line with the real depreciation of the currency.

The percentage CSEs for milk reflect changes in the PSE market price support component and in consumer subsidies applied from 1991. Consumer subsidies compensated for a rather small part of large negative consumer market transfers. As a result, milk consumers were implicitly taxed over the whole period, with the exception of 1992 when Market Price Support was negative.

8. *Beef and veal*

Beef and veal account for 12% of the total value of livestock production. As for all livestock commodities in Romania, Market Price Support was by far the most important component of the beef PSEs during the whole period under review. As for milk, per head payments and input subsidies were also allocated to beef producers. The support was high during the pre-reform period, averaging 54%, then declined to

35% in 1990 and fell to minus 19% in 1991 due to a rise in the reference price, the depreciation of the Leu and a fall in budget transfers. Thereafter, the PSE went up again in 1992 at 30% when the domestic price rose sharply. From 1993, the domestic producer price was lower than the world reference price (except in 1998) and beef producers were taxed during the whole period up to 1999 with the exception of 1998 when PSEs were slightly positive at 2%. The producer taxation reached a peak in 1997 at minus 58% when the economy was liberalised, and was still high in 1999 at minus 41%.

The CSEs for beef and veal in general reflected market transfers, as consumer subsidies were only applied in 1992 and 1993. Implicit taxation of beef consumers during the pre-reform period was high, ranging from minus 63% to minus 73%. After some fluctuations at the beginning of transition, since 1993 percentage CSEs have been positive (except in 1998) reflecting negative Market Price Support and indicating implicit support for consumers.

9. Pigmeat

Pigmeat is the most important livestock product in Romania, representing 29% of the total value of livestock production. The percentage PSE was high and positive during the pre-reform period as well as in the first reform year, but then it fell from 31% in 1990 to minus 4% in 1991, in line with the depreciation of the Leu and the partial price liberalisation. In 1993, the introduction of a minimum guaranteed price for pigmeat, together with the appreciation of the currency and large budgetary transfers to pigmeat producers (input subsidies and preferential credit transfers), contributed to the recovery of PSEs, which stayed at positive levels up to 1996. Despite the fact that in 1996 domestic prices fell below the reference price, high budgetary transfers offset this tax on producers resulting in a positive PSE of 12%. In 1997 and 1998, as most input subsidies and credit concessions were discontinued, the percentage PSE reflected mainly price and exchange rate movements resulting from the liberalisation of the economy. The PSE fell significantly to a negative level of minus 40% in 1997, but was restored to a positive 13% in 1998. In 1999, the decline in domestic producer price, together with the devaluation of the currency, contributed to the fall in the PSEs to minus 16%.

Up to 1991, the CSEs responded to the developments of market transfers, and pigmeat consumers were implicitly taxed between 1986 and 1990. Consumer subsidies were introduced in 1991 and maintained at high levels until 1996 (however, premia payments due in 1996 continued to 1997), since pigmeat was a commodity of "national importance". The subsidies to a large extent compensated the negative consumer market transfers (fully in 1993 and 1995), and even led to a strong positive CSE at 39% in 1996 when the negative Market Price Support was more than offset by budget transfers. In more recent years, the CSEs fluctuated, reflecting changes in Market Price Support, and in 1999 were positive at 11%.

10. Poultry

Poultry represents 15% of the value of livestock production. Support to poultry producers in Romania was positive during the whole period under review (except in 1993), with the percentage PSE ranging from 15% to 45%. During the pre-reform period, the measured support was high at an average level of 36%, but it decreased gradually to 15% in 1991 following the depreciation of the Leu and the rise in the EU reference price. The percentage PSE was negative in 1993 at minus 8%, despite the introduction of a minimum guaranteed price. The sharp increase in PSEs between 1994 and 1996 resulted from the important budget transfers allocated to poultry producers, mainly through input subsidies and preferential credit transfers. The measured support dropped from 29% in 1996 to 23% in 1997, following price liberalisation and cuts in budgetary support. In 1998, the percentage PSE rose to 41% due to a substantial rise in producer prices and the exchange rate recovery. In 1999, the percentage PSE remained high at 42%, reflecting combined effect of the increased domestic price, lower EU reference price and the real depreciation of the currency.

Poultry consumers were implicitly taxed during all the years covered, as consumer subsidies applied from 1991 to 1996 did not compensate for a large part of the negative consumer transfers. In 1997, the consumer subsidies were removed (even if some premia payments due in 1996 were still paid) and in 1999 the CSE, closely reflecting the producer support, fell to minus 50%.

11. Eggs

Eggs account for 11% of the value of livestock production. Egg production was strongly supported, both in absolute and relative terms during the whole period 1986-1998 with the exception of 1993. Indeed, the level of support was highly positive during the pre-reform period at an average level of 58%, reaching 65% in 1989. Thereafter, market price support decreased due to the combined effects of movements in domestic and world prices and of Leu depreciation, driving the PSE down to minus 3% in 1993. Then the PSE increased in line with the appreciation of the currency to 29 and 48% in 1994 and 1995, respectively and remained high up to 1999.

Egg consumers were implicitly taxed during the whole period and consumer subsidies were not applied except for 1991. Thus, the negative CSEs closely reflected the developments in Market Price Support and the feed adjustment.

NOTES

1. Budgetary support in this chapter includes all non-price support to producers, *i.e.* not only budgetary payments, but also quasi-fiscal transfers arising from preferential credits (see Part IV, section J).
2. Members of the OECD since 1995 (Czech Republic) and 1996 (Hungary and Poland).
3. In the OECD methodology, consumer is understood as immediate buyer of agricultural products. This is why consumer and producer prices are identical in both the CSE and PSE calculations.
4. In Romania, there are budgetary transfers to processors to compensate for a part of the price they paid to producers (see Part IV, section B).
5. The standard OECD approach in PSE/CSE calculations is to cover all products whose share in the total value of agricultural production is at least equal to 1%. Following this approach, the products covered in the PSE/CSE calculations for Romania are: wheat, maize, other grains (barley and oats), oilseeds, sugar beet, milk, beef and veal, pigmeat, poultrymeat and eggs. PSEs/CSEs are also calculated for potatoes, but results are not included in the overall estimate of support in Romania for the reasons explained in the section on potatoes (see below).

ENVIRONMENTAL PERFORMANCE OF ROMANIAN AGRICULTURE DURING THE TRANSITION: SELECTED ENVIRONMENTAL INDICATORS

A. Introduction

The importance of sustainable development is gaining more recognition in Romania, and the principles of sustainable development are likely to shape Romania's agricultural policies in the long run. Sustainability implies using resources, both natural and human made, in a way that satisfies current needs without jeopardising the capacity of future generations to meet their own essential requirements (OECD, 1995). The concept of sustainability is multifaceted, embracing the global, sectoral and enterprise levels, as well as the economic, social and environmental aspects of development. Environmental aspects are of particular importance when considering the sustainability of agriculture, a sector uniquely bound to natural resources – soil, water, air. Agricultural activities have both beneficial and harmful impacts on the environment through changing the quality and the quantity of locally available natural resources. Environmentally sound performance is a key component of sustainable development of the agricultural sector.

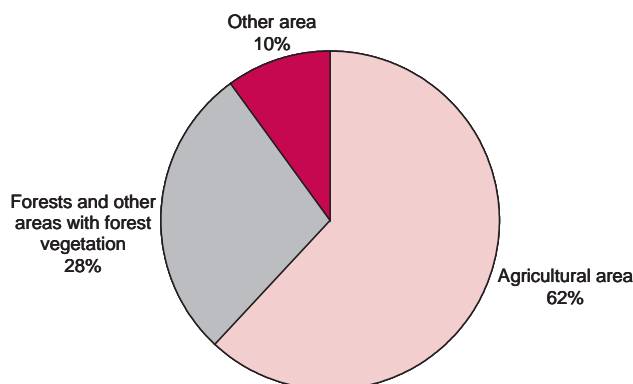
This Annex presents an overview of the environmental performance of Romanian agriculture during the transition period based on a number of agri-environmental indicators, such as: *i*) total and agricultural land use; *ii*) nutrient use; *iii*) pesticide use; *iv*) water use; *v*) soil quality; *vi*) water quality; *vii*) organic farming and *viii*) agri-environmental expenditure. These items are part of a more comprehensive system of agri-environmental indicators being developed by the OECD for agri-environmental analysis and monitoring as well as for evaluation and improvement of agricultural and environmental policies (OECD, 1999c; OECD, 1999d; OECD, 2000a).

B. Total and agricultural land use

1. Total land use

About 62% of the Romanian territory is used for agricultural production, 28% is forested, and the remaining 8% represents other uses (areas under construction, roads and railways, waters and ponds, and others) (Annex Graph I.1). The share of agricultural land in Romania is approximately the same as in such OECD counties as Australia,

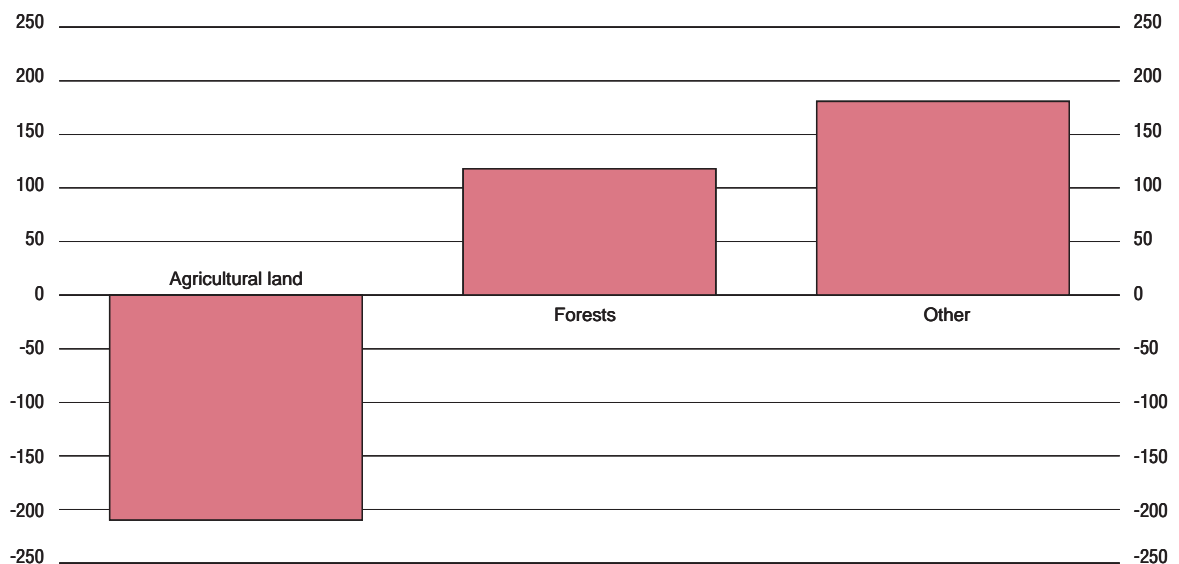
Annex Graph I.1. Structure of total land use in Romania, 1995-1997 average



Denmark, Hungary, Ireland and New Zealand. As in the majority of OECD countries, agriculture in Romania is the economic activity with the largest land use.

Between 1985 and 1988, agricultural land in Romania had been expanding and reached 15.1 million hectares in 1988, but in 1989 it was reduced by 0.3 million hectares. Since 1990, changes have been marginal and agricultural land area has remained at approximately 14.8 million hectares. However, in 1998 agricultural land in Romania was almost 2% down from its 1985-1989 level (Annex Graph I.2). This corresponds roughly to the average decrease in agricultural land in the OECD area, including two OECD central and eastern European countries – Poland and the Czech Republic; contraction of agricultural land in Hungary, the third OECD central and eastern European country member was somewhat stronger. In Romania, transfer of land to forests and for construction was the major cause of agricultural land loss after 1989 (Annex Table I.1).

Annex Graph I.2. **Net changes in total land use, 1985-1989 to 1995-1997**
Thousand hectares



Source: National Commission for Statistics.

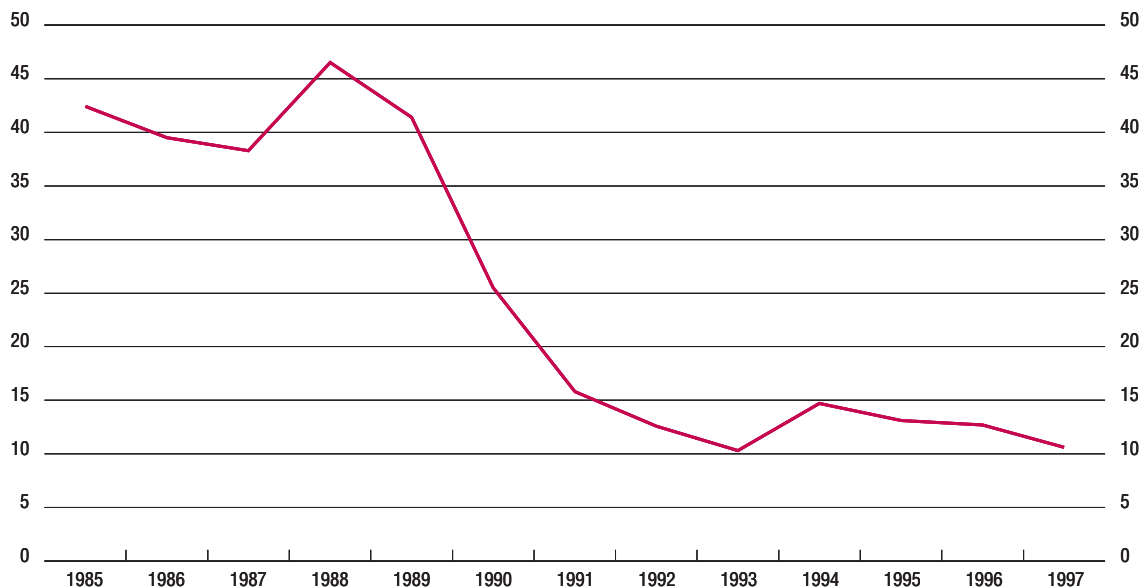
Annex Table I.1. **Conversion of land to and from agriculture**
Thousand hectares

	Conversion of land to agriculture			Conversion of land from agriculture			Net change in agricultural land		
	1985-1989	1990-1994	1995-1997	1985-1989	1990-1994	1995-1997	1985-1989	1990-1994	1995-1997
Forest and wooded land	–	6	1	103	–	8	–103	6	–7
Construction	–	2	–	–	8	–	0	–6	0
Waters and ponds	3	16	1	–	–	–	3	16	1
Other uses	86	24	3	248	–	1	–162	24	2
Total	89	48	5	351	8	9	–262	40	–4

Source: Estimations based on National Commission for Statistics and MoAF data.

During 1985-1997 the forestland remained relatively stable, covering an area of about 6.3 million hectares. However, a sharp decline in the forest regeneration rate since 1990 is a cause for concern. In 1997, the afforested area comprised 10 600 hectares, or only 25% of its average level in 1985-1989 (Annex Graph I.3), with the annual rate of regeneration declining from about 0.6% before 1989 to less than 0.2% in 1996-1997. Industrial pollution affects about

Annex Graph I.3. **Afforestation in Romania**
Thousand hectares



Source: National Commission for Statistics.

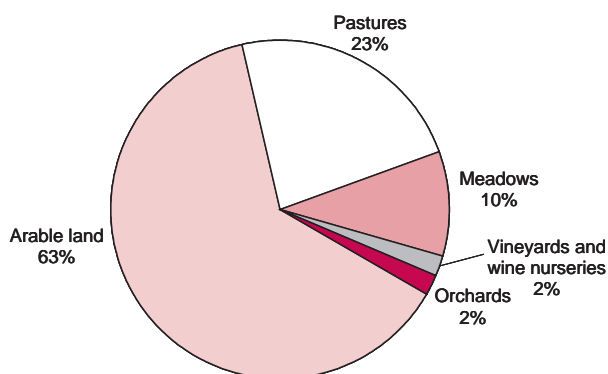
5% of the forest area (including that in important agricultural regions). The incidence of dryness and defoliation of forests is growing. Altogether, this indicates an emerging process of forest degradation.

2. *Agricultural land use*

About 63% of agricultural land in Romania is used for arable farming, 23% is under permanent pasture, 10% under meadows; vineyards and orchards account for about 4% (Annex Graph I.4).

The changes in the structure of agricultural land since the start of the transition indicate a move towards less intensive farming. Arable, orchard and since the mid-1990s also vineyard areas have been shifted to pastures and

Annex Graph I.4. **Structure of agricultural land, 1995-1997 average**



Source: National Commission for Statistics.

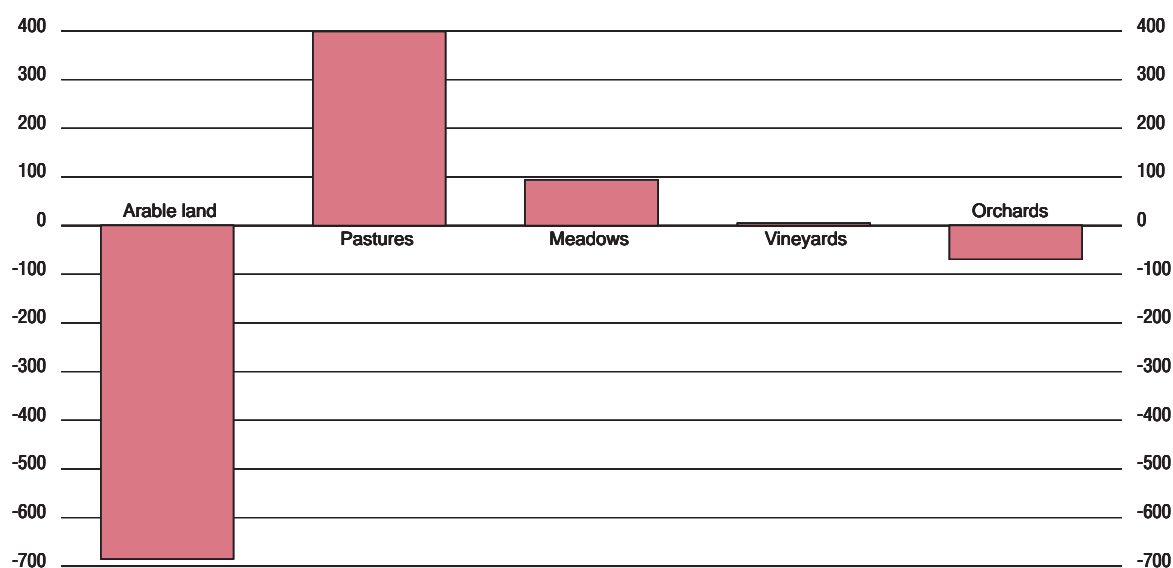
meadows (Annex Table I.2, Annex Graph I.5). A shift towards more extensive types of farming, such as pastures and meadows, suggests potentially less negative impact on the environment, provided however, that these lands are managed in an environmentally sound way.

Annex Table I.2. **Agricultural land use**
Thousand hectares

	1985-1987	1990-1994	1995-1997	Per cent change, 1995-1997, 1985-1987 = 100
Total agricultural land	15 050	14 790	14 793	-2
<i>of which:</i>				
Arable land	10 023	9 382	9 339	-7
Pastures	2 999	3 333	3 398	13
Meadows	1 402	1 479	1 496	7
Vineyards and wine nurseries	284	293	289	2
Orchards including tree nurseries	341	303	272	-20

Source: National Commission for Statistics.

Annex Graph I.5. **Net change in agricultural land, 1985-1987 to 1995-1997**
Thousand hectares



Source: National Commission for Statistics.

C. Nutrient use

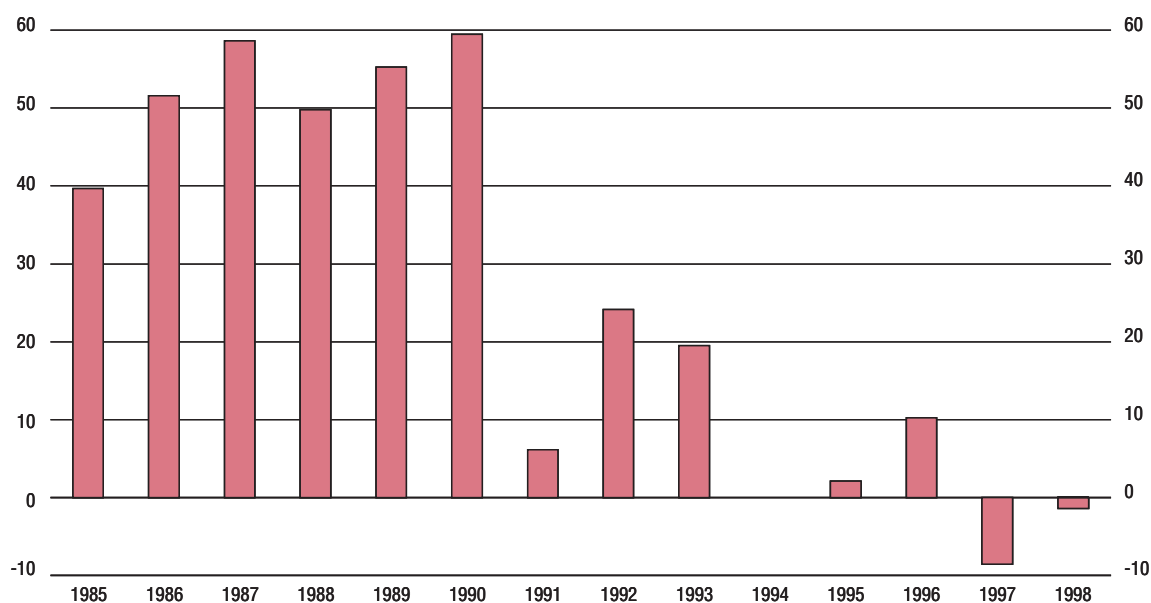
A key issue with respect to nutrient use is the need to maintain sufficient nutrients to ensure the sustainable use of soil resources required for crop and forage productivity. This has to be balanced with the need to reduce emissions from surplus agricultural nutrients causing water and air pollution and global warming. The *nutrient balance indicator* measures the difference between nutrient inputs into and outputs from an agricultural system, establishing a link between nutrient use, changes in environmental quality, and the sustainable use of soil nutrient resources. A persistent surplus indicates potential environmental pollution, while a persistent deficit indicates potential agricultural sustainability problems (OECD, 2000a).

There are several methods to measure the inputs and outputs for a nutrient balance, and the most commonly used are the soil surface and the farm gate balance. A large number of researchers, OECD countries and international organisations are using modified versions of the so-called “soil surface balance” across a range of agricultural nutrients, but typically nitrogen, phosphorous and potassium. The soil surface balance calculates the difference between the total quantity of nutrient inputs entering the soil and the quantity of nutrient outputs leaving the soil annually (OECD, 2000a).

This Annex provides preliminary estimates for the *soil surface nitrogen balance* for Romania, calculated in accordance with OECD methodology (Annex Box I.1.). This is a complement to the same type of estimations done by the OECD for member countries.

The estimates for Romania indicate three periods in the evolution of the nitrogen balance (Annex Graph I.6): i) between 1985 and 1990 nitrogen surpluses averaging 50 kg per hectare of agricultural land; ii) between 1991 and 1996 a sharp fall in nitrogen surplus to 12 kg per hectare; iii) in 1997 and 1998 a negative balance, suggesting net withdrawals of nitrogen from the soil.

Annex Graph I.6. **Romania's agricultural nitrogen balance estimate, 1985-1997**
Nitrogen kg/hectare of agricultural land



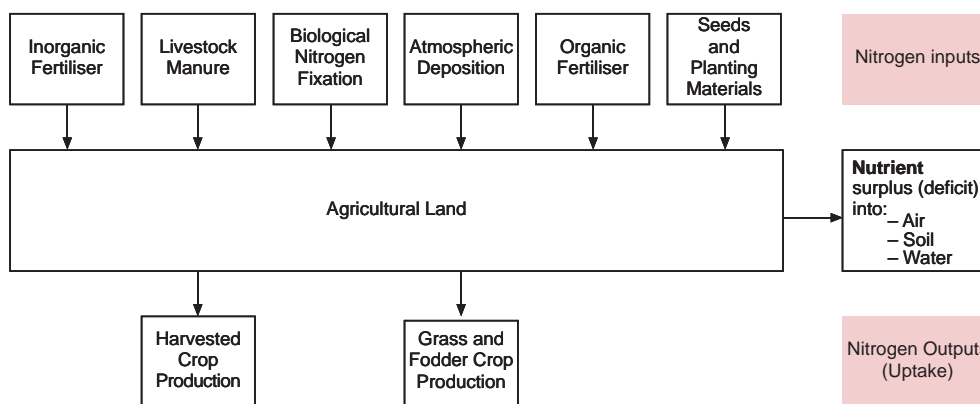
Source: OECD Secretariat.

The situation in Romania is similar to that observed in the three central and eastern European OECD members, the Czech Republic, Hungary and Poland. Substantial reduction of nitrogen surplus in these countries was driven by such transition phenomena as the sharp decrease in cattle numbers, implying the fall in application of organic fertilisers; reduction in use of inorganic fertilisers; neglect of proper crop rotations, etc. These were triggered by the fall in output due to reduced food demand, collapse in agricultural support levels, the downsizing of input subsidies and increasing debt levels in the farm sector. For most other OECD countries, the trend in nitrogen balance surpluses over the last decade is also downward or constant. But, in contrast to transition countries this has been linked to supply controls (*e.g.* reduction in dairy cattle due to milk supply control), set-aside schemes, specific policies aimed at reducing nitrogen surpluses and limiting fertiliser use; there are also indications of improved efficiency of fertiliser use. The trend in the nitrogen balance in Romania, characterised by a sharp drop in the surplus and the emergence of deficits in most recent years, signals the potential problem of sustainable use of soil resources.

Annex Box I.1. The OECD soil surface nitrogen balance

The soil surface nitrogen balance calculates the difference between the total quantity of nitrogen inputs entering the soil and the quantity of nitrogen outputs leaving the soil annually (Annex Box Figure I.1).

Annex Box Figure I.1. The main elements in the OECD soil surface nitrogen balance



The annual total **quantity of inputs** for the soil surface nitrogen balance, includes the addition of:

- *inorganic or chemical nitrogen fertiliser*: quantity consumed by agriculture;
- *net livestock manure nitrogen production*: total numbers of livestock in terms of different categories according to species (*e.g.* chickens, turkeys), gender, age and purpose (*e.g.* milk cows, beef cattle), multiplied by coefficients describing the quantity of nitrogen contained in the manure generated per animal per year, net of the nitrogen loss through the volatilisation of ammonia to the atmosphere from livestock housing and stored manure;
- *biological nitrogen fixation*: area of harvested legume crops (*e.g.* soybeans, alfalfa) multiplied by coefficients of nitrogen fixation, plus the nitrogen fixation by free living soil organisms computed from the total agricultural land area multiplied by a single coefficient of nitrogen fixation;
- *atmospheric deposition of nitrogen*: total agricultural land area multiplied by a single coefficient of nitrogen deposited/kg/hectare;
- *nitrogen from recycled organic matter*: quantity of sewage sludge applied to agricultural land multiplied by a single coefficient of nitrogen content of sewage sludge;
- *nitrogen contained in seeds and planting materials*: quantity of seeds and planting materials (*e.g.* cereals, potato tubers) multiplied by coefficients of nitrogen content of seeds and planting materials.

The annual total **quantity of outputs**, or nitrogen uptake, for the nitrogen balance includes:

- *crop and fodder production*: quantity of harvested crop production (*e.g.* cereals, root crops, fruit and vegetables); harvested fodder crops (*e.g.* fodder beets, silage maize); and grass from temporary and permanent pasture, respectively multiplied by coefficients of nitrogen uptake to produce a kilogram of output.

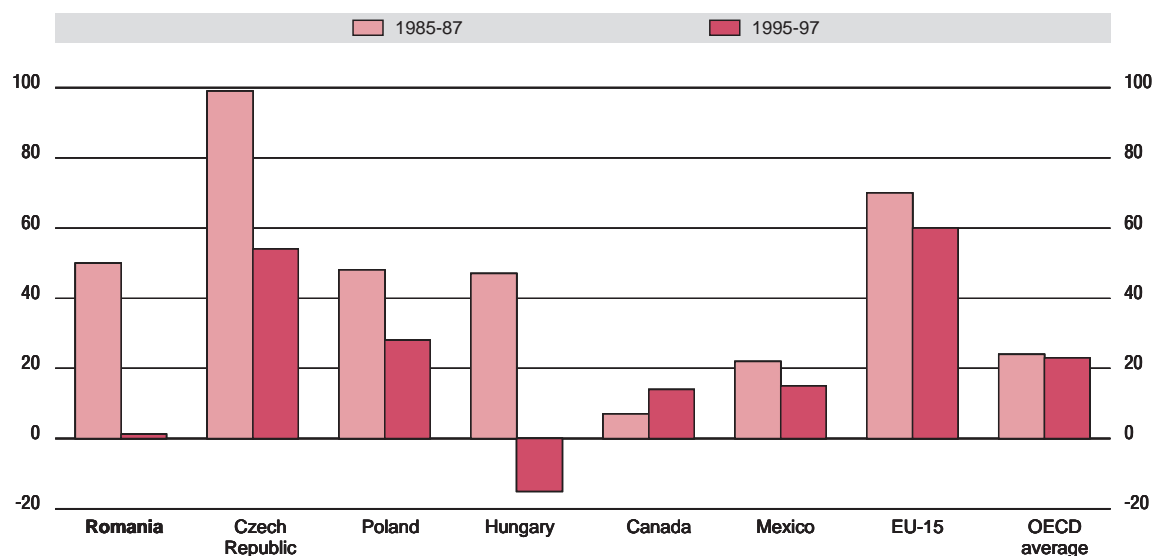
The calculation of the soil surface balance, as defined above, is a modified version of the so-called “*gross balance*”, which provides information about the complete surplus (deficit) of nutrients in the soil, water and air from an agricultural system. A “*net balance*” can be calculated by subtracting the nitrogen loss into the air, such as nitrous oxide and through denitrification of soil nitrate.

A nutrient balance surplus or deficit, at least over the short term, does not unambiguously indicate a beneficial or harmful environmental or resource impact. A nutrient balance can only show the potential for environmental damage or unsustainable use of soil resources, not actual pollution or resource depletion. Nutrient balances do, however, provide a practical and relatively low cost, if indirect, estimate of potential environmental and resource sustainability effects.

Source: OECD, 2000a.

Annex Graph I.7. Nitrogen balance estimates for Romania and selected OECD countries

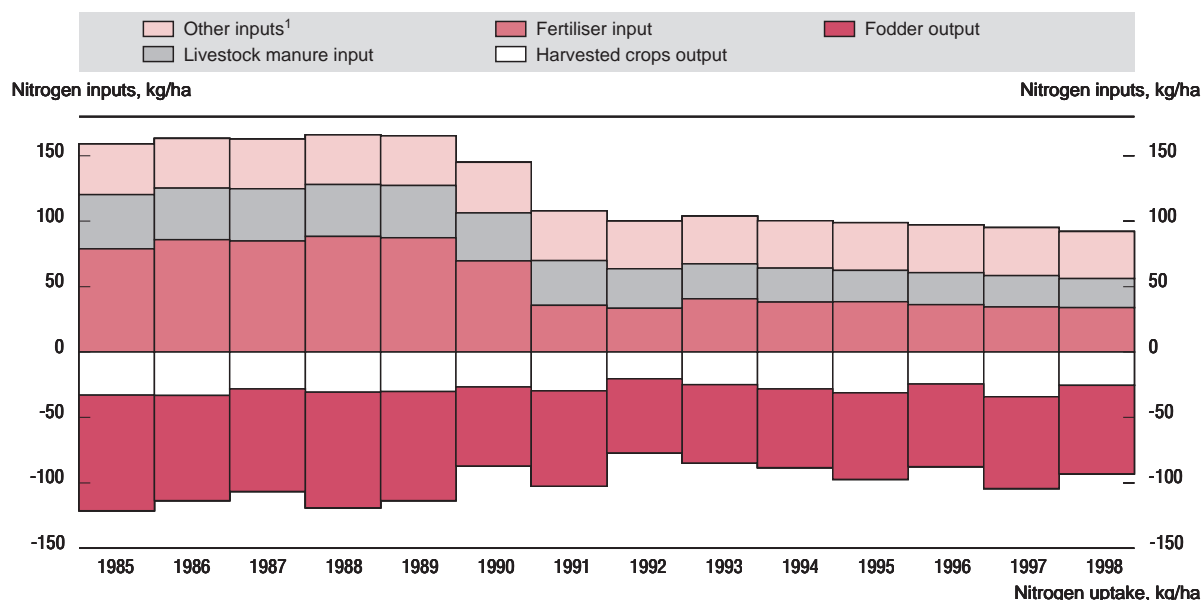
Nitrogen kg/ha of agricultural land



Note: Data for EU-15 and OECD include eastern and western Germany and exclude Luxembourg for the whole 1985-1997 period.

Source: OECD Secretariat.

Annex Graph I.8. Romania: trends in agricultural nitrogen balance, inputs and crop uptake, 1995-1998



1. "Other inputs" include atmospheric deposition and biological fixation of nitrogen, nitrogen in seeds and planting material.

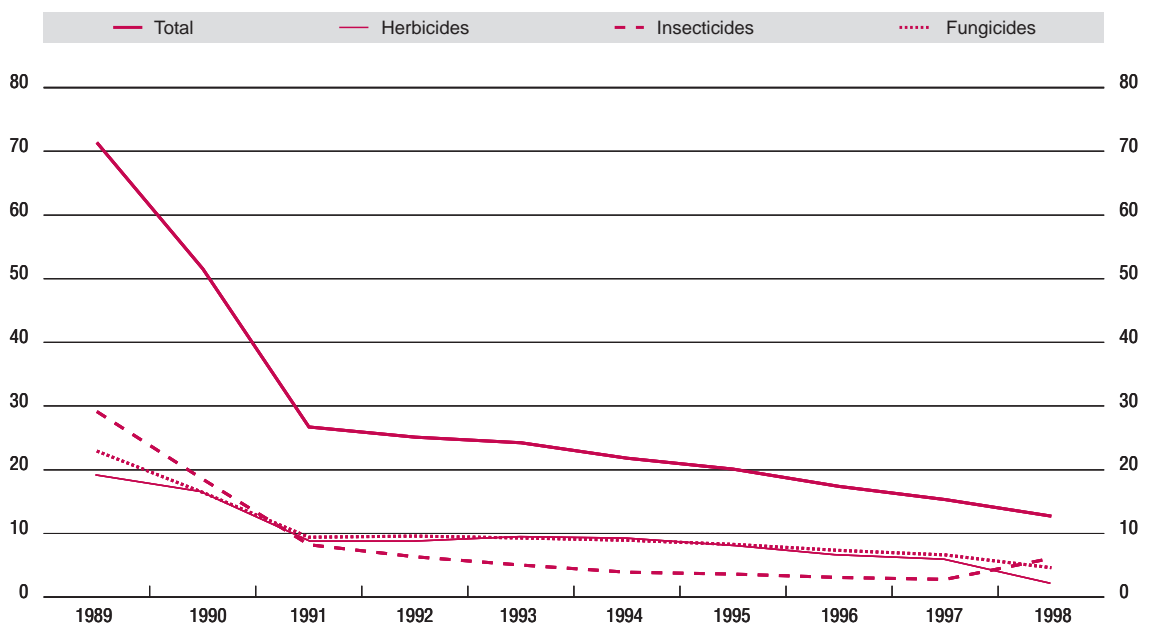
Source: OECD Secretariat.

D. Pesticide use

Pesticides are widely used by the agricultural sector in OECD countries to help maintain and improve farm productivity. However, the use of pesticides involves risks to human health and the environment. The risks vary greatly depending on pesticides' inherent toxicity and exposure. Two types of indicators are being developed by OECD: one focusing on pesticide use, the other on pesticide risk. Use indicators are simpler, but because of the importance of reducing risks, it is essential to develop indicators of risk trends (OECD, 2000a).

Only indicators of pesticide use are available for Romania. Pesticide use fell drastically in the first years of transition and continued to decline in most recent years (Annex Graph I.9). This was in line with the situation in the Czech Republic, Hungary and Poland where a considerable decrease in pesticide use was also observed. As in the case of fertilisers, this was due to a number of transitional factors reducing the ability of producers to purchase inputs. In most other OECD countries, pesticide use over the last decade has remained constant or declined as a result of economic and policy pressures to reduce pesticide use, which led to improvements in the efficiency of pesticide use, adoption of pest management practices and technologies.

Annex Graph I.9. **Pesticide consumption**
Thousand tonnes, active ingredient



Source: National Commission for Statistics.

E. Water use

Availability of water is an important limiting factor on the health and welfare of society. Although water is a renewable resource, it is finite in terms of the amount available per unit of time across various regions. Due to the decline in industrial and agricultural activity in Romania total water use in 1991 was almost one half of its mid-1980 level; however, throughout the 1990s it remained relatively stable. Industry accounts for the largest share of water consumption in Romania, which reaches about one half of total water abstractions. In the mid-1980s agriculture was the second largest water user, but during the transition its share almost halved (Annex Table I.3).

Reduction in agricultural water use between 1991 and 1997 was the result of a sharp drop in water withdrawals for livestock farming; water use for fishery also decreased significantly between 1991 and 1992, but has remained relatively stable since then. Irrigation withdrawals varied from year to year; the extremely low level of 1997 is explained mainly by reduced need for irrigation due to significant rainfall in that year (Annex Table I.4). These changes, have not, however, greatly affected the structure of water use in agriculture, with irrigation remaining its principal component.

Annex Table I.3. **Water supply by user categories**

	1985	1991	1992	1993	1994	1995	1996	1997
Total water supply, million cubic metres	20 743	10 834	10 884	10 183	9 847	10 299	10 454	9 264
<i>of which in per cent:</i>								
Industry	51	52	48	44	45	52	50	57
Municipal services	8	26	26	27	29	30	28	32
Agriculture – total	41	21	26	29	25	19	21	11
Other activities	–	–	–	–	–	–	0.6	0.5

Source: The Romanian Water Agency of the Ministry of Water, Forests and Environment Protection.

Annex Table I.4. **Agricultural water abstractions**

	1991	1992	1993	1994	1995	1996	1997	1997 as per cent of 1991
Total abstractions, million cubic metres	2 308	2 793	2 988	2 505	1 912	2 234	1 026	44
<i>of which:</i>								
for irrigation	1 261	1 996	1 974	1 722	1 213	1 504	287	23
for livestock farming	233	161	147	125	102	96	92	39
for fishery	814	636	867	658	597	634	647	79
Total abstractions, per cent	100	100	100	100	100	100	100	–
<i>of which:</i>								
for irrigation	55	71	66	69	63	67	28	–
for livestock farming	10	6	5	5	5	4	9	–
for fishery	35	23	29	26	31	28	63	–

Source: The Romanian Water Agency of the Ministry of Water, Forests and Environment Protection.

Rivers are the main sources for irrigation water, with the Danube accounting for 75% of the potential for irrigation. Other principal sources are the Olt, Siret, Arges and Prut rivers. The total area equipped with irrigation systems in Romania is estimated at 3.2 million hectares or about 20% of total agricultural land area. Arable land accounts for about 95% of total irrigated area. With the total area equipped with irrigation facilities remaining almost unchanged (Annex Graph I.9), the area actually irrigated has decreased dramatically. Between 1992 and 1996, of total lands equipped with irrigation systems only about 20% were actually irrigated, this share falling to 4% in 1997. Radical changes in land use and overall economic conditions made the existing irrigation systems incompatible with the new production structure and economically unsustainable. Out of the total area equipped with irrigation systems, 22% is set up with giant systems (average size covering 126 000 hectares), 32% with very large ones (average size covering 73 000 hectares), and 23% with large systems (average size covering 37 000 hectares). Medium and small systems cover only 16% and 7% of irrigated area respectively. Large irrigation systems no longer fit the average farm size. Furthermore, the cost of irrigation is unaffordable to the majority of small producers, despite state financing of irrigation systems and the considerably reduced irrigation water price (Annex Table I.5). The use of irrigation is also limited by the deterioration of irrigation equipment due to lack of funds for its maintenance.

Annex Table I.5. **Water prices by water use, 1997**

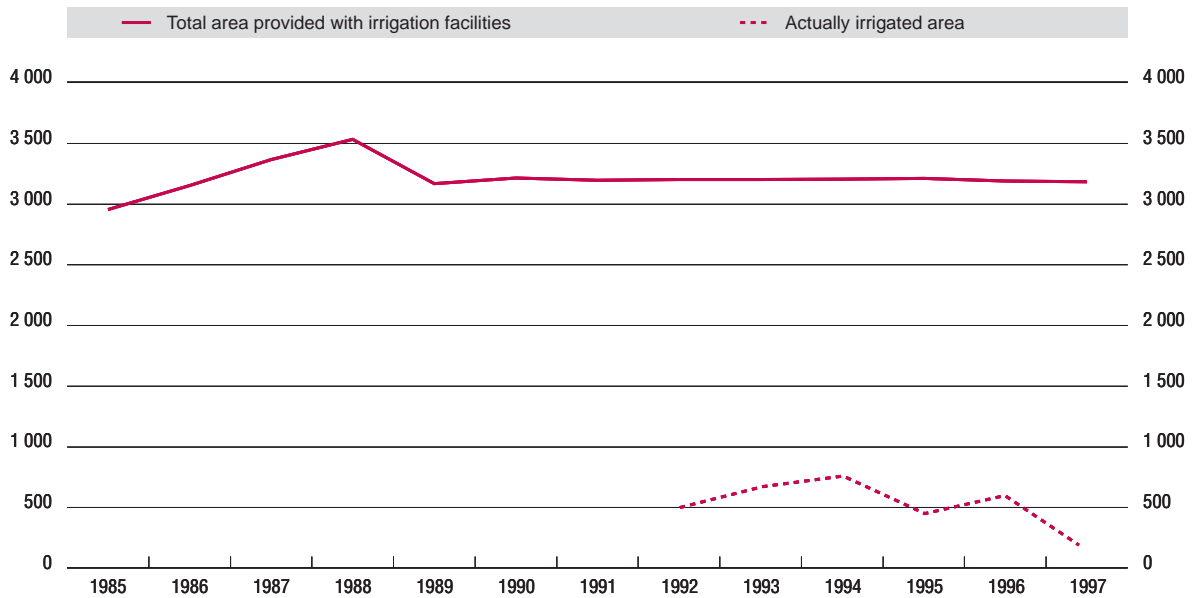
Lei per thousand cubic metres

	Price of water abstracted from:			As % of industry water price		
	Danube	Inland rivers	Underground	Danube	Inland rivers	Underground
For irrigation and fishery	159	773	2 825	2	1	4
For livestock	6 998	58 336	21 745	100	100	30
For industry	6 998	58 336	71 806	100	100	100
For municipalities	4 113	21 390	16 379	59	37	23
Other uses	6 998	58 336	71 806	100	100	100

Source: UNEP, 1999.

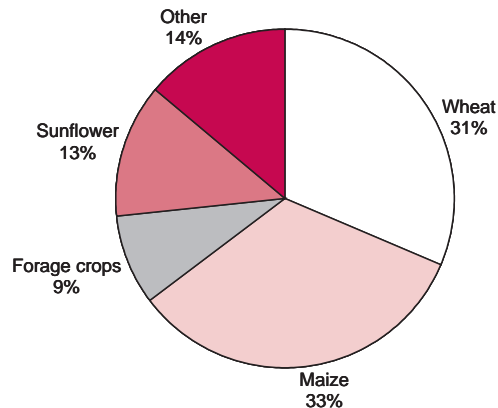
The main crops under irrigation are maize, wheat, sunflower and forage crops, accounting for 86% of total irrigated area (Annex Graph I.10).

Annex Graph I.10. Area provided with irrigation facilities and actually irrigated area
Thousand hectares



Source: Ministry of Agriculture and Food.

Annex Graph I.11. Share of main crops in the total area under irrigation in 1997



Source: Ministry of Agriculture and Food.

F. Soil quality

As a limited resource for sustainable agricultural production, soil should be used in ways that are environmentally safe, economically viable, and socially acceptable. Potential adverse impacts from agriculture on soil quality may include soil erosion, organic matter loss and the loss of soil biodiversity. Soil degradation can also result from inappropriate irrigation and soil management practices, land clearing, excessive use of farm chemicals, mis-use of heavy machinery, although chemical and physical deterioration of soil is also caused by natural processes (OECD, 2000a).

Romania established the Agricultural Soil Quality Monitoring System in 1977 as part of the National System for Environmental Quality. The system was extended in 1992 to monitor also forest soils and was harmonised with other European systems. There are 944 monitoring points, of which 675 placed in agricultural areas and 269 in forestlands.

As Annex Table I.6 shows, from 1992 to 1997 the soil quality in Romania deteriorated by 10 out of 19 parameters presented. Of the total agricultural land area of nearly 15 million hectares, about 12 million hectares (of which 7.5 million hectares of arable land) are affected by one or more quality limiting factors. The greatest increase occurred in areas affected by droughts, excess moisture in soil, water erosion, acidification and low content of mobile phosphorus and nitrogen.

Annex Table I.6. **Soil depletion factors and the size of affected agricultural area, 1992 and 1997**

Soil quality limiting factors	Affected area		
	1992	1997	
	1 000 hectares	1 000 hectares	As per cent of total agricultural land
Areas affected by frequent droughts	3 900	7 100	48
Areas with frequent moisture excess	900	3 781	26
Water erosion	4 065	6 300	43
Landslides	700	702	5
Wind erosion	387	378	3
Excessive skeleton from soil surface	300	300	2
Soil salts	600	614	4
Soil compaction due to inadequate cultivation	6 500	6 500	44
Soil natural compaction	2 060	2 060	14
Crust formation	2 300	2 300	16
Small and very small humus deposit	7 114	7 304	49
Strong and moderate acidity	2 350	3 420	23
High alkalinity	165	220	1
Very poor and poor content of mobile phosphorus	4 475	6 289	43
Poor content of nitrogen	3 438	4 883	33
Microelement deficiency (zinc)	1 500	1 500	10
Chemical pollution	900	900	6
Oil and salty water pollution	50	50	0
Pollution from wind carried substances	147	147	1

Source: National Commission for Statistics.

About 40% (6.3 million hectares) of agricultural land is currently affected by water erosion and this area has increased considerably since the beginning of the 1990s. Soil erosion by wind is not significant in Romania. It is recorded mainly for deforested areas and less for agricultural land. Poor forest management, including clear cutting, has contributed to wind soil erosion. Although total area affected declined slightly after 1992, there is a probability of increased wind erosion since massive deforestation has recently taken place in areas of high risk.

Human activities, including agricultural operations, have had a major role in initiating and intensifying the soil erosion processes in Romania (Annex Box I.2).

The erosion vulnerability of agricultural lands depending on the land slope is presented in Annex Table I.7. About 40% of Romanian agricultural land is vulnerable to erosion.

Erosion intensity of agricultural lands as measured by the quantity of annual soil loss per hectare is moderate or strong over nearly 40% of agricultural land (Annex Table I.8). Landslides and depth erosion cause the withdrawal of about 5 000 hectares per year from the cultivable area.

Annex Box I.2. **Major soil erosion impacts from agricultural activities in Romania**

Ploughing with heavy machinery and at the same depth for several consecutive years. This leads to creation of a compact land layer preventing normal water circulation in soil and root growth.

Ploughing on steep areas, effect intensified by rain. The ploughed land layer is deposited at the foot of the hill covering the previous soil layer or carried further to river meadows and deposited as alluvial soil.

Ploughing with heavy ploughs for vineyard planting which can inverse the soil profile. The superior horizon is lowered to 1 meter while the inferior horizon or even the rock moves to the surface. In this way the soil is strongly eroded or even removed.

Extraction of organic material through harvesting and removing all straw and other residuals from the field. This leads to a decrease in the soil humus content. The natural regeneration capacity cannot be fully achieved by chemical fertilisation.

Improper land improvement practices.

Irrational deforestation for increasing arable land and pastures on steep or brittle ground that leads to accelerated torrential erosion.

Overgrazing on dry steep lands.

Grazing in forests which disturbs their natural regeneration.

Source: Motoc, 1975.

Annex Table I.7. **Soil erosion vulnerability of agricultural land**

	Areas with the slope over 5 per cent, 1 000 hectares	As per cent of total land	Average slope, per cent
Agricultural land	6 367	43	18
Arable land	2 572	28	17
Pastures and meadows	3 360	69	22
Vineyards	169	56	16
Orchards	266	87	18
Forestland	5 748	86	40

Source: The Institute for Soil and Agrochemical Studies.

Annex Table I.8. **Soil erosion intensity of agricultural land**

	Soil loss, tonnes per hectare per year	Average soil loss, tonnes per hectare per year	Areas affected, as per cent of total agricultural land
Insignificant erosion	< 1	0.5	57.4
Weak erosion	2-8	5.0	3.0
Moderate erosion	8-16	12.0	19.0
Strong erosion	16-30	23.0	18.0
Excessive erosion	30-45	37.5	2.6

Source: The Institute for Soil and Agrochemical Studies.

Before the start of land reform, land conservation works covered an area of 2.2 million hectares. Previous conservation works appeared to be of no use over about 0.4 million hectares of this area due to improper parcelling in the course of land restitution, land fragmentation, improper land use and cultivation techniques applied by new owners.

Annex Table I.9. **Erosion by land use**

	Soil loss	
	million tonnes per year	per cent
Total land	126.0	100
Agricultural land	106.6	85
<i>of which:</i>		
Arable land	28.0	22
Pastures	45.0	36
Vineyards	1.7	1
Orchards	2.1	2
Not productive land (with depth erosion)	29.8	24
Forestland	6.7	5
Subtotal	113.3	90
Erosion on river banks and in human settlements	12.7	10

Source: The Institute for Soil and Agrochemical Studies.

G. Water quality

Official Romanian standards distinguish four surface water quality categories: *i*) category I, applies to water that after treatment can be used for human consumption, for livestock and fish; *ii*) category II, water for use in fish farms, for industrial purposes, and urban management; *iii*) category III, water for use for irrigation, power stations, other industrial purposes; *iv*) category IV, degraded water that cannot be used in most cases and represents a threat to public health and environment.

The Ministry of Water, Forests and Environmental Protection has a nation-wide water monitoring system comprised of: *i*) 275 monthly and 65 daily monitoring stations for surface water; *ii*) 55 seasonal monitoring stations for lakes; and *iii*) 80 seasonal monitoring stations for groundwater. They measure pollution levels and identify pollution sources (industrial, agricultural or other). The water quality level is established on river sectors representing a total length of about 20 000 kilometres of a total national hydrological network of 115 000 kilometres of permanent watercourses.

The data presented in Annex Table I.10. indicate substantial improvement of surface water quality in Romania during the 1990s, which is largely linked to the decline in industrial and agricultural activity. However, as regards river water, its quality is characterised by considerable differences both from basin to basin and within basins, from one area to another.

Annex Table I.10. **Surface water quality**
Per cent of the reference length of national hydrological network falling into different quality categories

	Quality category			
	I	II	III	Degraded
1989	35.00	22.00	18.00	22.00
1991	42.00	24.10	12.30	21.60
1992	47.78	24.45	9.44	18.33
1993	54.00	20.00	11.00	15.00
1994	50.76	29.82	8.26	11.17
1995	52.88	26.49	8.54	13.07
1996	53.50	30.13	5.64	10.73
1997	57.49	28.10	5.76	8.65

Source: Ministry of Water, Forests and Environment Protection.

There are no precise measurements regarding agricultural runoff into surface and underground waters. The existing monitoring can not determine the exact quantity of pollutants coming from each pollution source, *e.g.* from agriculture, which is characterised mainly by non-point source pollution.

There are few precisely determined agricultural pollution sources (animal farms, greenhouses and inappropriate drainage systems). The main agricultural pollutants are chemical and organic fertilisers and pesticides. The decrease in the use of chemical fertilisers in 1990s was an important factor in reducing water pollution in recent years. Pollution from organic fertilisers has also diminished due to the smaller livestock numbers. However, the degradation of waste treatment equipment in livestock complexes is an acute problem. At present over three quarters of such systems function only partially or not at all. The liquid waste from livestock complexes is discharged into nearby rivers in semi- or untreated form, high in suspended solids, BOD5, ammonia, and pathogens. The share of water treatment facilities which do not function properly is also high in other agricultural and rural activities (Annex Table I.11).

Annex Table I.11. Condition of main waste water treatment plants in 1997

	Existing water treatment plants					Plants in construction
	Total number	In adequate condition, number	Per cent	In inadequate condition, number	Per cent	
Livestock complexes	117	25	21	92	79	2
Irrigation	27	18	67	9	33	–
Fish farming	2	1	50	1	50	–
Food industry	145	56	39	89	61	1
Forestry	9	6	67	3	33	–
Wood processing	53	31	58	22	41	–
Total economy	1 491	634	45	823	56	33

Source: The Government of Romania, 1999.

H. Organic farming

The need for application of ecologically sound agricultural practices is stated in a number of official documents. That part of the National Programme for the Adoption of the Acquis Communautaire related to agriculture and environment incorporates a provision on the development of organic farming, with a medium term perspective up to the year 2004. The National Plan for Agriculture and Rural Development and the SAPARD programme envisage pilot projects for the adoption of environmentally friendly production methods and preservation of the rural landscape. A draft law On State Aid to Farmers Applying Environmentally Friendly Methods of Production and a government order On Ecological Agro-Food Products is currently under the preparation at the MoAF (see Part IV.H).

However, the actual adoption and implementation of these provisions is still to be achieved. Protecting the environment and natural resource conservation imply extra work and higher costs for the farmers that should be compensated accordingly. Economic incentives for organic farming do not yet exist. Domestic consumers have not been educated to appreciate ecological food, nor do they have adequate income levels to pay for it.

In some sense Romanian producers practice organic farming spontaneously due to lack of funds to buy fertilisers and farm chemicals. Still, farmers are not obliged to label their products or testify in any way that they are ecologically clean. The products marketed on the peasant markets may be considered ecological, but they are sold at prices lower than those in some state or private stores.

One can expect that it will take a rather long period of time before the domestic demand for ecological products and the relevant institutional framework emerge in Romania. Incentives for organic production can be created by external demand, but potential here is limited as such markets are currently rather thin.

I. Agri-environmental expenditures

Between 1992 and 1997, environmental expenditures in Romania tended to grow in real terms. They represented from 1.1% to 1.5% of GDP (Annex Table I.12). The share of agriculture in total environmental expenditures was low, hardly exceeding 2% for the most of the period (only in 1995 it reached nearly 5%).

The most important component of agricultural environmental expenditures in Romania is pollution prevention and abatement, which comprised over half of the total expenditures for the most of the period between 1992 and 1997. However, there is a slight tendency to increase the allocations to environmental protection. The share of research and training remains very small (Annex Table I.13).

Annex Table I.12. **Environmental expenditures**

	1992	1993	1994	1995	1996	1997
Total environmental expenditures, million Lei in current prices	67 635	238 825	516 727	956 166	1 496 580	3 661 575
Total environmental expenditures, million Lei in 1990 prices	8 064	7 997	7 309	10 223	11 529	11 070
Environmental expenditures for agriculture:						
Million Lei in current prices	1 348	5 370	14 865	46 355	36 195	57 994
Million Lei in 1990 prices	161	180	210	496	279	175
As per cent of total environmental expenditures	2.0	2.2	2.9	4.8	2.4	1.6
Environmental expenditures as percent of GDP:						
Total expenditures	1.1	1.2	1.0	1.3	1.4	1.5
Agricultural expenditures	0.02	0.03	0.03	0.06	0.03	0.02

Source: National Commission for Statistics.

Annex Table I.13. **Structure of agricultural environmental expenditures**

Per cent

	1992	1993	1994	1995	1996	1997
Total agricultural environmental expenditures	100	100	100	100	100	100
of which:						
Pollution prevention and abatement	78	62	38	65	58	28
Natural environment protection	19	38	61	35	40	71
Research and training	2.6	0.5	0.3	0.3	1.9	0.03
Administrative expenditures	0.1	0.1	0.2	0.1	0.2	0.5

Source: National Commission for Statistics.

J. Conclusions

During the 1990s, dismantling of the previous planned system, with its guaranteed input supplies, and the considerable growth in relative prices of inputs, in particular fertilisers and pesticides, led to a dramatic decline in their consumption by agriculture. Furthermore, contraction of intensive operations created under the previous regime, such as livestock complexes and irrigated vegetable production, resulted in a substantial reduction of harmful emissions from agriculture. Water use in agriculture fell significantly, mainly due to abandonment of large-scale irrigation systems, which did not fit the new fragmented land use structure. The agricultural land use structure shifted to a less intensive one. Therefore, pressures on the environment from agricultural production eased considerably during the transition.

At the same time, other components of the environmental situation indicate a negative trend. Agriculture continues to experience negative impacts from other economic activities (the recent and probably extreme example is the catastrophe at Baia Mare, north-western Romania, by which cyanide spilt into a local river and spread up to the Tisza and the Danube rivers).

The area of distinct concern is the declining soil quality. This can be partly related to the reduction of government funds to support land amelioration and lack of producers' own funds to sustain these activities. Partly this is an unwelcome consequence of land reform: significant fragmentation of land use complicated or even interrupted land conservation works, and the incidence of improper land cultivation practices increased. While reduced fertiliser consumption so far has had positive implications for pollution levels, the potential danger of unsustainable use of soil resources has emerged.

As a result of land reform a large number of persons with no or minimal agricultural training or environmental knowledge became agricultural operators. The risks of use of environmentally unsound production practices increased. This problem needs to be addressed by considerable financial and administrative efforts, including creation of special environmental education programmes as well as advisory systems for private agricultural operators and launching mechanisms of incentives and penalties to enforce environmentally sound practices.

The recent improvements in the environmental situation are the side effects of transition following from the decline in agricultural output and low input-purchasing power of agricultural producers. The situation may reverse as economic pressures on producers ease, providing more production incentives and enabling increased use of inputs. This suggests that Romania has to embark on comprehensive and complex environmental work, moving from the stage of developing new environmental policies and measures to the stage of their implementation.

Annex II

ASSISTANCE TO ROMANIAN AGRICULTURE**Introduction**

In this Annex, section A briefly explains the concepts of Producer Support Estimates (PSE), Consumer Support Estimates (CSE) and Total Support Estimates (TSE). Some particular methodological issues concerning the estimation of PSEs and CSEs for Romania are discussed in section B. Section C contains the main PSE and CSE results and related data in tabular form.

A. Concepts and Methodology

The OECD classification of total transfers associated with agricultural policies (TSE), groups the policy measures into three main categories: transfers to producers individually (PSE), transfers to consumers individually (CSE), and transfers to general services to agriculture collectively (GSSE) as in Annex Box II.I.

I. Producer Support Estimate (PSE): an indicator of the annual monetary value of gross transfers from consumers and taxpayers to support agricultural producers, measured at farm gate level, arising from policy measures which support agriculture, regardless of their nature, objectives or impacts on farm production or income.

The PSE measures support arising from policies targeted to agriculture relative to a situation without such policies, *i.e.* when producers are subject only to general policies (including economic, social, environmental and tax policies) of the country. The PSE is a **gross** notion implying that any costs associated with those policies and incurred by individual producers are not deducted.¹ It is also a **nominal assistance** notion meaning that increased costs associated with import duties on inputs are not deducted. But it is an indicator **net** of producer contributions to help finance the policy measure (*e.g.* producer levies) providing a given transfer to producers. The PSE includes implicit and explicit payments such as price wedges on output or inputs, tax exemptions, and budgetary payments, including those for remunerating non-market goods and services. Therefore, the indicator measures more than the “subsidy element”. Although **farm receipts** (revenues)² are increased (or farm expenditure reduced) by the amount of support, the PSE is not in itself an estimate of the impacts of support on farm production or income.

A. Market Price Support (MPS): an indicator of the annual monetary value of gross transfers from consumers and taxpayers to agricultural producers arising from policy measures creating a gap between domestic market prices and border prices of a specific agricultural commodity, measured at the farm gate level.

Conditional on the production of a specific commodity, MPS includes the transfer to producers associated with both production for domestic use and exports, and is measured by the price gap applied to current unlimited production (1. *Based on unlimited output*); or to current limited production (2. *Based on limited output*). The MPS is **net** of financial contributions from individual producers through producer levies on sales of the specific commodity or penalties for not respecting regulations such as production quotas (3. *Price levies*); and in the case of livestock production is net of the market price support on domestically produced coarse grains and oilseeds used as animal feed (4. *Excess feed cost*).

B. Payments based on output: an indicator of the annual monetary value of gross transfers from taxpayers to agricultural producers arising from policy measures based on current output of a specific agricultural commodity or a specific group of agricultural commodities.

Conditional on producing a specific commodity or a specific group of commodities, it includes payments per tonne, per hectare or per head of animals to current unlimited (1. *Based on unlimited output*), or limited (2. *Based on limited output*) production.

C. Payments based on area planted/animal numbers: an indicator of the annual monetary value of gross transfers from taxpayers to agricultural producers arising from policy measures based on current plantings, or number of animals of a specific agricultural commodity or a specific group of agricultural commodities.

Conditional on planting, or animal numbers of a specific commodity or a specific group of commodities, it includes payments per hectare or per head to current unlimited (1. *Based on unlimited area or animal numbers*), or limited (2. *Based on limited area or animal numbers*) area planted or animal numbers.

Annex Box II.1. Classification of policy measures included in the OECD indicators of support

I. Producer Support Estimate (PSE) [Sum of A to H]

A. Market Price Support

1. Based on unlimited output
2. Based on limited output
3. Price levies
4. Excess feed cost

B. Payments based on output

1. Based on unlimited output
2. Based on limited output

C. Payments based on area planted/animal numbers

1. Based on unlimited area or animal numbers
2. Based on limited area or animal numbers

D. Payments based on historical entitlements

1. Based on historical plantings/animal numbers or production
2. Based on historical support programmes

E. Payments based on input use

1. Based on use of variable inputs
2. Based on use of on-farm services
3. Based on use of fixed inputs

F. Payments based on input constraints

1. Based on constraints on variable inputs
2. Based on constraints on fixed inputs
3. Based on constraints on a set of inputs

G. Payments based on overall farming income

1. Based on farm income level
2. Based on established minimum income

H. Miscellaneous payments

1. National payments
2. Sub-national payments

II. General Services Support Estimate (GSSE) [Sum of I to O]

I. Research and development

J. Agricultural schools

K. Inspection services

L. Infrastructure

M. Marketing and promotion

N. Public stockholding

O. Miscellaneous

III. Consumer Support Estimate (CSE) [Sum of P to S]

P. Transfers to producers from consumers

Q. Other transfers from consumers

R. Transfers to consumers from taxpayers

S. Excess Feed Cost

IV. Total Support Estimate (TSE) [I + II + R]

T. Transfers from consumers

U. Transfers from taxpayers

V. Budget revenues

D. Payments based on historical entitlements: an indicator of the annual monetary value of gross transfers from taxpayers to agricultural producers arising from policy measures based on historical support, area, animal numbers, or production of a specific agricultural commodity or a specific group of agricultural commodities without obligation to continue planting or producing such commodities.

Conditional on being a producer of a specific commodity or a specific group of commodities at the time of introduction of the payment, it includes payments based on historical plantings/animal numbers or production of such commodities (1. *Based on plantings/animal numbers or production*); and payments based on historical support programmes for such commodities (2. *Based on historical support programmes*).³

E. Payments based on input use: an indicator of the annual monetary value of gross transfers from taxpayers to agricultural producers arising from policy measures based on the use of a specific fixed or variable input or a specific group of inputs or factors of production.

Conditional on the on-farm use of specific fixed or variable inputs, it includes explicit and implicit payments affecting specific variable input costs (1. *Based on use of variable inputs*); the cost of on-farm technical, sanitary and phytosanitary services (2. *Based on use of on-farm services*); or affecting specific fixed input costs, including investment costs (3. *Based on use of fixed inputs*)

F. Payments based on input constraints: an indicator of the annual monetary value of gross transfers from taxpayers to agricultural producers arising from policy measures based on constraints on the use of a specific fixed or variable input or a specific group of inputs through constraining the choice of production techniques.

Conditional on the application of certain constraints (reduction, replacement, or withdrawal) on the on-farm use of specific variable inputs (1. *Based on constraints on variable inputs*); or fixed inputs (2. *Based on constraints on fixed inputs*); or based on constraints on the use of a set of farm inputs through constraining the choice of production techniques of marketed commodities for reducing negative externalities or remunerating farm inputs producing non-market goods and services (3. *Based on constraints on a set of inputs*).⁴

G. Payments based on overall farming income: an indicator of the annual monetary value of transfers from taxpayers to agricultural producers arising from policy measures based on overall farming income (or revenue), without constraints or conditions to produce specific commodities, or to use specific fixed or variable inputs.

Conditional on farm(er) eligibility, it includes payments to compensate for farm income fluctuations or losses (1. *Based on farm income level*); or for ensuring a minimum income guarantee (2. *Based on established minimum income*).⁵

H. Miscellaneous payments: an indicator of the annual monetary value of all transfers from taxpayers to agricultural producers that cannot be disaggregated and allocated to the other categories of transfers to producers.

Conditional on being an aggregate of payments to producers which cannot be disaggregated due, for example, to a lack of information, it includes payments funded by national governments (1. National payments), or state, regional, prefectural, or provincial governments (2. Sub-national payments).

II. General Services Support Estimate (GSSE): an indicator of the annual monetary value of gross transfers to general services provided to agriculture collectively, arising from policy measures which support agriculture, regardless of their nature, objectives and impacts on farm production, income, or consumption of farm products.

Conditional on being an eligible private or public general service provided to agriculture collectively, including collective actions for agri-environmental purposes, it includes taxpayers transfers to: improve agricultural production (**I. Research and development**); agricultural training and education (**J. Agricultural schools**); control of quality and safety of food, agricultural inputs, and the environment (**K. Inspection services**); improve off-farm collective infrastructures, including downstream and upstream industry (**L. Infrastructures**); assist marketing and promotion (**M. Marketing and promotion**); meet the costs of depreciation and disposal of public storage of agricultural products (**N. Public stockholding**); other general services that cannot be disaggregated and allocated to the above categories due, for example, to a lack of information (**O. Miscellaneous**). Unlike the PSE and CSE transfers, these transfers are not received by producers or consumers individually, and do not affect **farm receipts** (revenue) or consumption expenditure by their amount, although they may affect production and consumption of agricultural commodities.

III. Consumer Support Estimate (CSE): an indicator of the annual monetary value of gross transfers to (from) consumers of agricultural commodities, measured at the farm gate level, arising from policy measures which support agriculture, regardless of their nature, objectives or impacts on consumption of farm products.

The CSE includes explicit and implicit consumer transfers to producers of agricultural commodities, measured at the farm gate (first consumer) level and associated with: market price support on domestically produced consumption (**P. Transfers to producers from consumers**); and transfers to the budget and/or importers on the share of consumption that is imported (**Q. Other transfers from consumers**); and is **net** of any payment to consumers to compensate them for their contribution to market price support of a specific commodity (**R. Transfers to consumers from taxpayers**); and the producer contribution (as consumers of domestically produced crops) to the market price support on crops used in animal feed (**S. Excess feed cost**). When negative, transfers from consumers measure the implicit tax on consumption associated with policies to the agricultural sector. Although consumption expenditure is increased/reduced by the amount of the implicit tax/payments, this indicator is not in itself an estimate of the impacts on consumption expenditure.

IV. Total Support Estimate (TSE): an indicator of the annual monetary value of all gross transfers from taxpayers and consumers arising from policy measures which support agriculture, net of the associated budgetary receipts, regardless of their objectives and impacts on farm production and income, or consumption of farm products.

The TSE is the sum of the explicit and implicit gross transfers from consumers of agricultural commodities to agricultural producers net of producer financial contributions (in MPS and CSE); the gross transfers from taxpayers to agricultural producers (in PSE); the gross transfers from taxpayers to general services provided to agriculture (GSSE); and the gross transfers from taxpayers to consumers of agricultural commodities (in CSE). As the transfers from consumers to producers are included in the MPS, the TSE is also the sum of the PSE, the GSSE, and the transfers from taxpayers to consumers (in CSE). The TSE measures the overall cost of agricultural support financed by consumers (**T. Transfers from consumers**) and taxpayers (**U. Transfers from taxpayers**) net of import receipts (**V. Budget revenues**).

Percentage PSE/CSE and producer/consumer NAC

The PSE by country and by commodity can be expressed in monetary terms – the **PSE**; as a ratio to the value of total gross farm receipts,⁶ measured by the value of total production (at farm gate prices), plus budgetary support – the **percentage PSE**; or a ratio to the value of total gross farm receipts valued at world market prices, without budgetary support – the **producer NAC** (Nominal Assistance Coefficient).

In algebraic form, these PSE expressions can be written as follows:

$$\% \text{ PSE} = \text{I.PSE} / (\text{Q.Pp} + \text{PP}) \times 100 \quad (1)$$

$$(100 - \% \text{PSE}) = \text{Q.Pb} / (\text{Q.Pp} + \text{PP}) \times 100 \quad (2)$$

$$[1 / (100 - \% \text{PSE}) \times 100] = [\% \text{PSE} / (100 - \% \text{PSE}) + 1] = [(\text{I.PSE} / \text{Q.Pb}) + 1] = \text{NACp} \quad (3)$$

where,

PP = payments to producers = I. PSE - I.A. *Market Price Support* = \sum I.B to I.H (see Annex Box II.1)

Q.Pp = value of production at producer prices

Q.Pb = value of production at border prices

In other words, the above equations can be explained as follows:

- for example, a percentage PSE of 60%, expresses the share of transfers to agricultural producers in the total value of gross farm receipts (as measured by the PSE), or the share of gross farm receipts derived from policies (equation (1)); hence
- some 40% of gross farm receipts is derived from the market without any support [equation (2)]; and
- the value of gross farm receipts is 250% of (or 150% higher than) what they would be if entirely obtained at world prices without any budgetary support [equation (3)] – a producer NAC of 2.50.

All transfers included in the CSE are implicit taxes or explicit budgetary transfers to consumers of agricultural commodities affecting consumer expenditure (valued at farm gate) of agricultural commodities. Therefore, *the CSE by country and by commodity can be expressed in monetary terms – the CSE; as a ratio to the total value of consumption expenditure on commodities domestically produced, measured by the value of total consumption (at farm gate prices), minus budgetary support to consumers – the percentage CSE; or as a ratio to the total value of consumption expenditure on commodities domestically produced valued at world market prices, without budgetary support to consumer – the consumer NAC.*

In algebraic form, the CSE expressions can be written as follows:

$$\% \text{CSE} = \text{III.CSE} / (\text{Qc.Pd} - \text{TC}) \times 100 \quad (4)$$

$$(100 - \% \text{CSE}) = \text{Qc.Pb} / (\text{Qc.Pd} - \text{TC}) \times 100 \quad (5)$$

$$[1 / (100 - \% \text{CSE}) \times 100] = [1 + \% \text{CSE} / (100 - \% \text{CSE}) + 1] = [(\text{III.CSE} / \text{Qc.Pb}) + 1] = \text{NACc} \quad (6)$$

where,

TC = taxpayer transfers to consumers = III.R. *Transfers to consumers from taxpayers* (Annex Box II.1)

Qc.Pd = value of consumption at domestic prices (at farm gate)

Qc.Pb = value of consumption at border prices

In other words, the above equations can be explained as follows:

- for example, a percentage CSE of 60%, expresses the share of transfers to (from) consumers in the total consumption expenditure on agricultural commodities (as measured by the CSE), or the share of the consumption expenditure created by policies [equation (4)]; hence
- some 40% of total consumption expenditure is derived from the market without any market support to domestic agricultural producers [equation (5)]; and
- the amount of consumption expenditure is 250% of (or 150% higher than) what it would be if entirely created at world market prices without any budgetary support to consumers [equation (6)] – a consumer NAC of 2.50.

The consumer NAC measures the **consumer price differential** or the ratio between the price paid by consumers (at farm gate) and the border price. When the price paid by consumers (at farm gate) is on average the producer price, and there are no consumption subsidies, the consumer NAC also measures the **producer price differential**. In all the

other cases, this differential or the ratio between the producer and border prices can only be measured through the MPS calculation, as the ratio between the unit MPS and the border price.

Percentage GSSE and TSE

For a given country or commodity, the calculation of any of the indicators in percentage terms needs to have a precise meaning. This is the case when both the numerator and the denominator have an economic meaning, and the value of the transfers in the numerator can be seen as an integral part of the denominator.⁷ Moreover, as percentage indicators take account of the effect of inflation on both numerator and denominator, this effect is eliminated. As a result percentage indicators are more representative and appropriate measures of support for analysis over time and across countries.

The **percentage GSSE** is defined as the share of support to general services provided to agriculture in the total support to agriculture (TSE), the rest being the support to individual producers and consumers of domestic agricultural commodities. In a situation of public support to agriculture, the higher the percentage GSSE, the lower the share of support affecting individual decisions on domestic production and consumption of agricultural commodities.

The TSE contains taxpayers transfers that are a component of the total current government expenditure, and transfers from consumers which are a component of the total domestic consumption expenditure. But, both of these transfers, from taxpayers and consumers, are included in Gross Domestic Product (GDP). Therefore, the **percentage TSE** is defined as the share of total support to agriculture in the total GDP. The higher the percentage TSE, the larger the share of national wealth used to support agriculture.

B. Estimation of Romanian PSEs and CSEs from 1986 to 1999

1. Budget expenditures

The calculation of the PSE consists of allocating budgetary expenditures among the various commodities. For most of the subsidies in Romania, data were available only on the total amount of funds distributed by the state throughout the agricultural economy, not on the amount of funds allocated for production of specific commodities. The distribution method is related to the way each measure is applied (and to which commodities it is related), but if there is no specific basis for allocating the expenditure, allocation is done according to the share of each commodity in total value of agricultural production. A distinction is made in the allocation whether the measure is applied to all farms, to state farms, to associations or to family farms.

2. Reference prices

Two key reference prices are used in the measurement of a price gap: external reference price and domestic producer reference price.

External reference price

The external price is in principle the unit export value or average export price for a product for which the country is a net exporter and the unit import value or average import price for a product for which the country is a net importer. The trade prices should, as far as possible, be those of the country being assessed to ensure a comparison of "like with like". In the case of many OECD countries, unit trade values have proven to be unreliable and quoted trade prices have been used as reference prices (*e.g.* the annual average of a regularly quoted export price of a specific commodity at a specific location). The chosen price is one that, as far as possible, is representative of the product produced domestically. When a country's own unit trade values are not available or deemed to be unreliable and no suitable quoted trade prices are available, previous practice has been to use the trade prices of a third country. This practice does carry the risk of poor comparability between the domestic product and the reference product. If this can be demonstrated, an adjustment for quality differences can be attempted. For many countries in transition, the OECD practice has been to use EU reference prices when problems with the country's own trade prices are found. This is a useful approach for a number of reasons. The EU is a major trader in the region and as such tends to determine trade prices for the region. Hence, its reference prices are a good indicator of the alternative price that would have faced Romania in the absence of its own trade barriers or systemic failures. In addition, as exported products would be competing with the EU export price on any third market, the same EU export price can be used when the country is a net exporter of the product in question.

This was the approach adopted, therefore. EU reference prices (as used for the calculation of the EU's own PSEs and those of some neighbouring countries) were used for most products. Exceptions were rye and potatoes where a German price was used (as no EU price was available and as Germany is a major producer of rye and potatoes); beef and pigmeat, where Hungarian export prices were used from 1986 to 1997 (however for 1998 and 1999 the EU export prices were applied); and milk where the OECD methodology applies the adjusted New Zealand export price for all countries.

Annex Box II.2. Transfers associated with market price support

Consider the case of a country where there are border measures and government purchasing agencies (GPAs) importing, and buying and selling in the domestic market in order to maintain the domestic price close to an administered domestic price higher than the world border price.

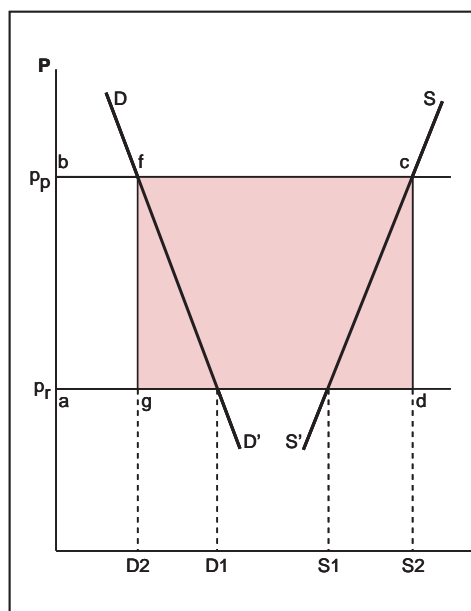
In the case of exported commodities (Annex Figure II.1), farmers sell all their production to domestic consumers (D2) and GPAs (S2-D2) at an average producer price (P_p) higher than the world reference price (P_r). The quantities purchased by the GPAs are sold in the same year in the domestic market at the average price P_p , offered as **domestic food aid** at the opportunity cost of P_p , sold in the world market (with **export subsidies**) at the average price P_r , offered as **foreign food aid** at an opportunity cost of P_r , or kept in **public storage** for later sale.

As in a given year domestic consumers and GPAs purchase all domestic production at the average price (P_p) higher than the price at which the GPAs export the commodity (P_r), the transfers to producers associated with MPS to the commodity is measured by the area $abcd = (P_p - P_r) * S_2$ and considered under **I.A. Market Price Support**. Where the area $abfg = (P_p - P_r) * D_2$ measures the share of MPS financed by consumers considered under **I.A MPS** in the PSE, and **III.P. Transfers to producers from consumers** in the CSE; and area $gfcd = (P_p - P_r) * (S_2 - D_2)$ measures **transfers to producers from taxpayers**, i.e. the share of MPS financed by taxpayers considered under **I.A MPS** in the PSE (through food aid, export subsidies, or public storage).

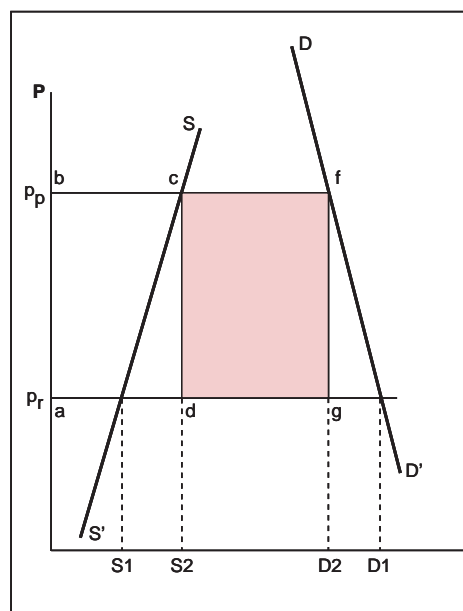
The CSE is the share of MPS financed by consumer [area $abfg = (P_p - P_r) * D_2$] (**III.P. Transfers to producers from consumers**) minus consumption subsidies in cash or in kind, and price compensating aids to processors financed by taxpayers (**III.R. Transfers to consumers from taxpayers**). The total of the transfers associated with MPS are therefore obtained by adding to the MPS in the PSE [area $abcd = (P_p - P_r) * S_2$], those under marketing and stockholding in the GSSE, and the consumption subsidies in cash and price compensation in the CSE.

In the case of imported commodities (Annex Figure II.2), both, domestic production (S_2) and imports ($D_2 - S_2$) are sold in the domestic market at the average producer price (P_p). But in both cases price compensation is provided by Government to processors (first consumers) to help them to stay competitive in the world market of processed products, and some consumption subsidies in cash and in kind are also provided. The quantities domestically produced and those imported by the GPAs are sold in the same year in the domestic market at the average price P_p , offered as **domestic food aid** at the opportunity cost of P_p or as **foreign food aid** at the opportunity cost of P_r , or kept in **public storage** for later sale.

Annex Figure II.1. Exported commodities



Annex Figure II.2. Imported commodities



Annex Box II.2. **Transfers associated with market price support** (*cont.*)

In these conditions, the transfers to producers associated with MPS to the commodity are measured by area $abcd = (P_p - P_r) * S_2$ and considered under **I.A Market Price Support** in the PSE and **III.P. Transfers to producers from consumers** in the CSE. While this area also represents the transfers from consumers to producers, the area $dcfg = (P_p - P_r) * (D_2 - S_2)$ measures the transfers from consumers to the budget through import receipts or as rents to importers or exporters due to tariff quotas (**III. Q. Other transfers from consumers or IV.V. Budget revenues**).

The CSE is measured by the area $abfg = (P_p - P_r) * D_2$ (**III.P. Transfers to producers from consumer and III.Q. Other transfers from consumers**) minus the consumption subsidies in cash or in kind, or price compensation financed by taxpayers (**III.R. Transfers to consumers from taxpayers**). The total of transfers associated with MPS is therefore obtained by adding to the MPS in the PSE [area $abcd = (P_p - P_r) * S_2$], those under marketing and stockholding in the GSSE, and the consumption subsidies in cash and price compensating aids in the CSE, *minus* the transfers from consumers to the budget and/or importers.

In both cases, exported and imported commodities, to provide such transfers to producers through MPS, other transfers are generated, mainly in the form of operational costs of GPAs, and stock depreciation and disposal costs of public stockholding. However, although these transfers contribute to creating the *price gap* received by producers, they are not in themselves a transfer to producers. They are transfers to general services provided to agriculture considered in the GSSE under **II.M. Marketing and promotion** in the case of the operational costs of GPAs, and **II.N. Public stockholding** in the case of the stock depreciation and disposal costs, which are in most of the cases dead-weight losses

Domestic producer reference price

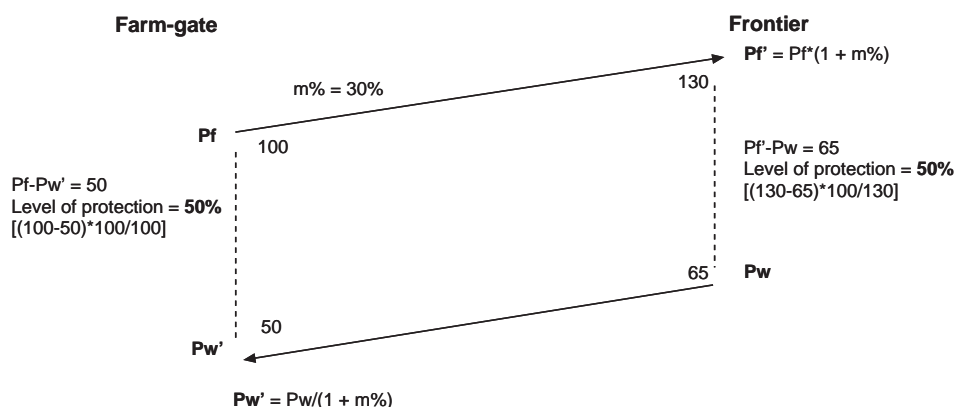
In principle, when a price comparison is made between the two reference prices (domestic and external), the comparison should be for the identical product in terms of quality and stage of processing. If the external reference price is for a quality of product very different from the average product produced, unit value of production would not be the appropriate domestic price for measurement of the price gap. In the case of Romania, the choice of domestic price was based on data availability. The domestic producer prices used were the weighted average producer prices received by state farms and registered on the peasant market, with weights based on marketed output. Before 1993, these prices were derived from the GAO calculations using unit value of each commodity, whereas from 1993 the unit values of marketed output were calculated from the producer commodity balances also issued by the National Commission of Statistics of Romania. The domestic reference prices are then adjusted by technical coefficients and margins to arrive, as close as possible, at prices comparable to the external reference price applied

3. Farm gate comparison

It is OECD practice to measure support to agriculture as near as practicable to the farm gate. However, external reference prices (if for traded goods) are applied to a product to which some value has been added after the farm gate. Hence, comparison of a farm gate domestic price with an external reference price will exclude this value-added and tend to understate the price gap.

This problem has led to two practices. First, the external reference price should be sought for a product that is as little transformed as possible. An export price for salami as a reference price for pork would create severe problems in identifying both the technical and economic margins involved between the farm gate product and the highly processed product. The same problem would arise in using an external price for flour to measure the price gap for milling wheat. The errors in such a procedure are likely to be very large. It is for this reason that for meats generally external reference prices for a carcass with minimal processing or value-added are preferred, while for grains an export price for the grain in its rawest form is preferred. The second practice involves making technical and value-added adjustments to the prices on which the comparison is based. The first practice of choosing a product with minimal transformation minimises the errors in making these adjustments. The appropriate margin can be added to the farm gate price to bring it to the frontier for comparison or, alternatively, the margin can be subtracted from the external reference price to bring it back to the farm gate for comparison. The resulting price gap will be the same at the farm gate, if percentage margins are used. A simple example may help clarify this issue and is illustrated on Annex Figure II.3.

Annex Figure II.3. Measurement of the margin between farm gate and frontier



If the farm gate price (P_f) is 100 and 30% is added to the value in getting the product to the frontier, the frontier price (P_f') is 130. If the external reference price (P_w) is 65, the price gap ($P_f' - P_w$) is also 65. The level of protection at the frontier is 50% ($50\% = [(130 - 65) * 100 / 130]$). Similarly, when the export price (P_w) of 65 is deflated by the 30% margin, it gives an external reference price (P_w'), "taken" to farm gate, of 50. This gives the same result at the farm gate, *i.e.* a level of protection of 50% ($50\% = [(100 - 50) * 100 / 100]$).

The margins for Romania are based on price estimates of the Ministry of Agriculture and Food (1999). Although they have fluctuated over the period studied, in recent years they have normally been between 5 and 40% of the average farm gate price. Margins were not applied for potatoes as in this case farm gate prices were used as the external reference price.

4. Exchange rate in PSE estimation

Currency exchange rates enter into the calculation of the PSE in two ways: firstly, when an external reference price is used that is expressed in a foreign currency, and secondly, when total PSEs are converted to some *numéraire* currency such as the US dollar for comparison with other country values. It is obvious that the exchange rate used for this purpose should be some economically meaningful figure. Since the official exchange rate seems to reflect in the most adequate way the macroeconomic conditions in which economic agents in Romania have been making decisions, these rates were selected for the calculations of basic series of PSEs and CSEs. However, in order to take into account some significant overvaluation and undervaluation in the period from 1986 to 1999, a second set of PSEs and CSEs was calculated with adjusted exchange rates.

The adjusted exchange rate used in the study is the "Atlas Conversion Factor" calculated by the World Bank. This "Atlas Conversion Factor" represents a three-year average exchange rate, with exchange rates of the current year and the two preceding years adjusted for differences in the rates of inflation between the country for which the atlas conversion factor is calculated and the G-5 countries (France, Germany, Japan, the United Kingdom, and the United States). The inflation rate for G-5 countries is represented by changes in the Special Drawing Right (SDR) deflators. The ratio of adjusted to official exchange rates is presented in Part V of the report (Table V.2). This ratio indicates that the Leu was overvalued during the pre-reform period, with the adjusted exchange rate being on average 1.5 times higher than the official one during the period 1987-1989. In 1992 on the contrary the adjusted exchange rate reflects a strong undervaluation linked with the sharp depreciation of the Leu. In effect in 1992 the Leu depreciated by more than 4 times against the US dollar, while prices increased by about 3 times. Afterwards lower inflation rates combined with appreciation of the Leu between 1994 and 1996 led to a real appreciation of the currency which returned to a more market-related equilibrium. As of 1997, the ratio of the adjusted to the official exchange rate was equal to one.

As an alternative, the purchasing power parity (PPP) could be applied. However, since the PPP reflects to a large extent a wide range of non-tradable goods (such as services, housing rents and charges, etc.), the exchange rate based on PPP does not reflect adequately the price gap for tradable goods such as agricultural products. For this reason, it has not been applied in the case of Romania.

NOTES

1. In other words, elements in the PSE are, in general, gross transfers to producers because to receive a given payment producers have to produce or plant a specific commodity, or use a specific input, and therefore incur costs, which are not deducted from the amount of the payment, although these costs may absorb a part of the payment.
2. Farm receipts (revenues) are not the same as farm income, which is farm receipts less farm costs.
3. Unlike the others payments to commodities, these payments directly increase farm income by the amount of the payment as producers do not have to incur any specific cost (other than those associated with being a farmer).
4. A payment remunerating farm inputs on condition they are used for producing a non-market good can be seen as a payment associated with constraints on the use of a set of inputs or on the choice of production techniques.
5. Unlike most of the others, these payments directly increase farm income by the amount of the payment as producers do not have to incur any specific cost (other than those necessary to generate an (or the) eligible level of farm income).
6. Gross farm receipts are not the same as farm income, which is farm receipts less farm costs.
7. That is the case of the percentage PSE and CSE as defined above. The GSSE and the TSE are not a part of the total value of farm receipts (as the PSE) nor a part of the total value of consumption expenditure of agricultural commodities (as the CSE).

**TABLES FOR CALCULATION OF ESTIMATES OF SUPPORT TO AGRICULTURE
– DEFINITIONS AND SOURCES**

GENERAL NOTES

The country Total Support Estimate (TSE) and derived indicators in Annex Table II.1.1 cover all agricultural production, *i.e.*, all agricultural commodities produced in the country.

Market Price Support (MPS) and Consumer Support Estimates (CSE) by commodity in Annex Tables II.2.1 to II.2.10 are only calculated for commodities produced in the country within a set of *common commodities* (wheat, maize, barley, oats, soybeans, sunflower, rapeseed, sugar, potatoes, milk, beef and veal, pigmeat, poultrymeat, and eggs). Definitions are provided only for basic data sets from which all the other data sets in this table are derived, following the formula indicated in each commodity table. Specific sources are numerated into brackets.

Producer Support Estimates (PSE) by commodity in Annex Tables II.3.1 to 3.10 are also calculated only for commodities produced in the country within the set of common commodities. All data sets in the calculation of PSE by commodity come from Annex Tables II.1 and 2 where definitions are included.

ANNEX TABLE II.1.1 TOTAL SUPPORT ESTIMATE

Definitions:

I. Total value of production (at farm gate): total agricultural production valued at farm gate prices, *i.e.*, value (at farm gate) of all agricultural commodities produced in the country.¹

1. Of which share of common commodities (%): share of commodities for which MPS is explicitly calculated (in Annex Tables II.2) in the total value of agricultural production.

II. Total value of consumption (at farm gate): consumption of all commodities domestically produced valued at farm gate prices, and estimated by increasing the value of consumption (at farm gate) of the common commodities according to their share in the total value of agricultural production $[(II.1) / (I.1) \times 100]$.

1. Of which common commodities: sum of the value of consumption (at farm gate prices) of the common commodities produced in the country as indicated in Annex Tables II.2.

III.1 Producer Support Estimate (PSE): associated with total agricultural production, *i.e.* for all commodities domestically produced [Sum of A to H; when negative, the amounts represent an implicit or explicit tax on producers].

A. Market Price Support: on quantities domestically produced (excluding for on-farm feed use – *excess feed cost*) of all agricultural commodities, estimated by increasing the MPS for the common commodities according to their share in the total value of production $[(A.1) / (I.1)]$.

1. Of which common commodities: sum of the MPS (net of *price levies* and *excess feed cost*) for the common commodities produced in the country as calculated in Annex Tables II.2.

B. Payments based on output

C. Payments based on area planted/animal numbers

D. Payments based on historical entitlements

E. Payments based on input use

F. Payments based on input constraints

G. Payments based on overall farming income

H. Miscellaneous payments

III.2 Percentage PSE $[100 \times (III.1) / ((I) + (B) + (C) + (D) + (E) + (F) + (G) + (H))]$

III.3 Producer NAC $[1 + (III.2) / (100 - (III.2))]$

IV. General Services Support Estimate (GSSE) [Sum(I to O)]

I. Research and development

J. Agricultural schools

K. Inspection services

L. Infrastructure

M. Marketing and promotion

N. Public stockholding

O. Miscellaneous

V.1 Consumer Support Estimate (CSE) [(P) + (Q) + (R) + (S)]

P. Transfers to producers from consumers $[(P.1) / (I.1) \times 100]$

1. Common PSE commodities $[\Sigma \text{ Annex Tables II.2}]$

Q. Other transfers from consumers $[(Q.1) / (I.1) \times 100]$

1. Common PSE commodities $[\Sigma \text{ Annex Tables II.2}]$

R. Transfers to consumers from taxpayers

S. Excess Feed Cost (-) $[\Sigma \text{ Annex Tables II.2}]$

V.2 Percentage CSE $(V.1) / [(II) - (R)]$

V.3 Consumer NAC $(V.2) / [1 - (V.2)]$

VI. Total Support Estimate [(T) + (U) + (V)] or [(III.1) + (IV) + (R)]

T. Transfers from consumers $- [(P) + (Q)]$

U. Transfers from taxpayers $[(III.1) + (P) + (IV) + (R)]$

V. Budget revenues (-) $[(Q)]$

ANNEX TABLES II.2.1 TO II.2.10 MARKET PRICE SUPPORT AND CONSUMER SUPPORT ESTIMATE BY COMMODITY

Definitions:

I. Level of production

Wheat, Maize, Barley, Oats, Potatoes, Rapeseed, Sunflower, Soybean, Sugar beet: Total production in calendar year.¹

Milk: Cow and buffalo milk production.²

Beef and Veal: Total production in carcass weight equivalent.²

Pigmeat: Total production in carcass weight equivalent.²

Poultry meat: Total production in carcass weight equivalent.²

Eggs: Total production of eggs expressed in thousand tonnes using the coefficient of 19.5 eggs per kg.¹

II. Producer price

Producer prices at farm gate level: The domestic producer prices used were:¹

- i) between 1986 and 1989, the weighted average producer prices received by state farms and prices registered on peasant market, with weights based on marketed output.
- ii) between 1990 and 1993, the prices derived from the GAO calculations using unit value of each commodity.
- iii) between 1993 and 1998, the unit values of marketed output calculated from the producer commodity balances.
- iv) in 1999, the registered average producer prices received by large scale producers and prices registered on peasant market.

IV. Level of consumption

Wheat, Maize, Barley, Oats, Potatoes, Rapeseed, Sunflower, Soybean, Sugar beet: Total domestic use defined as production plus imports minus exports minus net change in stocks.³

Beef and Veal, Pigmeat, Poultry meat: Total domestic use in carcass weight equivalent, defined as production plus imports minus exports minus net change in stocks.³

Eggs: Total domestic use of eggs expressed in thousand tonnes using the coefficient of 19.5 eggs per kg.³

VII. Reference prices

Wheat: EU export price of commercial quality wheat.⁴

Maize: EU import price.⁴

Barley: EU export price for feed barley.⁴

Oats: EU import price.⁴

Potatoes: German price at farm gate.⁴

Sunflower: EU import price.⁴

Rapeseed: EU import price.⁴

Soybean: EU import price.⁴

Sugar beet: EU export price of white sugar.⁴

Milk: New Zealand export price.⁴

Beef and Veal: Hungarian unit export value for carcasses from 1986 to 1997, extra-EU unit export value for 1998 and 1999. This price is expressed in carcass weight and recalculated from the Hungarian carcass coefficient (0.56) using the Romanian carcass coefficient.⁴

Pigmeat: Hungarian unit export value for carcasses from 1986 to 1997, extra-EU unit export value for 1998 and 1999. This price is expressed in carcass weight and recalculated from the Hungarian carcass coefficient (0.79) using the Romanian carcass coefficient.⁴

Poultry: Extra-EU unit export value.⁴

Eggs: Extra-EU unit export value.⁴

Sources:

1. National Commission of Statistics of Romania, Ministry of Agriculture and Food for 1999 data.
2. FAOstat collection database, Ministry of Agriculture and Food for 1998 and 1999 data.
3. FAOstat collection database, Ministry of Agriculture and Food network database.
4. OECD PSE/CSE databases for European Union and for Hungary.

Annex Table III.1.1. ROMANIA: Total Support Estimate / Total Transfers

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Total value of production (at farm gate)	Lei mn	184 238	168 151	176 504	164 799	265 607	750 585	2 103 868	7 370 721	16 589 067	23 938 708	35 578 952	79 727 587	100 248 810	123 111 436
1. Share of standard PSE commodities (%)	%	65	65	64	61	60	59	61	57	54	56	58	61	58	58
II. Total value of consumption (at farm gate)	Lei mn	181 304	174 531	183 803	192 641	289 964	757 008	2 235 348	7 488 969	16 225 215	20 948 198	33 957 806	65 809 562	89 802 963	120 214 573
1. Standard PSE commodities	Lei mn	117 125	114 111	117 944	116 708	172 881	448 846	1 355 176	4 246 067	8 833 957	11 722 915	19 708 437	39 857 489	52 236 781	69 926 671
III.1. Producer Support Estimate (PSE)	Lei mn	90 539	93 628	93 431	76 709	76 469	113 853	184 061	1 234 292	3 426 731	2 486 479	4 359 858	2 343 195	25 652 632	25 744 643
A. Market price support	Lei mn	87 042	87 613	87 733	73 802	71 483	103 225	64 288	992 143	2 109 448	1 482 330	2 118 925	-91 128	22 319 497	22 690 343
1. Standard PSE commodities	Lei mn	56 230	57 283	56 297	44 712	42 619	61 204	38 974	562 522	1 148 507	829 534	1 229 782	-55 192	12 982 853	13 198 568
B. Payments based on output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Payments based on area planted/animal numbers	Lei mn	415	382	340	274	317	0	0	0	11 000	42 081	46 116	18 778	25 443	800
1. Based on unlimited area or animal numbers	Lei mn	415	382	340	274	317	0	0	0	11 000	42 081	46 116	18 778	25 443	800
2. Based on limited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Payments based on historical entitlements	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on historical plantings/animal numbers or production	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on historical support programmes	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Payments based on input use	Lei mn	2 075	4 848	4 630	1 904	3 560	9 528	117 073	236 249	1 256 400	901 622	2 163 817	2 372 945	3 307 692	3 053 499
1. Based on use of variable inputs	Lei mn	208	210	216	0	159	5 653	106 795	204 114	1 089 115	657 539	1 802 397	2 189 582	3 107 032	2 662 874
2. Based on use of on-farm services	Lei mn	1 867	4 638	4 414	1 904	2 901	3 400	7 100	11 800	25 017	62 455	86 800	123 000	140 300	205 700
3. Based on use of fixed inputs	Lei mn	0	0	0	0	500	475	3 178	20 335	142 268	181 629	274 620	60 363	60 360	184 925
F. Payments based on input constraints	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on constraints on variable inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on constraints on fixed inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Based on constraints on a set of inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Payments based on overall farming income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on farm income level	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on established minimum income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Miscellaneous payments	Lei mn	1 008	784	728	728	1 109	1 100	2 700	5 900	49 883	60 445	31 000	42 600	0	0
1. National payments	Lei mn	1 008	784	728	728	1 109	1 100	2 700	5 900	49 883	60 445	31 000	42 600	0	0
2. Sub-national payments	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
III.2 Percentage PSE	%	48	54	51	46	28	15	8	16	19	10	12	3	25	20
III.3 Producer NAC		1.93	2.16	2.05	1.84	1.39	1.18	1.09	1.19	1.24	1.11	1.13	1.03	1.33	1.26
IV. General Services Support Estimate (GSSE)	Lei mn	4 240	4 402	4 535	4 683	5 628	16 198	32 479	112 130	259 869	362 318	272 008	738 172	1 218 355	1 350 003
I. Research and development	Lei mn	194	202	208	179	249	8 000	17 700	49 900	112 200	151 400	19 900	366 800	583 579	600 000
J. Agricultural schools	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
K. Inspection services	Lei mn	410	431	409	375	500	1 473	2 953	10 194	23 624	32 938	24 728	67 107	110 760	122 728
L. Infrastructure	Lei mn	2 993	3 121	3 256	3 674	4 238	6 661	11 729	51 717	123 314	176 880	227 380	304 265	513 517	627 275
M. Marketing and promotion	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N. Public stockholding	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
O. Miscellaneous	Lei mn	642	648	662	456	640	65	97	319	731	1 100	0	0	10 500	0
V.1 Consumer Support Estimate (CSE)	Lei mn	-82 684	-83 915	-80 899	-71 100	-79 520	-108 769	102 352	-1 060 709	-1 942 618	-670 510	-647 354	-41 303	-23 418 618	-25 249 022
P. Transfers to producers from consumers (-)	Lei mn	-94 281	-94 637	-89 132	-74 681	-77 226	-137 698	-63 580	-1 657 262	-2 404 114	-1 076 860	-1 724 080	-650 305	-23 240 111	-27 002 602
1. Standard PSE commodities	Lei mn	-60 907	-61 875	-57 194	-45 244	-46 043	-81 644	-38 545	-939 628	-1 308 941	-602 626	-1 000 622	-393 857	-13 518 358	-15 706 931
Q. Other transfers from consumers (-)	Lei mn	128	30	993	-884	-5 718	-4 523	6 811	-109 331	-56 155	-16 676	128 175	9 697	-813 333	-1 154 788
1. Standard PSE commodities	Lei mn	82	20	637	-535	-3 409	-2 682	4 129	-61 988	-30 574	-9 332	74 390	5 873	-473 101	-671 720
R. Transfers to consumers from taxpayers	Lei mn	0	0	0	0	0	11 481	158 424	297 751	305 419	759 856	1 201 618	515 322	114 726	205 900
S. Excess feed cost	Lei mn	11 469	10 692	7 240	4 464	3 424	21 972	698	408 134	212 232	-336 831	-253 066	83 983	520 099	2 702 467
V.2 Percentage CSE	%	-46	-48	-44	-37	-27	-15	5	-15	-12	-3	-2	0	-26	-21
V.3 Consumer NAC		1.84	1.93	1.79	1.58	1.38	1.17	0.95	1.17	1.14	1.03	1.02	1.00	1.35	1.27
VI. Total Support Estimate (TSE)	Lei mn	94 779	98 029	97 966	81 392	82 096	141 532	374 964	1 644 173	3 992 019	3 608 653	5 833 484	3 596 689	26 985 714	27 300 545
T. Transfers from consumers	Lei mn	94 153	94 607	88 138	75 564	82 944	142 221	56 769	1 766 593	2 460 270	1 093 535	1 595 905	640 608	24 053 444	28 157 390
U. Transfers from taxpayers	Lei mn	499	3 392	8 834	6 711	4 871	3 833	311 383	-13 089	1 587 904	2 531 794	4 109 403	2 946 384	3 745 603	297 944
V. Budget revenues (-)	Lei mn	128	30	993	-884	-5 718	-4 523	6 811	-109 331	-56 155	-16 676	128 175	9 697	-813 333	-1 154 788

p: provisional; e: estimate; NAC: Nominal Assistance Coefficient.
Source: OECD.

Annex Table II.1.2.i. ROMANIA: Producer support estimate by commodity

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
Wheat														
Lei mn	4 401	5 341	5 009	-576	-949	24 843	42 482	230 801	656 351	-105 661	330 591	-320 640	705 977	1 578 513
Percentage PSE	35	40	29	-4	-5	42	29	36	40	-5	17	-5	15	23
Producer NAC	1.55	1.66	1.41	0.96	0.95	1.71	1.41	1.57	1.67	0.95	1.20	0.95	1.17	1.30
Maize														
Lei mn	14 755	13 686	10 960	8 093	7 232	20 945	35 876	467 511	287 758	-254 172	59 491	711 045	798 426	3 480 512
Percentage PSE	48	60	48	40	29	20	15	43	15	-12	1	6	10	21
Producer NAC	1.91	2.50	1.91	1.67	1.41	1.25	1.18	1.75	1.18	0.89	1.01	1.07	1.11	1.26
Other grains														
Lei mn	1 044	1 601	210	-1 022	-675	5 968	-11 646	110 819	144 260	-50 785	123 100	4 575	365 217	574 253
Percentage PSE	31	43	4	-20	-12	22	-24	44	30	-12	17	0	27	30
Producer NAC	1.45	1.77	1.05	0.83	0.89	1.28	0.81	1.79	1.43	0.90	1.20	1.00	1.37	1.42
Potatoes (non-PSE commodity)														
Lei mn	1 973	2 249	3 519	3 804	6 465	29 883	137 916	397 273	265 058	840 816	2 446 820	3 246 003	5 952 943	4 298 932
Percentage PSE	22	25	37	37	46	63	66	72	29	34	71	67	61	34
Producer NAC	1.28	1.34	1.60	1.58	1.85	2.72	2.95	3.53	1.40	1.51	3.43	3.01	2.54	1.51
Oilseeds														
Lei mn	289	530	-490	-326	-525	-1 283	-7 862	7 740	-33 124	-85 542	-35 155	-377 038	-649 022	-1 600 239
Percentage PSE	7	15	-15	-10	-16	-10	-15	5	-9	-17	-4	-28	-29	-47
Producer NAC	1.08	1.17	0.87	0.91	0.86	0.91	0.87	1.05	0.91	0.85	0.96	0.78	0.78	0.68
Sugar (refined equivalent)														
Lei mn	1 236	1 008	697	1 796	287	9 421	14 173	32 515	93 441	83 902	158 352	251 038	284 353	477 893
Percentage PSE	64	54	40	55	13	70	56	63	61	50	55	53	57	73
Producer NAC	2.76	2.16	1.67	2.20	1.15	3.30	2.29	2.71	2.60	2.00	2.24	2.14	2.32	3.66
Crops¹														
Lei mn	21 725	22 166	16 386	7 965	5 370	59 895	73 023	849 386	1 148 686	-412 258	636 379	268 981	1 504 950	4 510 932
Percentage PSE	41	49	33	17	10	28	14	39	26	-8	7	1	9	15
Producer NAC	1.70	1.95	1.49	1.20	1.11	1.38	1.17	1.64	1.34	0.93	1.08	1.01	1.10	1.18

p: provisional; e: estimate; NAC: Nominal Assistance Coefficient.

1. Only PSE commodities included in aggregation.

Source: OECD.

Annex Table II.1.2.ii. ROMANIA: Producer support estimate by commodity (cont¹)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
Milk														
Lei mn	11 760	11 509	11 704	12 119	15 013	12 002	-11 662	52 632	593 197	1 101 877	1 733 183	3 140 106	7 365 891	8 601 570
Percentage PSE	64	58	54	59	61	22	-8	10	36	42	40	37	57	45
Producer NAC	2.75	2.40	2.18	2.44	2.54	1.28	0.92	1.12	1.56	1.72	1.66	1.58	2.33	1.81
Beef and Veal														
Lei mn	5 158	5 893	6 141	6 997	6 262	-6 480	44 126	-153 690	-304 082	-205 401	-411 018	-1 236 438	72 823	-1 612 868
Percentage PSE	50	51	56	59	35	-19	30	-51	-49	-27	-44	-58	2	-41
Producer NAC	2.02	2.06	2.28	2.41	1.53	0.84	1.42	0.66	0.67	0.79	0.69	0.63	1.02	0.71
Pigmeat														
Lei mn	9 800	12 245	12 806	8 383	11 007	-2 958	-7 071	58 581	456 431	548 960	452 740	-2 805 499	1 332 471	-1 338 491
Percentage PSE	42	49	53	36	31	-4	-2	7	22	20	12	-40	13	-16
Producer NAC	1.72	1.95	2.15	1.57	1.46	0.96	0.98	1.07	1.29	1.26	1.13	0.72	1.15	0.86
Poultry														
Lei mn	3 264	4 569	5 381	3 608	4 525	5 523	39 808	-24 659	259 240	349 230	453 877	674 823	1 776 039	2 984 602
Percentage PSE	26	35	45	38	30	15	27	-8	34	36	29	23	41	42
Producer NAC	1.36	1.55	1.81	1.60	1.42	1.17	1.37	0.93	1.51	1.57	1.40	1.30	1.70	1.73
Eggs														
Lei mn	7 221	6 041	8 794	8 174	3 934	1 811	6 606	-7 189	178 386	394 494	469 051	1 164 723	2 054 420	1 230 137
Percentage PSE	57	49	62	65	30	6	7	-3	29	48	32	39	52	30
Producer NAC	2.31	1.96	2.64	2.89	1.42	1.06	1.08	0.97	1.40	1.93	1.47	1.64	2.10	1.43
Livestock¹														
Lei mn	37 204	40 257	44 825	39 281	40 740	9 899	71 807	-74 323	1 183 173	2 189 159	2 697 833	937 715	12 601 643	9 864 950
Percentage PSE	48	49	54	51	38	4	8	-3	21	28	22	4	36	23
Producer NAC	1.93	1.97	2.18	2.02	1.62	1.04	1.09	0.97	1.26	1.39	1.28	1.04	1.56	1.30
All commodities¹														
Lei mn	90 539	93 628	93 431	76 709	76 469	113 853	184 061	1 234 292	3 426 731	2 486 479	4 359 858	2 343 195	25 652 632	25 744 643
Percentage PSE	48	54	51	46	28	15	8	16	19	10	12	3	25	20
Producer NAC	1.93	2.16	2.05	1.84	1.39	1.18	1.09	1.19	1.24	1.11	1.13	1.03	1.33	1.26

p: provisional; e: estimate; NAC: Nominal Assistance Coefficient.

1. Only PSE commodities included in aggregation.

Source: OECD.

Annex Table II.1.3.i Estimates of support to agriculture in selected CEECs, Russia EU and OECD average, 1986-1999

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
Estonia															
Total PSE	mn US\$	2 472	2 606	2 765	2 704	3 058	1 707	-274	-114	-43	-2	42	25	98	53
	mn Euro	2 519	2 260	2 339	2 456	2 409	1 381	-212	-97	-36	-1	33	22	88	50
General Support Estimate	mn US\$	25	21	21	28	30	34	6	10	10	18	13	11	14	12
Total Support Estimate	mn US\$	3 490	3 705	3 851	3 813	4 287	1 790	-265	-104	-32	16	55	36	112	66
	% GDP	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.	-25.4	-6.2	-1.4	0.4	1.3	0.8	2.2	1.3
Percentage PSE	%	76	76	79	74	71	59	-97	-32	-10	0	7	5	19	15
Latvia															
Total PSE	mn US\$	4 251	4 323	5 523	5 256	5 507	13 286	-486	-223	40	40	21	30	106	95
	mn Euro	4 331	3 750	4 674	4 774	4 338	10 749	-375	-190	34	31	17	27	95	90
General Support Estimate	mn US\$	249	279	275	313	187	1 666	7	6	10	16	11	10	14	8
Total Support Estimate	mn US\$	5 669	5 898	7 004	6 947	7 862	15 611	-479	-217	49	56	32	40	120	103
	% GDP	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.	-10.0	1.4	1.3	0.6	0.7	1.9	1.6
Percentage PSE	%	83	81	82	77	75	83	-101	-40	6	5	3	4	17	18
Lithuania															
Total PSE	mn US\$	5 205	5 537	7 403	6 610	7 665	-918	-733	-335	-153	1	71	128	363	344
	mn Euro	5 304	4 803	6 264	6 003	6 038	-742	-566	-286	-129	0	56	113	324	323
General Support Estimate	mn US\$	1 010	266	504	498	119	10	13	18	40	43	52	60	54	55
Total Support Estimate	mn US\$	7 970	7 719	9 831	9 129	9 552	-907	-720	-317	-113	43	122	188	416	398
	% GDP	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.	-37.4	-11.9	-2.7	0.7	1.6	2.0	4.0	5.1
Percentage PSE	%	79	77	80	75	72	-262	-124	-37	-15	0	4	7	20	21
Czech Republic															
Total PSE	mn US\$	5 044	4 546	4 194	5 242	5 293	2 326	1 326	1 198	804	560	640	370	879	919
	mn Euro	5 140	3 944	3 549	4 761	4 170	1 882	1 024	1 023	678	428	504	326	785	863
General Support Estimate	mn US\$	57	58	59	96	74	36	35	35	116	119	124	110	106	98
Total Support Estimate	mn US\$	5 917	5 425	5 034	6 764	6 102	2 362	1 361	1 234	920	679	764	480	984	1 017
	% GDP	13.6	12.1	10.8	13.9	12.0	8.5	4.3	3.5	2.2	1.3	1.3	0.9	1.7	1.9
Percentage PSE	%	66	59	53	55	54	52	31	28	20	12	13	9	21	25
Hungary															
Total PSE	mn US\$	3 367	3 001	2 676	2 109	1 850	715	855	1 030	1 318	805	627	394	692	898
	mn Euro	3 432	2 603	2 265	1 916	1 457	578	660	880	1 111	616	494	348	619	842
General Support Estimate	mn US\$	87	84	79	82	76	73	84	87	90	95	122	92	171	202
Total Support Estimate	mn US\$	3 857	3 469	2 872	2 286	1 990	835	938	1 118	1 408	900	749	486	864	1 100
	% GDP	8.7	8.0	6.6	5.5	5.3	2.5	2.5	2.9	3.4	2.0	1.7	1.1	1.8	2.2
Percentage PSE	%	44	39	35	27	24	11	16	20	24	14	9	7	13	20

Annex Table II.1.3.ii Estimates of support to agriculture in selected CEECs, Russia EU and OECD average, 1986-1999 (cont')

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
Poland															
Total PSE	mn US\$	5 258	3 769	2 814	424	-772	119	2 428	2 081	2 455	3 266	4 404	3 507	3 760	3 296
	mn Euro	5 358	3 270	2 381	386	-608	96	1 876	1 777	2 070	2 498	3 469	3 094	3 362	3 094
General Support Estimate	mn US\$	294	303	277	212	231	488	383	330	428	458	533	507	482	340
Total Support Estimate	mn US\$	6 527	4 701	5 914	2 181	-399	610	2 813	2 413	2 886	3 725	4 939	4 016	4 245	3 639
	% GDP	4.7	3.5	6.3	2.6	-0.7	0.8	3.3	2.8	2.9	2.9	3.5	2.8	2.7	2.4
Percentage PSE	%	34	26	27	5	-12	1	18	15	18	18	23	22	23	25
Slovakia															
Total PSE	mn US\$	1 754	1 712	1 636	2 306	2 030	959	585	477	422	382	234	277	503	388
	mn Euro	1 787	1 485	1 384	2 094	1 599	776	452	407	356	292	184	245	450	364
General Support Estimate	mn US\$	112	128	145	143	139	122	79	54	62	67	59	55	56	40
Total Support Estimate	mn US\$	2 127	2 118	2 063	2 999	2 435	1 081	664	531	484	450	293	332	559	428
	% GDP	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.	4.1	3.5	2.6	1.6	1.7	2.8	2.3
Percentage PSE	%	56	51	46	50	50	35	28	26	23	18	11	13	26	25
Russia															
Total PSE	mn US\$	161 292	166 435	187 055	192 200	150 651	87 759	-14 467	-5 601	-3 656	6 193	11 556	12 622	4 114	-661
	mn Euro	164 357	144 365	158 286	174 556	118 667	70 997	-11 178	-4 782	-3 082	4 738	9 104	11 133	3 710	-1 512
General Support Estimate	mn US\$	6 475	7 326	8 266	8 509	7 452	4 768	362	591	1 002	787	758	2 973	293	444
Total Support Estimate	mn US\$	216 867	223 985	268 335	278 259	226 848	124 547	-13 721	-4 594	-2 455	6 981	12 314	15 595	4 407	-218
	% GDP	n.c.	n.c.	n.c.	n.c.	n.c.	n.c.	-13.9	-2.5	-0.9	2.0	2.9	3.5	1.6	-0.1
Percentage PSE	%	82	81	81	77	70	60	-93	-24	-15	16	24	29	15	-3
EU¹															
Total PSE	mn US\$	87 921	97 348	100 373	80 195	125 653	143 195	126 799	117 847	118 508	131 038	118 367	112 260	122 946	114 450
	mn Euro	89 595	84 456	84 944	72 839	98 979	115 853	97 976	100 610	99 911	100 238	93 248	99 056	109 929	107 416
General Support Estimate	mn US\$	9 519	11 247	11 555	8 487	12 976	17 392	17 947	14 616	8 043	7 677	9 230	8 208	8 282	7 495
Total Support Estimate	mn US\$	101 562	113 450	116 960	93 219	143 964	166 461	151 308	138 897	131 927	144 125	131 818	124 965	135 570	125 873
	% GDP	2.9	2.6	2.4	1.9	2.3	2.5	2.1	2.1	1.9	1.7	1.5	1.5	1.6	1.5
Percentage PSE	%	46	44	42	38	45	51	44	44	42	41	35	38	45	49
OECD															
Total PSE	mn US\$	236 458	252 020	250 200	222 172	287 367	304 129	294 777	287 270	294 351	286 079	263 274	246 167	270 869	282 780
	mn Euro	240 960	218 644	211 740	201 791	226 364	246 057	227 769	245 254	248 159	218 838	207 405	217 213	242 190	265 400
General Support Estimate	mn US\$	39 772	39 029	44 371	45 754	51 967	64 798	67 187	68 712	61 605	68 290	60 518	54 773	54 585	52 267
Total Support Estimate	mn US\$	295 784	310 605	316 973	289 958	363 312	393 711	389 877	385 110	384 036	382 803	351 802	328 762	352 058	361 493
	% GDP	2.5	2.3	2.1	1.8	2.1	2.1	1.9	1.9	1.8	1.6	1.4	1.4	1.5	1.4
Percentage PSE	%	42	41	38	34	38	41	39	38	37	35	31	31	36	40

Notes: p: provisional; e: estimate; n.c.: not calculated;

1. EU-12 for 1986-1994, EU-15 from 1995; as from 1990, includes ex-GDR.

Source: OECD, PSE/CSE database.

Annex Table II.1.4. ROMANIA: Reference prices

Commodity	Ref. price country	Currency	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999p
Wheat	EU	ECU/t	92.4	83.0	97.3	142.6	111.9	78.9	101.7	99.8	97.2	125.0	155.9	136.0	100.2	92.5
Maize	EU	ECU/t	103.0	78.5	107.6	118.2	100.0	99.3	90.2	98.8	104.6	110.7	144.9	119.2	104.4	104.2
Rye	Germany	ECU/t	75.8	63.1	88.9	160.3	110.1	46.2	82.6	105.3	81.4	75.3	117.7	108.4	73.2	66.7
Feed Barley	EU	ECU/t	71.3	53.6	91.5	117.0	86.1	76.9	79.9	72.1	70.8	98.0	131.3	116.8	72.8	83.5
Oats	EU	ECU/t	94.0	104.5	152.6	145.1	105.9	110.3	105.6	113.4	97.9	92.9	104.8	103.7	79.0	66.7
Potatoes	Germany	US\$/t	84.9	110.1	113.9	100.0	106.1	121.2	88.3	55.7	134.6	270.1	91.0	70.4	131.2	139.8
Sunflower	EU	ECU/t	205.8	176.1	237.0	233.4	213.5	208.7	200.9	239.9	268.1	241.0	231.6	241.8	276.3	225.2
Rapeseed	EU	ECU/t	219.1	146.6	202.3	210.7	160.7	161.0	162.3	205.8	247.0	219.5	237.1	247.9	262.9	191.5
Soybean	EU	ECU/t	212.0	187.4	257.3	249.8	194.6	194.2	182.4	217.7	212.5	198.1	240.3	267.4	217.3	189.6
Refined sugar	EU	ECU/t	189.6	167.8	224.1	343.9	303.5	240.0	212.1	244.2	302.6	303.5	288.7	279.3	228.0	193.0
Milk	NZ	US\$/t	67.6	105.2	151.1	161.7	122.3	128.6	143.8	137.8	147.4	184.0	190.9	169.0	137.0	139.2
Beef and Veal (CWE)	Hungary, EU 1998-1999	US\$/t	899.6	1 127.5	1 283.1	1 381.8	1 681.1	1 461.3	1 509.0	1 959.8	2 169.6	2 686.1	2 661.9	2 637.6	2 256.7	1 750.9
Pigmeat (CWE)	Hungary, EU 1998-1999	US\$/t	860.6	895.9	869.9	1 204.2	1 391.4	1 335.1	1 533.0	1 298.2	1 305.5	1 720.5	1 927.0	2 202.9	1 705.4	1 095.2
Poultry	EU	ECU/t	975.3	846.1	755.4	905.7	942.6	983.0	969.9	981.4	987.6	943.3	1 107.3	1 182.9	1 069.1	884.1
Eggs	EU	ECU/t	632.1	787.3	663.6	666.0	795.2	824.9	715.4	793.1	814.0	674.3	928.6	874.5	709.2	600.4

p: provisional. CWE: carcass weight equivalent.

Source: OECD.

Annex Table II.2.1. WHEAT: Market Price Support and Consumer Support Estimate

		Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production		000t	6 278	6 632	8 528	7 840	7 289	5 473	3 206	5 314	6 135	7 667	3 144	7 156	5 182	4 662
1. of which feed		000t	1 637	1 634	1 725	1 800	3 433	1 849	729	1 237	1 314	1 587	913	1 248	1 248	1 248
II. Producer price (at farm gate)	data	Lei/t	1 911	1 952	1 961	1 947	2 560	10 010	28 910	106 898	210 062	225 545	466 916	825 316	857 574	1 365 652
2. Handling margin	data	%	14	14	14	14	15	17	24	16	19	20	15	17	27	36
3. Adjusted producer price	$II * [1+(2)/100]$	Lei/t	2 184	2 225	2 234	2 220	2 947	11 711	35 826	124 304	249 593	271 554	536 939	964 166	1 089 366	1 853 941
III. Value of production (at farm gate)	$[(I) * (II)/1000]$	Lei mn	11 996	12 945	16 723	15 265	18 661	54 786	92 697	568 067	1 288 793	1 729 149	1 467 899	5 906 116	4 443 797	6 366 670
IV. Level of consumption		000t	5 957	6 712	7 928	7 622	7 338	6 037	4 747	5 400	5 453	5 947	4 758	5 490	5 532	5 532
V. Consumption price (at farm gate)	$(II)-(6)+(9)/(I)*1000+((6)+(7))/(IV)*1000$	Lei/t	1 911	1 952	1 961	1 947	2 560	10 010	28 910	106 898	210 062	225 545	466 916	825 316	857 574	1 365 652
VI. Value of consumption (at farm gate)	$(IV) * (V) / 1000$	Lei mn	11 383	13 101	15 547	14 840	18 785	60 430	137 236	577 249	1 145 468	1 341 316	2 221 586	4 530 985	4 744 099	7 554 787
VII. Reference price	$(4)*(5)$	Lei/t	1 469	1 397	1 644	2 340	3 182	7 450	40 537	88 852	190 813	332 190	610 104	1 105 254	995 033	1 510 792
4. Border reference price		ECU/t	92	83	97	143	112	79	102	100	97	125	156	136	100	92
5. Official exchange rate		Lei/ECU	16	17	17	16	28	94	399	890	1 963	2 658	3 913	8 127	9 926	16 337
VIII. Producer price differential	$(II)*((3)-(VII)) / (3)$	Lei/t	626	726	518	- 104	- 204	3 642	- 3 801	30 488	49 470	- 50 362	- 63 623	- 120 770	74 261	252 771
IX. Market transfers	$(6) + (7) - (8)$ for feed crops	Lei mn	2 703	3 689	3 213	- 608	- 798	15 253	- 15 273	126 920	204 756	- 219 579	- 244 631	- 512 307	318 134	1 082 870
6. Transfers to producers from consumers	$=IF(IV)>(I),(VIII)*(I)/1000,(VIII)*(IV)/1000$	Lei mn	3 727	4 818	4 106	- 796	- 1 490	19 933	- 12 188	162 015	269 760	- 299 504	- 200 020	- 663 028	384 807	1 178 418
7. Other transfers from consumers	$=IF(IV)<(I),0,(IV)-(I)*(VIII)/1000$	Lei mn	0	58	0	0	- 10	2 054	- 5 856	2 619	0	0	- 102 699	0	26 004	219 911
8. Excess feed cost	$=IF(1)<(I),(1)*(VIII)/1000,(I)*(VIII)/1000$	Lei mn	1 024	1 187	893	- 188	- 702	6 734	- 2 771	37 713	65 004	- 79 925	- 58 088	- 150 721	92 678	315 458
X. Budgetary transfers	$(9) + (10) + (11)$	Lei mn	201	0	311	- 23	0	2 505	51 183	45 726	149 838	28 587	82 877	- 201 226	114 704	205 900
9. Transfers to producers from taxpayers	$=IF(IV)>(I),0,(I)-(IV)*(VIII)/1000$	Lei mn	201	0	311	- 23	0	0	0	0	33 753	- 86 600	0	- 201 226	0	0
10. Transfers to consumers from taxpayers	data	Lei mn	0	0	0	0	0	2 505	51 183	45 726	116 084	115 187	82 877	0	114 704	205 900
11. Price levies (-)	data	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Market Price Support (MPS)	$(6) + (9) + (11)$	Lei mn	3 928	4 818	4 417	- 818	- 1 490	19 933	- 12 188	162 015	303 513	- 386 103	- 200 020	- 864 254	384 807	1 178 418
XII. Consumer Support Estimate (CSE)	$(10) - ((6) + (7) - (8))$ for feed crops	Lei mn	- 2 703	- 3 689	- 3 213	608	798	- 12 748	66 456	- 81 194	- 88 672	334 766	327 508	512 307	- 203 430	- 876 970
XII.1 Unit CSE	$(XII) / (IV)*1000$	Lei/t	- 454	- 550	- 405	80	109	- 2 112	14 000	- 15 036	- 16 261	56 292	68 833	93 316	- 36 773	- 158 527
XII.2 Percentage CSE	$100 * (XII) / ((VI) - (10))$	%	- 24	- 28	- 21	4	4	- 22	77	- 15	- 9	27	15	11	- 4	- 12
XII.3 Consumer NAC	$1-(XII.2)/(100+(XII.2))$		1.31	1.39	1.26	0.96	0.96	1.28	0.56	1.18	1.09	0.79	0.87	0.90	1.05	1.14

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.2.2. MAIZE: Market Price Support and Consumer Support Estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e	
I. Level of production	000t	10 901	7 527	7 182	6 762	6 810	10 497	6 828	7 987	9 343	9 923	9 608	12 680	8 623	10 935	
1. of which feed	000t	7 497	4 730	4 323	4 646	4 700	6 062	5 800	5 460	6 817	7 604	7 526	7 599	7 599	7 599	
II. Producer price (at farm gate)	data Lei/t	2 787	2 967	3 148	2 948	3 600	9 950	32 540	131 466	184 941	209 565	465 439	863 329	853 919	1 495 970	
2. Handling margin	%	10	9	9	9	11	17	21	13	21	22	15	16	27	40	
3. Adjusted producer price	II * [1+(2)/100]	Lei/t	3 060	3 241	3 422	3 221	3 987	11 651	39 456	148 872	224 472	255 574	535 462	1 002 179	1 085 711	2 092 461
III. Value of production (at farm gate)	[I] * (II)/1000	Lei mn	30 376	22 336	22 612	19 933	24 515	104 449	222 192	1 050 075	1 727 903	2 079 544	4 471 915	10 946 754	7 363 657	16 358 432
IV. Level of consumption	000t	10 218	7 527	6 962	7 281	7 160	9 767	7 767	7 567	9 052	9 840	9 660	10 032	9 649	9 649	
V. Consumption price (at farm gate)	(II)-((6)+(9))/(I)*1000+((6)+(7))/(IV)*1000	Lei/t	2 787	2 967	3 148	2 948	3 600	9 950	32 540	131 466	184 941	209 565	465 439	863 329	853 919	1 495 970
VI. Value of consumption (at farm gate)	(IV) * (V) / 1000	Lei mn	28 473	22 336	21 919	21 463	25 776	97 182	252 738	994 800	1 674 085	2 062 123	4 496 144	8 660 914	8 239 462	14 434 615
VII. Reference price	(4)*(5)	Lei/t	1 637	1 321	1 818	1 939	2 844	9 376	35 953	87 962	205 340	294 187	567 056	968 723	1 035 817	1 701 685
4. Border reference price	ECU/t	103	79	108	118	100	99	99	99	105	111	145	119	104	104	
5. Official exchange rate	Lei/ECU	16	17	17	16	28	94	399	890	1 963	2 658	3 913	8 127	9 926	16 337	
VIII. Producer price differential	(II)*((3)-(VII)) / (3)	Lei/t	1 295	1 758	1 475	1 173	1 032	1 942	2 889	53 788	15 762	- 31 662	- 27 462	28 821	39 242	279 379
IX. Market transfers	(6) + (7) - (8) for feed crops	Lei mn	3 525	4 916	3 893	3 091	2 539	7 197	5 683	113 332	35 229	- 70 795	- 58 604	70 120	80 446	572 726
6. Transfers to producers from consumers	=IF(IV)>(I),(VIII)*(I)/1000,(VIII)*(IV)/1000	Lei mn	13 236	13 229	10 271	7 933	7 029	18 972	19 728	407 016	142 681	- 311 550	- 263 855	289 128	338 396	2 695 726
7. Other transfers from consumers	=IF(IV)<(I),0,(IV)-(I))*(VIII)/1000	Lei mn	0	0	0	609	362	0	2 712	0	0	0	- 1 430	0	40 248	0
8. Excess feed cost	=IF(1)<(D),(1)*(VIII)/1000,(I)*(VIII)/1000	Lei mn	9 712	8 314	6 378	5 451	4 851	11 775	16 757	293 684	107 452	- 240 755	- 206 680	219 007	298 198	2 122 999
X. Budgetary transfers	(9) + (10) + (11)	Lei mn	885	0	325	0	0	1 419	0	23 474	4 587	- 2 632	0	76 308	0	359 281
9. Transfers to producers from taxpayers	=IF(IV)>(I),0,(I-(IV))*(VIII)/1000	Lei mn	885	0	325	0	0	1 419	0	22 615	4 587	- 2 632	0	76 308	0	359 281
10. Transfers to consumers from taxpayers	data	Lei mn	0	0	0	0	0	0	859	0	0	0	0	0	0	0
11. Price levies (-)	data	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Market Price Support (MPS)	(6) + (9) + (11)	Lei mn	14 121	13 229	10 596	7 933	7 029	20 391	19 728	429 632	147 268	- 314 182	- 263 855	365 436	338 396	3 055 007
XII. Consumer Support Estimate (CSE)	(10) - ((6) + (7) - (8) for feed crops)	Lei mn	- 3 525	- 4 916	- 3 893	- 3 091	- 2 539	- 7 197	- 5 683	- 112 473	- 35 229	70 795	58 604	- 70 120	- 80 446	- 572 726
XII.1 Unit CSE	(XII) / (IV)*1000	Lei/t	- 345	- 653	- 559	- 425	- 355	- 737	- 732	- 14 864	- 3 892	7 195	6 067	- 6 990	- 8 337	- 59 356
XII.2 Percentage CSE	100* (XII) / ((VI) - (10))	%	- 12	- 22	- 18	- 14	- 10	- 7	- 2	- 11	- 2	3	1	- 1	- 4	
XII.3 Consumer NAC	1-(XII.2)/(100+(XII.2))		1.14	1.28	1.22	1.17	1.11	1.08	1.02	1.13	1.02	0.97	0.99	1.01	1.01	1.04

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.2.3. OTHER GRAINS : Market Price Support and Consumer Support Estimate

		Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	sum of data barley, and oats	000t	2 305	2 521	3 332	3 604	2 914	3 209	2 186	2 106	2 631	2 221	1 398	2 215	1 600	1 409
1. of which feed	sum of data barley, and oats	000t	1 905	2 115	2 206	2 471	2 404	1 918	1 565	1 718	1 726	680	707	614	614	614
II. Producer price (at farm gate)	[(III)/(I)*1000]	Lei/t	1 393	1 390	1 392	1 392	1 876	8 368	19 258	110 913	154 411	185 744	456 727	801 683	793 917	1 320 448
III. Value of production (at farm gate)	sum of data barley, and oats	Lei mn	3 210	3 506	4 639	5 017	5 466	26 853	42 091	233 622	406 255	412 481	638 529	1 775 513	1 270 376	1 860 247
IV. Level of consumption	sum of data barley, and oats	000t	2 722	2 565	3 271	3 628	3 645	3 153	2 725	2 878	2 936	1 830	1 757	1 814	1 822	1 822
V. Consumption price (at farm gate)	[(VI)/(IV)*1000]	Lei/t	1 394	1 391	1 392	1 391	1 869	8 361	19 096	111 658	154 765	186 336	458 585	804 303	775 833	1 267 819
VI. Value of consumption (at farm gate)	sum of data barley, and oats	Lei mn	3 793	3 567	4 554	5 047	6 812	26 361	52 037	321 350	454 390	340 995	805 733	1 459 005	1 413 878	2 310 472
VII. Reference price (at farm gate)	(II)-(VIII)	Lei/t	1 007	827	1 392	1 704	2 177	6 598	27 405	66 419	126 199	219 242	443 783	835 074	611 900	961 072
VIII. Producer price differential	[(XI)/(I)/1000]	Lei/t	386	564	0	- 312	- 301	1 770	- 8 147	44 494	28 211	- 33 497	12 944	- 33 391	182 017	359 376
IX. Market transfers	(2) + (3) - (4) for feed crops	Lei mn	324	258	26	- 347	- 366	2 106	- 8 247	61 683	45 522	- 43 677	9 185	- 71 313	176 045	242 025
2. Transfers to producers from consumers	sum of data barley, and oats	Lei mn	890	1 421	- 1	- 1 123	- 877	5 576	- 17 807	93 104	74 224	- 59 887	18 097	- 53 524	268 828	425 861
3. Other transfers from consumers	sum of data barley, and oats	Lei mn	168	27	0	- 20	- 214	0	- 3 676	45 083	11 213	0	3 491	0	39 809	87 603
4. Excess feed cost	sum of data barley, and oats	Lei mn	733	1 190	- 28	- 797	- 725	3 469	- 13 236	76 503	39 914	- 16 210	12 403	17 789	132 591	271 439
X. Budgetary transfers	(5) + (6) + (7)	Lei mn	0	0	2	0	0	106	0	1 675	0	- 14 501	0	- 20 428	22 425	80 428
5. Transfers to producers from taxpayers	sum of data barley, and oats	Lei mn	0	0	2	0	0	106	0	617	0	- 14 501	0	- 20 428	22 425	80 428
6. Transfers to consumers from taxpayers	sum of data barley, and oats	Lei mn	0	0	0	0	0	0	0	1 058	0	0	0	0	0	0
7. Price levies (-)	sum of data barley, and oats	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Market Price Support (MPS)	(2) + (5) + (7)	Lei mn	890	1 421	1	- 1 123	- 877	5 681	- 17 807	93 721	74 224	- 74 387	18 097	- 73 951	291 252	506 289
XII. Consumer Support Estimate (CSE)	(6) - ((2) + (3) - (4) for feed crops)	Lei mn	- 324	- 258	- 26	347	366	- 2 106	8 247	- 60 626	- 45 522	43 677	- 9 185	71 313	- 176 045	- 242 025
XII.1 Unit CSE	(XII) / (IV)*1000	Lei/t	- 119	- 100	- 8	96	100	- 668	3 026	- 21 065	- 15 505	23 867	- 5 228	39 313	- 96 601	- 132 806
XII.2 Percentage CSE	100* (XII) / ((VI) - (6))	%	- 9	- 7	- 1	7	5	- 8	16	- 19	- 10	13	- 1	5	- 12	- 10
XII.3 Consumer NAC	1-(XII.2)/(100+(XII.2))		1.09	1.08	1.01	0.94	0.95	1.09	0.86	1.23	1.11	0.89	1.01	0.95	1.14	1.12

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.2.3.A. BARLEY: Market Price Support and Consumer Support Estimate

		Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production		000t	2 220	2 402	3 202	3 436	2 680	2 951	1 678	1 553	2 134	1 816	1 108	1 889	1 238	1 019
1. of which feed		000t	1 831	2 013	2 094	2 296	2 200	1 700	1 117	1 268	1 270	353	436	369	369	369
II. Producer price (at farm gate) (all barley)	data	Lei/t	1 400	1 400	1 400	1 400	1 840	8 020	18 440	113 199	159 500	181 234	472 105	777 173	730 408	1 193 619
2. Handling margin	data	%	14	14	14	14	15	14	26	11	17	18	11	12	22	34
3. Adjusted producer price	II * [1+(2)/100]	Lei/t	1 593	1 593	1 593	1 593	2 113	9 182	23 256	125 505	187 031	213 943	522 128	871 023	890 200	1 593 549
III. Value of production (at farm gate)	[I] * (II)/1000	Lei mn	3 108	3 362	4 483	4 811	4 930	23 665	30 942	175 776	340 373	329 169	522 879	1 468 346	904 245	1 216 298
IV. Level of consumption		000t	2 635	2 446	3 142	3 436	3 411	2 905	2 217	2 368	2 420	1 453	1 436	1 519	1 527	1 527
V. Consumption price (at farm gate)	(II)-((6)+(9))/(I)*1000+((6)+(7))/(IV)*1000	Lei/t	1 400	1 400	1 400	1 400	1 840	8 020	18 440	113 199	159 500	181 234	472 105	777 173	730 408	1 193 619
VI. Value of consumption (at farm gate)	(IV) * (V) / 1000	Lei mn	3 689	3 424	4 399	4 810	6 276	23 298	40 881	268 055	385 989	263 333	677 943	1 180 525	1 115 625	1 823 132
VII. Average reference price	(4)*(5)	Lei/t	1 134	902	1 546	1 920	2 448	7 261	31 847	64 191	138 988	260 437	513 833	949 179	722 551	1 363 504
4. Border reference price feed barley		ECU/t	71	54	92	117	86	77	80	72	71	98	131	117	73	83
5. Official exchange rate		Lei/ECU	16	17	17	16	28	94	399	890	1 963	2 658	3 913	8 127	9 926	16 337
VIII. Producer price differential	(II)*((3)-(VII)) / (3)	Lei/t	404	607	41	- 286	- 292	1 678	- 6 812	55 302	40 971	- 39 385	7 500	- 69 735	137 556	172 311
IX. Market transfers	(6) + (7) - (8) for feed crops	Lei mn	325	263	43	- 327	- 354	2 022	- 7 493	60 833	47 117	- 43 324	7 500	- 80 195	159 345	199 605
6. Transfers to producers from consumers	=IF(IV)>(I),(VIII)*(I)/1000,(VIII)*(IV)/1000	Lei mn	897	1 459	130	- 984	- 783	4 874	- 11 430	85 874	87 433	- 57 227	8 307	- 105 927	170 294	175 585
7. Other transfers from consumers	=IF(IV)<(I),0,(IV)-(I))*(VIII)/1000	Lei mn	168	27	0	0	- 214	0	- 3 672	45 083	11 718	0	2 463	0	39 809	87 603
8. Excess feed cost	=IF(1)<(D),(1)*(VIII)/1000,(I)*(VIII)/1000	Lei mn	740	1 223	87	- 658	- 643	2 852	- 7 609	70 123	52 034	- 13 903	3 270	- 25 732	50 758	63 583
X. Budgetary transfers	(9) + (10) + (11)	Lei mn	0	0	2	0	0	77	0	1 058	0	- 14 307	0	- 25 826	0	0
9. Transfers to producers from taxpayers	=IF(IV)>(I),0,(I-(IV))*(VIII)/1000	Lei mn	0	0	2	0	0	77	0	0	0	- 14 307	0	- 25 826	0	0
10. Transfers to consumers from taxpayers	data	Lei mn	0	0	0	0	0	0	0	1 058	0	0	0	0	0	0
11. Price levies (-)	data	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Market Price Support (MPS)	(6) + (9) + (11)	Lei mn	897	1 459	133	- 984	- 783	4 950	- 11 430	85 874	87 433	- 71 535	8 307	- 131 753	170 294	175 585
XII. Consumer Support Estimate (CSE)	(10) - ((6) + (7) - (8) for feed crops)	Lei mn	- 325	- 263	- 43	327	354	- 2 022	7 493	- 59 775	- 47 117	43 324	- 7 500	80 195	- 159 345	- 199 605
XII.1 Unit CSE	(XII) / (IV)*1000	Lei/t	- 123	- 108	- 14	95	104	- 696	3 380	- 25 243	- 19 470	29 817	- 5 223	52 795	- 104 324	- 130 683
XII.2 Percentage CSE	100 * (XII) / ((VI) - (10))	%	- 9	- 8	- 1	7	6	- 9	18	- 22	- 12	16	- 1	7	- 14	- 11
XII.3 Consumer NAC	1-(XII.2)/(100+(XII.2))		1.10	1.08	1.01	0.94	0.95	1.10	0.85	1.29	1.14	0.86	1.01	0.94	1.17	1.12

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.2.3.B. OATS: Market Price Support and Consumer Support Estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e	
I. Level of production	000t	85	120	129	168	234	258	508	554	497	404	291	325	362	390	
1. of which feed	000t	74	102	112	175	204	218	448	450	456	327	271	245	245	245	
II. Producer price (at farm gate)	data	Lei/t	1 200	1 200	1 200	1 230	2 290	12 350	21 960	104 500	132 560	206 000	398 100	944 000	1 011 028	1 652 000
2. Handling margin	data	%	16	16	16	16	12	9	22	12	21	16	13	10	16	36
3. Adjusted producer price	II * [1+(2)/100]	Lei/t	1 393	1 393	1 393	1 423	2 563	13 512	26 776	116 806	160 091	238 709	448 123	1 037 850	1 170 820	2 240 179
III. Value of production (at farm gate)	[I] * (II)/1000]	Lei mn	102	144	155	206	536	3 189	11 149	57 847	65 882	83 312	115 650	307 167	366 131	643 950
IV. Level of consumption	000t	87	119	129	192	234	248	508	510	516	377	321	295	295	295	
V. Consumption price (at farm gate)	(II)-((6)+(9))/(I)*1000+((6)+(7))/(IV)*1000	Lei/t	1 200	1 200	1 200	1 230	2 290	12 350	21 960	104 500	132 560	206 000	398 100	944 000	1 011 028	1 652 000
VI. Value of consumption (at farm gate)	(IV) * (V) / 1000	Lei mn	104	143	155	236	536	3 063	11 156	53 295	68 401	77 662	127 790	278 480	298 253	487 340
VII. Reference price	(4)*(5)	Lei/t	1 494	1 759	2 579	2 381	3 012	10 415	42 091	100 960	192 188	246 883	410 188	842 552	784 017	1 089 724
4. Border reference price		ECU/t	94	105	153	145	106	110	106	113	98	93	105	104	79	67
5. Official exchange rate		Lei/ECU	16	17	17	16	28	94	399	890	1 963	2 658	3 913	8 127	9 926	16 337
VIII. Producer price differential	(II)*(3)-(VII)/(3)	Lei/t	- 87	- 315	- 1 021	- 827	- 401	2 831	- 12 560	14 176	- 26 577	- 7 054	33 700	177 638	334 013	848 393
IX. Market transfers	(6) + (7) - (8) for feed crops	Lei mn	- 1	- 5	- 17	- 20	- 12	85	- 754	851	- 1 595	- 353	1 685	8 882	16 701	42 420
6. Transfers to producers from consumers	=IF((IV)>(I),(VIII)*(I)/1000,(VIII)*(IV)/1000)	Lei mn	- 7	- 37	- 132	- 139	- 94	702	- 6 377	7 230	- 13 209	- 2 659	9 790	52 403	98 534	250 276
7. Other transfers from consumers	=IF((IV)<(I),0,((IV)-(I))*(VIII)/1000)	Lei mn	0	0	0	- 20	0	0	- 4	0	- 505	0	1 028	0	0	
8. Excess feed cost	=IF((1)<(I),(1)*(VIII)/1000,(I)*(VIII)/1000)	Lei mn	- 6	- 32	- 114	- 139	- 82	617	- 5 627	6 379	- 12 119	- 2 307	9 133	43 521	81 833	207 856
X. Budgetary transfers	(9) + (10) + (11)	Lei mn	0	0	0	0	0	29	0	617	0	- 193	0	5 398	22 425	80 428
9. Transfers to producers from taxpayers	=IF((IV)>(I),0,(I)-(IV))*(VIII)/1000)	Lei mn	0	0	0	0	0	29	0	617	0	- 193	0	5 398	22 425	80 428
10. Transfers to consumers from taxpayers	data	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Price levies (-)	data	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Market Price Support (MPS)	(6) + (9) + (11)	Lei mn	- 7	- 38	- 132	- 139	- 94	731	- 6 377	7 847	- 13 209	- 2 853	9 790	57 801	120 958	330 703
XII. Consumer Support Estimate (CSE)	(10) - ((6) + (7) - (8) for feed crops)	Lei mn	1	5	17	20	12	- 85	754	- 851	1 595	353	- 1 685	- 8 882	- 16 701	- 42 420
XII.1 Unit CSE	(XII) / (IV)*1000	Lei/t	13	45	135	104	51	- 342	1 484	- 1 668	3 090	936	- 5 249	- 30 108	- 56 612	- 143 795
XII.2 Percentage CSE	100* (XII) / ((VI) - (10))	%	1	4	11	8	2	- 3	7	- 2	2	0	- 1	- 3	- 6	- 9
XII.3 Consumer NAC	1-(XII.2)/(100+(XII.2))		0.99	0.96	0.90	0.92	0.98	1.03	0.94	1.02	0.98	1.00	1.01	1.03	1.06	1.10

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.2.4. OILSEEDS : Market Price Support and Consumer Support Estimate

		Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	sum of data for sunflower, rapeseed and soybean	000t	1 257	1 117	1 017	982	713	804	908	799	872	1 050	1 214	995	1 303	1 695
II. Producer price (at farm gate)	[(III)/(I)*1000]	Lei/t	3 083	3 067	3 089	3 137	4 411	14 855	48 082	175 526	326 320	433 025	632 496	1 218 907	1 662 054	1 975 436
III. Value of production (at farm gate)	sum of data for sunflower, rapeseed and soybean	Lei mn	3 877	3 424	3 142	3 080	3 144	11 948	43 661	140 255	284 534	454 768	767 882	1 212 642	2 165 461	3 348 449
IV. Level of consumption	sum of data for sunflower, rapeseed and soybean	000t	1 534	1 717	1 391	1 035	1 325	1 027	1 004	962	925	1 064	1 180	1 143	1 177	1 177
V. Consumption price (at farm gate)	[(VI)/(IV)*1000]	Lei/t	2 882	2 903	2 868	3 111	5 052	14 994	49 962	187 882	331 525	440 514	640 406	1 247 995	1 665 306	1 990 946
VI. Value of consumption (at farm gate)	sum of data for sunflower, rapeseed and soybean	Lei mn	4 420	4 986	3 988	3 220	6 693	15 403	50 162	180 750	306 567	468 925	755 924	1 426 591	1 959 886	2 343 128
VII. Reference price (at farm gate)	(II)-(VIII)	Lei/t	2 969	2 716	3 679	3 519	5 294	16 822	65 985	184 577	439 757	548 132	789 528	1 720 104	2 235 548	2 971 707
VIII. Producer price differential	[(XI)/(I)/1000]	Lei/t	114	351	- 590	- 382	- 883	- 1 968	- 17 903	- 9 051	- 113 437	- 115 107	- 157 032	- 501 197	- 573 493	- 996 270
IX. Market transfers	(1) + (2)-(3)	Lei mn	- 160	271	- 1 225	- 430	- 276	- 1 844	- 15 931	3 003	- 96 632	- 108 221	- 179 404	- 551 416	- 658 501	- 1 142 410
1. Transfers to producers from consumers	sum of data for sunflower, rapeseed and soybean	Lei mn	89	392	- 590	- 374	- 629	- 1 572	- 15 183	- 7 235	- 98 423	- 109 985	- 177 147	- 487 700	- 659 527	- 1 115 798
2. Other transfers from consumers	sum of data for sunflower, rapeseed and soybean	Lei mn	- 250	- 121	- 639	- 59	353	- 280	- 801	10 472	1 653	1 822	- 2 958	- 65 808	- 2 342	- 34 040
3. Excess feed cost	sum of data for sunflower, rapeseed and soybean	Lei mn	- 1	0	- 4	- 3	- 1	- 7	- 52	233	- 138	58	- 701	- 2 092	- 3 368	- 7 429
X. Budgetary transfers	(4) + (5) + (6)	Lei mn	54	0	- 10	- 1	0	586	3 736	3	- 488	- 10 902	- 13 499	- 10 920	- 87 667	- 572 923
4. Transfers to producers from taxpayers	sum of data for sunflower, rapeseed and soybean	Lei mn	54	0	- 10	- 1	0	- 11	- 1 074	3	- 488	- 10 902	- 13 499	- 10 920	- 87 667	- 572 923
5. Transfers to consumers from taxpayers	sum of data for sunflower, rapeseed and soybean	Lei mn	0	0	0	0	0	597	4 811	0	0	0	0	0	0	0
6. Price levies (-)	sum of data for sunflower, rapeseed and soybean	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Market Price Support (MPS)	(1) + (4) + (6)	Lei mn	143	392	- 600	- 375	- 629	- 1 583	- 16 257	- 7 232	- 98 911	- 120 887	- 190 645	- 498 621	- 747 194	- 1 688 721
XII. Consumer Support Estimate (CSE)	(5) - ((1) + (2)-(3))	Lei mn	160	- 271	1 225	430	276	2 441	20 742	- 3 003	96 632	108 221	179 404	551 416	658 501	1 142 410
XII.1 Unit CSE	(XII) / (IV)*1000	Lei/t	105	- 158	881	416	208	2 376	20 659	- 3 122	104 499	101 664	151 988	482 384	559 526	970 700
XII.2 Percentage CSE	100* (XII) / ((VI) - (5))	%	4	- 5	31	13	4	16	46	- 2	32	23	24	39	34	49
XII.3 Consumer NAC	1-(XII.2)/(100+(XII.2))		0.96	1.06	0.77	0.88	0.96	0.86	0.69	1.02	0.76	0.81	0.81	0.72	0.75	0.67

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.2.4.A. SUNFLOWER: Market Price Support and Consumer Support Estimate

		Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production		000t	863	747	705	656	556	612	774	696	764	933	1 096	858	1 073	1 415
1. of which feed		000t	2	2	2	2	2	2	2	2	2	4	2	2	2	2
II. Producer price (at farm gate)	data	Lei/t	3 400	3 400	3 400	3 400	4 000	14 780	46 380	157 175	316 658	427 503	617 265	1 145 290	1 700 401	2 032 884
2. Handling margin	data	%	11	11	11	11	14	16	21	16	17	15	16	17	19	22
3. Adjusted producer price	II * [1+(2)/100]	Lei/t	3 783	3 783	3 783	3 783	4 542	17 161	56 062	181 543	372 002	491 916	715 297	1 339 680	2 024 910	2 470 504
III. Value of production (at farm gate)	[I] * (II)/1000]	Lei mn	2 933	2 539	2 397	2 230	2 225	9 045	35 897	109 367	241 831	398 831	676 273	982 499	1 825 074	2 876 124
IV. Level of consumption		000t	742	867	655	655	632	643	720	762	760	858	1 018	963	963	963
V. Consumption price (at farm gate)	(II)-((6)+(9))/(I)*1000+((6)+(7))/(IV)*1000	Lei/t	3 400	3 400	3 400	3 400	4 000	14 780	46 380	157 175	316 658	427 503	617 265	1 145 290	1 700 401	2 032 884
VI. Value of consumption (at farm gate)	(IV) * (V) / 1000	Lei mn	2 523	2 947	2 226	2 227	2 526	9 500	33 414	119 784	240 655	366 975	628 497	1 102 489	1 636 855	1 956 913
VII. Reference price	(4)*(5)	Lei/t	3 273	2 964	4 004	3 830	6 071	19 710	80 076	213 584	526 302	640 357	906 390	1 964 852	2 742 293	3 679 872
4. Border reference price		ECU/t	206	176	237	233	213	209	201	240	268	241	232	242	276	225
5. Official exchange rate		Lei/ECU	16	17	17	16	28	94	399	890	1 963	2 658	3 913	8 127	9 926	16 337
VIII. Producer price differential	(II)*(3)-(VII) / (3)	Lei/t	459	736	- 199	- 42	- 1 347	- 2 195	- 19 866	- 27 740	- 131 345	- 129 004	- 164 904	- 534 458	- 602 416	- 995 143
IX. Market transfers	(6) + (7) - (8) for feed crops	Lei mn	339	636	- 130	- 27	- 848	- 1 406	- 14 272	- 21 086	- 99 605	- 110 206	- 167 629	- 513 593	- 578 899	- 956 293
6. Transfers to producers from consumers	=IF((IV)>(I),(VIII)*(I)/1000,(VIII)*(IV)/1000)	Lei mn	340	549	- 130	- 28	- 749	- 1 343	- 14 312	- 19 303	- 99 820	- 110 739	- 167 905	- 458 490	- 579 903	- 957 953
7. Other transfers from consumers	=IF((IV)<(I),0,((IV)-(I))*(VIII)/1000)	Lei mn	0	88	0	0	- 101	- 68	0	- 1 838	0	0	0	- 55 995	0	0
8. Excess feed cost	=IF((1)<(I),(1)*(VIII)/1000,(I)*(VIII)/1000)	Lei mn	1	1	0	0	- 3	- 4	- 40	- 55	- 215	- 533	- 275	- 891	- 1 005	- 1 660
X. Budgetary transfers	(9) + (10) + (11)	Lei mn	55	0	- 10	0	0	597	3 747	0	- 488	- 9 613	- 12 764	0	- 66 682	- 449 975
9. Transfers to producers from taxpayers	=IF((IV)>(I),0,(I)-(IV))*(VIII)/1000)	Lei mn	55	0	- 10	0	0	0	- 1 064	0	- 488	- 9 613	- 12 764	0	- 66 682	- 449 975
10. Transfers to consumers from taxpayers	data	Lei mn	0	0	0	0	0	597	4 811	0	0	0	0	0	0	0
11. Price levies (-)	data	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Market Price Support (MPS)	(6) + (9) + (11)	Lei mn	396	549	- 140	- 28	- 749	- 1 343	- 15 376	- 19 303	- 100 308	- 120 352	- 180 668	- 458 490	- 646 585	- 1 407 928
XII. Consumer Support Estimate (CSE)	(10) - ((6) + (7) - (8) for feed crops)	Lei mn	- 339	- 636	130	27	848	2 003	19 083	21 086	99 605	110 206	167 629	513 593	578 899	956 293
XII.1 Unit CSE	(XII) / (IV)*1000	Lei/t	- 457	- 734	199	42	1 342	3 117	26 488	27 667	131 063	128 384	164 634	533 532	601 372	993 418
XII.2 Percentage CSE	100* (XII) / ((VI) - (10))	%	- 13	- 22	6	1	34	23	67	18	41	30	27	47	35	49
XII.3 Consumer NAC	1-(XII.2)/(100+(XII.2))		1.16	1.28	0.94	0.99	0.75	0.82	0.60	0.85	0.71	0.77	0.79	0.68	0.74	0.67

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.2.4.B. RAPESEED: Market Price Support and Consumer Support Estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e	
I. Level of production	000t	14	9	17	22	15	14	8	8	8	9	5	16	29	111	
II. Producer price (at farm gate)	data	2 160	2 160	2 160	2 160	4 220	9 680	24 500	170 000	141 000	190 000	230 000	426 748	1 247 760	1 492 000	
2. Handling margin	%	13	13	13	13	9	17	28	10	27	24	30	30	18	17	
3. Adjusted producer price	II * [1+(2)/100]	2 431	2 431	2 431	2 431	4 602	11 307	31 242	187 228	179 543	235 793	300 032	555 195	1 471 469	1 748 077	
III. Value of production (at farm gate)	[(I) * (II)/1000]	Lei mn	31	19	37	48	65	134	194	1 335	1 152	1 790	1 235	6 765	35 863	166 191
IV. Level of consumption	000t	13	9	17	21	15	10	8	7	9	5	4	6	7	7	
V. Consumption price (at farm gate)	(II)-((6)+(9))/(I)*1000+((6)+(7))/(IV)*1000	Lei/t	2 160	2 160	2 160	2 160	4 220	9 680	24 500	170 000	141 000	190 000	230 000	426 748	1 247 760	1 492 000
VI. Value of consumption (at farm gate)	(IV) * (V) / 1000	Lei mn	29	18	37	45	63	101	184	1 202	1 277	916	884	2 612	8 722	10 429
VII. Reference price	(4)*(5)	Lei/t	3 483	2 468	3 418	3 457	4 570	15 203	64 676	183 181	484 926	583 436	927 971	2 015 049	2 609 172	3 127 891
4. Border reference price	ECU/t	219	147	202	211	161	161	162	206	247	220	237	248	263	191	
5. Official exchange rate	Lei/ECU	16	17	17	16	28	94	399	890	1 963	2 658	3 913	8 127	9 926	16 337	
VIII. Producer price differential	(II)*((3)-(VII)) / (3)	Lei/t	- 935	- 33	- 877	- 912	30	- 3 335	- 26 219	3 675	- 239 825	- 280 129	- 481 368	- 1 122 110	- 964 737	- 1 177 685
IX. Market transfers	(6) + (7) - (8) for feed crops	Lei mn	- 12	0	- 15	- 19	0	- 35	- 197	26	- 2 172	- 1 350	- 1 850	- 6 867	- 6 744	- 8 232
6. Transfers to producers from consumers	=IF((IV)>(I),(VIII)*(I)/1000,(VIII)*(IV)/1000)	Lei mn	- 12	0	- 15	- 19	0	- 35	- 197	26	- 1 960	- 1 350	- 1 850	- 6 867	- 6 744	- 8 232
7. Other transfers from consumers	=IF((IV)<(I),0,(IV)-(I))*(VIII)/1000)	Lei mn	0	0	0	0	0	0	0	0	- 212	0	0	0	0	0
8. Excess feed cost	No excess feed cost	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
X. Budgetary transfers	(9) + (10) + (11)	Lei mn	- 1	0	0	- 1	0	- 11	- 10	3	0	- 1 289	- 735	- 10 920	- 20 985	- 122 948
9. Transfers to producers from taxpayers	=IF((IV)>(I),0,(I)-(IV))*(VIII)/1000)	Lei mn	- 1	0	0	- 1	0	- 11	- 10	3	0	- 1 289	- 735	- 10 920	- 20 985	- 122 948
10. Transfers to consumers from taxpayers	data	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Price levies (-)	data	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Market Price Support (MPS)	(6) + (9) + (11)	Lei mn	- 13	0	- 15	- 20	0	- 46	- 207	29	- 1 960	- 2 639	- 2 585	- 17 788	- 27 728	- 131 180
XII. Consumer Support Estimate (CSE)	(10) - ((6) + (7) - (8) for feed crops)	Lei mn	12	0	15	19	0	35	197	- 26	2 172	1 350	1 850	6 867	6 744	8 232
XII.1 Unit CSE	(XII) / (IV)*1000	Lei/t	935	33	877	912	- 30	3 335	26 219	- 3 675	239 825	280 129	481 368	1 122 110	964 737	1 177 685
XII.2 Percentage CSE	100* (XII) / ((VI) - (10))	%	43	2	41	42	- 1	34	107	- 2	170	147	209	263	77	79
XII.3 Consumer NAC	1-(XII.2)/(100+(XII.2))		0.70	0.98	0.71	0.70	1.01	0.74	0.48	1.02	0.37	0.40	0.32	0.28	0.56	0.56

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.2.4.C. SOYBEAN: Market Price Support and Consumer Support Estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e	
I. Level of production	000t	380	361	295	304	141	179	126	95	100	108	113	121	201	169	
1. of which feed	000t	2	2	2	2	2	2	2	2	2	30	7	7	7	7	
II. Producer price (at farm gate)	data	Lei/t	2 400	2 400	2 400	2 640	6 050	15 510	60 000	309 876	415 182	502 008	799 177	1 843 852	1 516 399	1 813 000
2. Handling margin	data	%	11	11	11	10	6	10	11	6	9	9	9	7	15	15
3. Adjusted producer price	II * [1+(2)/100]	Lei/t	2 671	2 671	2 671	2 911	6 432	17 137	66 742	327 104	453 725	547 801	869 209	1 975 242	1 740 108	2 080 465
III. Value of production (at farm gate)	[I] * (II)/1000]	Lei mn	913	867	708	802	854	2 770	7 570	29 553	41 551	54 147	90 374	223 379	304 523	306 134
IV. Level of consumption	000t	778	842	719	359	678	374	276	193	156	201	158	174	207	207	
V. Consumption price (at farm gate)	(II)-((6)+(9))/(I)*1000+((6)+(7))/(IV)*1000	Lei/t	2 400	2 400	2 400	2 640	6 050	15 510	60 000	309 876	415 182	502 008	799 177	1 843 852	1 516 399	1 813 000
VI. Value of consumption (at farm gate)	(IV) * (V) / 1000	Lei mn	1 868	2 021	1 726	947	4 104	5 803	16 564	59 764	64 636	101 035	126 543	321 490	314 309	375 786
VII. Reference price	(4)*(5)	Lei/t	3 370	3 154	4 348	4 098	5 533	18 335	72 684	193 822	417 070	526 516	940 303	2 172 810	2 156 560	3 097 226
4. Border reference price		ECU/t	212	187	257	250	195	194	182	218	212	198	240	267	217	190
5. Official exchange rate		Lei/ECU	16	17	17	16	28	94	399	890	1 963	2 658	3 913	8 127	9 926	16 337
VIII. Producer price differential	(II)*(3)-(VII)/(3)	Lei/t	- 628	- 434	- 1 507	- 1 077	846	- 1 084	- 5 341	126 262	33 542	19 506	- 65 366	- 184 427	- 362 913	- 886 045
IX. Market transfers	(6) + (7) - (8) for feed crops	Lei mn	- 487	- 365	- 1 080	- 384	572	- 403	- 1 462	24 063	5 145	3 335	- 9 925	- 30 955	- 72 859	- 177 884
6. Transfers to producers from consumers	=IF(IV)>(I),(VIII)*(I)/1000,(VIII)*(IV)/1000	Lei mn	- 239	- 157	- 445	- 327	119	- 194	- 674	12 042	3 357	2 104	- 7 392	- 22 343	- 72 880	- 149 613
7. Other transfers from consumers	=IF(IV)<(I),0,(IV)-(I))*(VIII)/1000	Lei mn	- 250	- 209	- 639	- 59	454	- 212	- 801	12 310	1 865	1 822	- 2 958	- 9 813	- 2 342	- 34 040
8. Excess feed cost	=IF(1)<(I),(1)*(VIII)/1000,(I)*(VIII)/1000	Lei mn	- 1	- 1	- 3	- 2	2	- 2	- 12	289	77	591	- 426	- 1 201	- 2 363	- 5 769
X. Budgetary transfers	(9) + (10) + (11)	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9. Transfers to producers from taxpayers	=IF(IV)>(I),0,(I)-(IV))*(VIII)/1000	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10. Transfers to consumers from taxpayers	data	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Price levies (-)	data	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Market Price Support (MPS)	(6) + (9) + (11)	Lei mn	- 239	- 157	- 445	- 327	119	- 194	- 674	12 042	3 357	2 104	- 7 392	- 22 343	- 72 880	- 149 613
XII. Consumer Support Estimate (CSE)	(10) - ((6) + (7) - (8) for feed crops)	Lei mn	487	365	1 080	384	- 572	403	1 462	- 24 063	- 5 145	- 3 335	9 925	30 955	72 859	177 884
XII.1 Unit CSE	(XII) / (IV)*1000	Lei/t	626	433	1 502	1 070	- 843	1 078	5 297	- 124 765	- 33 049	- 16 571	62 678	177 540	351 513	858 212
XII.2 Percentage CSE	100* (XII) / ((VI) - (10))	%	26	18	63	41	- 14	7	9	- 40	- 8	- 3	8	10	23	47
XII.3 Consumer NAC	1-(XII.2)/(100+(XII.2))		0.79	0.85	0.62	0.71	1.16	0.94	0.92	1.67	1.09	1.03	0.93	0.91	0.81	0.68

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.2.5. SUGAR BEET/REFINED SUGAR: Market Price Support and Consumer Support Estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production (beet)	000t	5 397	5 217	4 869	6 771	3 278	4 703	2 897	1 776	2 764	2 655	2 848	2 726	2 361	1 415
II. Producer price (at farm gate)	data														
	Lei/t	345	345	345	480	650	2 780	6 810	26 064	44 393	56 169	84 396	160 179	201 267	450 000
1. Processing factor	data	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2. Adjusted producer price	II * (1)	Lei/t	725	725	725	1 008	1 365	5 838	14 301	54 733	93 225	117 955	177 231	336 375	945 000
III. Value of production (at farm gate) (beet)	[(I) * (II)/1000]	Lei mn	1 862	1 800	1 680	3 250	2 131	13 073	19 726	46 297	122 693	149 107	240 374	436 569	636 750
IV. Level of consumption (beet)	[LC-(3)/((4)/100)]	000t	5 397	5 217	4 869	6 021	4 028	4 720	2 897	1 776	2 773	2 655	3 352	2 729	2 729
3. Level of consumption (white sugar)		000t	489	646	581	494	574	380	273	184	208	218	279	204	231
4. Coefficient (beet to sugar)		%	9	12	12	8	14	8	9	10	7	8	8	7	8
V. Consumption price (at farm gate)	(II)-((8)+(11))/(I)*1000+((8)+(9))/(IV)*1000	Lei/t	345	345	345	480	650	2 780	6 810	26 064	44 393	56 169	84 396	160 179	201 267
VI. Value of consumption (at farm gate)	(IV) * (V) / 1000	Lei mn	1 862	1 800	1 680	2 890	2 618	13 121	19 729	46 297	123 097	149 152	282 858	437 113	549 238
VII. Reference price (beet)	(7) * (4) / 100	Lei/t	273	350	452	463	1 230	1 827	7 967	22 519	44 491	66 236	94 012	169 900	191 675
5. Border reference price (white sugar)		ECU/t	190	168	224	344	304	240	212	244	303	304	289	279	228
6. Official exchange rate		Lei/ECU	16	17	17	16	28	94	399	890	1 963	2 658	3 913	8 127	9 926
7. Border reference price (white sugar)	(5)*(6)	Lei/t	3 014	2 824	3 787	5 642	8 631	22 666	84 535	217 397	594 034	806 556	1 129 807	2 269 918	2 263 110
VIII. Producer price differential	(II)*(3)-(VII)/(3)	Lei/t	215	178	130	259	64	1 910	3 016	15 340	23 206	24 628	39 628	79 274	109 993
IX. Market transfers	(8) + (9)	Lei mn	1 161	931	633	1 562	260	9 016	8 738	27 249	64 349	65 398	132 817	216 331	300 160
8. Transfers to producers from consumers	=IF(IV)>(I),(VIII)*(I)/1000,(VIII)*(IV)/1000	Lei mn	1 161	931	633	1 562	211	8 983	8 737	27 249	64 138	65 379	112 868	216 062	259 733
9. Other transfers from consumers	=IF(IV)<(I),0,(IV)-(I))*(VIII)/1000	Lei mn	0	0	0	0	48	33	1	0	211	19	19 949	269	
10. Excess feed cost	no excess feed cost	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0
X. Budgetary transfers	(11) + (12) + (13)	Lei mn	0	0	0	195	0	385	7 534	8 400	0	0	0	0	0
11. Transfers to producers from taxpayers	=IF(IV)>(I),0,(I)-(IV))*(VIII)/1000	Lei mn	0	0	0	195	0	0	0	0	0	0	0	0	0
12. Transfers to consumers from taxpayers	data	Lei mn	0	0	0	0	385	7 534	8 400	0	0	0	0	0	0
13. Price levies (-)	data	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Market Price Support (MPS)	(8) + (11) + (13)	Lei mn	1 161	931	633	1 756	211	8 983	8 737	27 249	64 138	65 379	112 868	216 062	259 733
XII. Consumer Support Estimate (CSE)	(12) - ((8) + (9))	Lei mn	- 1 161	- 931	- 633	- 1 562	- 260	- 8 631	- 1 204	- 18 849	- 64 349	- 65 398	- 132 817	- 216 331	- 300 160
XII.1 Unit CSE (sugar)	(XII) / (5)*1000	Lei/t	- 2 376	- 1 440	- 1 090	- 3 159	- 452	- 22 689	- 4 410	- 102 438	- 309 846	- 299 901	- 476 243	- 1 059 122	- 1 298 687
XII.2 Percentage CSE	100* (XII) / ((VI) - (12))	%	- 62	- 52	- 38	- 54	- 10	- 68	- 10	- 50	- 52	- 44	- 47	- 49	
XII.3 Consumer NAC	1-(XII.2)/(100+(XII.2))		2.66	2.07	1.60	2.18	1.11	3.10	1.11	1.99	2.10	1.78	1.89	1.98	

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.2.i. POTATOES (not included in the aggregation): Market Price Support and Consumer Support Estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e	
I. Level of production	000t	5 187	4 142	3 621	4 420	3 186	1 873	2 602	3 709	2 947	3 020	3 591	3 206	3 319	3 957	
1. of which feed	000t	1 848	892	848	852	1 235	147	578	769	514	345	581	500	500	500	
II. Producer price (at farm gate)	data	Lei/t	1 732	2 127	2 581	2 341	4 370	25 160	77 250	146 086	302 227	820 315	938 219	1 422 601	2 788 143	3 114 000
2. Handling margin	data	%	0	0	0	0	0	0	0	0	0	0	0	0	0	
3. Adjusted producer price	II * [1+(2)/100]	Lei/t	1 732	2 127	2 581	2 341	4 370	25 160	77 250	146 086	302 227	820 315	938 219	1 422 601	2 788 143	3 114 000
III. Value of production (at farm gate)	[I] * (II)/1000]	Lei mn	8 984	8 808	9 345	10 347	13 921	47 119	200 977	541 819	890 579	2 477 286	3 369 499	4 560 941	9 254 264	12 322 098
IV. Level of consumption	000t	5 200	3 937	3 650	3 836	3 667	2 216	3 085	3 585	3 134	3 031	3 366	3 458	3 345	3 345	
V. Consumption price (at farm gate)	(II)-((6)+(9))/(I)*1000+((6)+(7))/(IV)*1000	Lei/t	1 732	2 127	2 581	2 341	4 370	25 160	77 250	146 086	302 227	820 315	938 219	1 422 601	2 788 143	3 114 000
VI. Value of consumption (at farm gate)	(IV) * (V) / 1000	Lei mn	9 007	8 372	9 420	8 980	16 023	55 765	238 299	523 696	947 209	2 486 771	3 157 824	4 918 971	9 325 331	10 415 206
VII. Reference price	(4)*(5)	Lei/t	1 376	1 607	1 629	1 490	2 377	9 255	27 207	42 302	222 820	549 113	280 553	504 620	1 164 068	2 143 701
4. Border reference price		US\$/t	85	110	114	100	106	121	88	56	135	270	91	70	131	140
5. Official exchange rate		Lei/US\$	16	15	14	15	22	76	308	760	1 655	2 033	3 083	7 168	8 876	15 333
VIII. Producer price differential	(II)*((3)-(VII)) / (3)	Lei/t	356	520	952	851	1 993	15 905	50 043	103 784	79 407	271 202	657 666	917 981	1 624 075	970 299
IX. Market transfers	(6) + (7) - (8) for feed crops	Lei mn	1 194	1 583	2 668	2 539	4 845	32 910	125 446	292 229	208 070	728 667	1 831 428	2 715 535	4 620 604	2 760 568
6. Transfers to producers from consumers	=IF((IV)>(I),(VIII)*(I)/1000,(VIII)*(IV)/1000)	Lei mn	1 847	2 046	3 447	3 264	6 348	29 786	130 195	372 051	233 991	819 007	2 213 549	2 943 099	5 390 547	3 245 300
7. Other transfers from consumers	=IF((IV)<(I),0,(IV)-(I))*(VIII)/1000)	Lei mn	5	0	28	0	958	5 465	24 177	0	14 879	3 136	0	231 031	41 396	0
8. Excess feed cost	=IF((1)<(I),1)*(VIII)/1000,(I)*(VIII)/1000)	Lei mn	658	463	807	725	2 461	2 341	28 926	79 822	40 799	93 476	382 120	458 596	811 339	484 732
X. Budgetary transfers	(9) + (10) + (11)	Lei mn	0	107	0	497	0	35	0	12 875	0	0	148 379	0	0	594 173
9. Transfers to producers from taxpayers	=IF((IV)>(I),0,(IV)-(I))*(VIII)/1000)	Lei mn	0	107	0	497	0	0	0	12 875	0	0	148 379	0	0	594 173
10. Transfers to consumers from taxpayers	data	Lei mn	0	0	0	0	0	35	0	0	0	0	0	0	0	0
11. Price levies (-)	data	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Market Price Support (MPS)	(6) + (9) + (11)	Lei mn	1 847	2 153	3 447	3 761	6 348	29 786	130 195	384 926	233 991	819 007	2 361 927	2 943 099	5 390 547	3 839 474
XII. Consumer Support Estimate (CSE)	(10) - ((6) + (7) - (8) for feed crops)	Lei mn	- 1 194	- 1 583	- 2 668	- 2 539	- 4 845	- 32 875	- 125 446	- 292 229	- 208 070	- 728 667	- 1 831 428	- 2 715 535	- 4 620 604	- 2 760 568
XII.1 Unit CSE	(XII) / (IV)*1000	Lei/t	- 230	- 402	- 731	- 662	- 1 322	- 14 833	- 40 666	- 81 518	- 66 389	- 240 366	- 544 134	- 785 352	- 1 381 496	- 825 371
XII.2 Percentage CSE	100* (XII) / ((VI) - (10))	%	- 13	- 19	- 28	- 28	- 30	- 59	- 53	- 56	- 22	- 29	- 58	- 55	- 50	- 27
XII.3 Consumer NAC	1-(XII.2)/(100+(XII.2))		1.15	1.23	1.40	1.39	1.43	2.44	2.11	2.26	1.28	1.41	2.38	2.23	1.98	1.36

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.2.6. MILK: Market Price Support and Consumer Support Estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	4 199	4 201	4 402	3 742	3 813	4 061	3 862	4 066	4 680	5 039	5 063	5 009	4 849	5 174
II. Producer price (at farm gate)	data														
III. Value of production (at farm gate)	Lei/t	4 322	4 533	4 744	5 348	6 310	13 362	35 643	124 604	351 479	511 317	845 177	1 706 887	2 651 239	3 710 301
IV. Level of consumption	Lei mn	18 150	19 044	20 884	20 009	24 059	54 266	137 645	506 641	1 644 781	2 576 631	4 278 717	8 549 209	12 855 860	19 197 099
V. Consumption price (at farm gate)	000t	4 199	4 206	4 403	3 743	3 813	4 085	3 873	4 111	4 697	5 050	5 086	5 022	5 022	5 022
VI. Value of consumption (at farm gate)	Lei/t	4 322	4 533	4 744	5 348	6 310	13 362	35 643	124 604	351 479	511 317	845 177	1 706 887	2 651 239	3 710 301
VII. Reference price (at farm gate)	Lei mn	18 150	19 066	20 886	20 018	24 059	54 587	138 032	512 196	1 650 792	2 582 395	4 298 752	8 572 533	13 315 370	18 634 317
1. Border reference price	data														
2. Transport cost, milk equivalent	US\$/t	68	105	151	162	122	129	144	138	147	184	191	169	137	139
3. Transport cost, butter	US\$/t	15	18	18	17	18	18	17	18	18	17	20	20	17	17
4. Transport cost, SMP	US\$/t	152	180	180	155	169	175	160	162	160	150	166	167		
5. Fat content (Romania)	data														
6. Fat content (New Zealand)	%	4	4	4	4	4	4	4	4	4	4	4	4	4	4
7. Official exchange rate	data														
VIII. Producer price differential	Lei/US\$	16	15	14	15	22	76	308	760	1 655	2 033	3 083	7 168	8 876	15 333
IX. Market transfers	Lei mn	3 221	3 081	2 816	3 227	3 775	4 488	-3 405	31 781	137 866	191 999	316 696	607 276	1 535 897	1 756 746
8. Transfers to producers from consumers	Lei mn	13 526	12 942	12 396	12 074	14 393	18 333	-13 188	130 639	647 516	969 687	1 610 784	3 049 935	7 713 767	8 822 937
9. Other transfers from consumers	Lei mn	0	15	1	5	0	108	-37	1 417	2 358	2 165	7 507	8 298	266 200	0
10. Excess feed cost	Lei mn	-2 108	-2 122	-1 449	-475	-63	-6 514	1 074	-77 524	-66 860	86 935	64 759	74 074	-109 946	-500 722
X. Budgetary transfers	Lei mn	0	0	0	0	0	4 670	17 432	35 224	83 437	183 801	230 650	108 016	22	266 465
11. Transfers to producers from taxpayers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	266 465
12. Transfers to consumers from taxpayers	Lei mn	0	0	0	0	0	4 670	17 432	35 224	83 437	183 801	230 650	108 016	22	0
13. Price levies (-)	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Market Price Support (MPS)	Lei mn	11 419	10 820	10 947	11 599	14 330	11 711	-12 077	51 698	578 299	1 054 457	1 668 036	3 115 711	7 337 621	8 588 681
XII. Consumer Support Estimate (CSE)	Lei mn	-13 526	-12 958	-12 398	-12 079	-14 393	-13 664	30 620	-95 415	-564 079	-785 886	-1 380 135	-2 941 920	-7 713 745	-8 822 937
XII.1 Unit CSE	Lei/t	-3 221	-3 081	-2 816	-3 227	-3 775	-3 345	7 907	-23 212	-120 101	-155 606	-271 348	-585 769	-1 535 893	-1 756 746
XII.2 Percentage CSE	%	-75	-68	-59	-60	-60	-27	25	-20	-36	-33	-34	-35	-58	-47
XII.3 Consumer NAC		3.93	3.12	2.46	2.52	2.49	1.38	0.80	1.25	1.56	1.49	1.51	1.53	2.38	1.90

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.2.7. BEEF AND VEAL: Market Price Support and Consumer Support Estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production (carcass)	000t	191	206	191	220	317	317	250	252	258	202	177	185	168	189
II. Producer price (at farm gate) (carcass)	data	51 900	51 900	53 302	52 535	55 740	104 500	595 960	1 186 750	2 398 763	3 725 522	5 142 411	11 431 412	20 556 899	20 929 595
1. Handling margin	data	5	5	5	5	5	5	5	5	5	5	5	5	5	5
2. Adjusted producer price	II * [1+(1)/100]	54 495	54 495	55 968	55 162	58 527	109 725	625 758	1 246 088	2 518 701	3 911 799	5 399 532	12 002 983	21 584 744	21 976 075
III. Value of production (at farm gate)	[(I) * (II)/1000]	9 887	10 707	10 181	11 531	17 642	33 127	148 692	299 061	618 881	751 740	912 341	2 116 000	3 461 782	3 955 693
IV. Level of consumption	000t	96	91	76	125	377	332	233	262	265	210	177	187	178	178
V. Consumption price (at farm gate)	(II)-((5)+(8))/(I)*1000+((5)+(6))/(IV)*1000	51 900	51 900	53 302	52 535	55 740	104 500	595 960	1 186 750	2 398 763	3 725 522	5 142 411	11 431 412	20 556 899	20 929 595
VI. Value of consumption (at farm gate)	(IV) * (V) / 1000	4 956	4 738	4 051	6 541	20 986	34 694	138 561	310 929	635 672	781 544	912 341	2 138 863	3 659 128	3 725 468
VII. Reference price	(3)*(4)	14 574	16 462	18 349	20 588	37 657	111 629	464 699	1 489 530	3 590 951	5 460 887	8 206 739	18 906 291	20 029 369	26 845 813
3. Border reference price	US\$/t	900	1 128	1 283	1 382	1 681	1 461	1 509	1 960	2 170	2 686	2 662	2 638	2 257	1 751
4. Official exchange rate	Lei/US\$	16	15	14	15	22	76	308	760	1 655	2 033	3 083	7 168	8 876	15 333
VIII. Producer price differential	(II)*((3)-(VII)) / (3)	38 019	36 222	35 827	32 927	19 876	- 1 813	153 390	-231 850	-1 021 191	-1 475 322	-2 673 531	-6 574 579	1 481 310	-4 637 846
IX. Market transfers	(5) + (6)	3 631	3 307	2 723	4 099	7 483	- 602	35 663	- 60 745	- 270 616	- 309 495	- 474 325	- 1 230 130	263 673	- 825 537
5. Transfers to producers from consumers	=IF((IV)>(I),0,(VIII)*(I)/1000,(VIII)*(IV)/1000)	3 631	3 307	2 723	4 099	6 291	- 575	35 663	- 58 426	- 263 467	- 297 692	- 474 325	- 1 216 981	249 453	- 825 537
6. Other transfers from consumers	=IF((IV)<(I),0,(IV)-(I))*(VIII)/1000)	0	0	0	0	1 193	- 27	0	- 2 318	- 7 148	- 11 803	0	- 13 149	14 221	0
7. Excess feed cost		- 2 421	- 2 322	- 1 442	- 645	- 418	- 6 033	5 567	- 95 769	- 45 928	80 282	49 925	- 25 032	- 185 047	- 740 991
X. Budgetary transfers	(8) + (9) + (10)	3 612	4 166	4 120	3 128	0	0	21 473	32 515	0	0	0	0	0	- 51 016
8. Transfers to producers from taxpayers	=IF((IV)>(I),0,(I)-(IV))*(VIII)/1000)	3 612	4 166	4 120	3 128	0	0	2 608	0	0	0	0	0	0	- 51 016
9. Transfers to consumers from taxpayers	data	0	0	0	0	0	0	18 866	32 515	0	0	0	0	0	0
10. Price levies (-)	data	0	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Market Price Support (MPS)	(5)+ (7) + (8) + (10)	4 822	5 151	5 401	6 582	5 873	- 6 608	43 838	- 154 195	- 309 395	- 217 410	- 424 400	- 1 242 013	64 406	- 1 617 544
XII. Consumer Support Estimate (CSE)	(9) - ((5) + (6))	- 3 631	- 3 307	- 2 723	- 4 099	- 7 483	602	- 16 798	93 260	270 616	309 495	474 325	1 230 130	- 263 673	825 537
XII.1 Unit CSE	(XII) / (IV)*1000	- 38 019	- 36 222	- 35 827	- 32 927	- 19 876	1 813	- 72 247	355 953	1 021 191	1 475 322	2 673 531	6 574 579	- 1 481 310	4 637 846
XII.2 Percentage CSE	100* (XII) / ((VI) - (9))	- 73	- 70	- 67	- 63	- 36	2	- 14	33	43	40	52	58	- 7	22
XII.3 Consumer NAC	1-(XII.2)/(100+(XII.2))	3.74	3.31	3.05	2.68	1.55	0.98	1.16	0.75	0.70	0.72	0.66	0.63	1.08	0.82

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.2.8. PIGMEAT: Market Price Support and Consumer Support Estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production (carcass)	000t	851	872	818	798	788	834	789	761	775	673	631	667	643	579
II. Producer price (at farm gate) (carcass)	data	27 173	27 173	27 713	28 203	43 562	94 644	424 409	1 044 095	2 187 771	3 480 958	5 208 495	10 523 866	16 231 406	14 159 293
1. Handling margin	%	7	7	7	7	7	7	7	7	7	7	7	7	7	7
2. Adjusted producer price	Lei/t	29 075	29 075	29 653	30 177	46 612	101 269	454 117	1 117 181	2 340 915	3 724 625	5 573 090	11 260 537	17 367 605	15 150 444
III. Value of production (at farm gate)	[I] * (II)/1000	23 124	23 695	22 669	22 506	34 320	78 924	334 752	794 869	1 696 179	2 342 740	3 284 717	7 016 261	10 443 287	8 198 231
IV. Level of consumption	000t	741	772	756	753	854	807	757	700	692	651	600	617	620	620
V. Consumption price (at farm gate)	(II)-((5)+(8))/(I)*1000+((5)+(6))/(IV)*1000	27 173	27 173	27 713	28 203	43 562	94 644	424 409	1 044 095	2 187 771	3 480 958	5 208 495	10 523 866	16 231 406	14 159 293
VI. Value of consumption (at farm gate)	(IV) * (V) / 1000	20 145	20 986	20 960	21 239	37 191	76 338	321 474	730 970	1 514 964	2 265 425	3 127 097	6 497 161	10 055 356	8 771 682
VII. Reference price	(3)*(4)	13 942	13 080	12 440	17 943	31 167	101 989	472 079	986 662	2 160 760	3 497 687	5 941 063	15 789 914	15 136 393	16 792 065
3. Border reference price	US\$/t	861	896	870	1 204	1 391	1 335	1 533	1 298	1 306	1 720	1 927	2 203	1 705	1 095
4. Official exchange rate	Lei/US\$	16	15	14	15	22	76	308	760	1 655	2 033	3 083	7 168	8 876	15 333
VIII. Producer price differential	(II)*((3)-(VII)) / (3)	14 143	14 949	16 086	11 434	14 434	- 673	- 16 787	121 981	168 369	212 092	- 343 900	- 4 233 062	2 085 245	- 1 534 225
IX. Market transfers	(5) + (6)	10 486	11 545	12 167	8 611	12 323	- 543	- 12 716	85 399	116 590	138 030	- 206 472	- 2 613 383	1 291 809	- 950 452
5. Transfers to producers from consumers	=IF((IV)>(I),(VIII)*(I)/1000,(VIII)*(IV)/1000)	10 486	11 545	12 167	8 611	11 372	- 543	- 12 716	85 399	116 590	138 030	- 206 472	- 2 613 383	1 291 809	- 888 316
6. Other transfers from consumers	=IF((IV)<(I),0,(IV)-(I))*(VIII)/1000)	0	0	0	0	951	0	0	0	0	0	0	0	0	- 62 136
7. Excess feed cost	Lei mn	- 2 582	- 2 272	- 1 654	- 1 338	- 1 185	- 3 331	- 3 524	- 83 084	- 33 049	63 548	53 209	- 53 233	- 81 172	- 552 179
X. Budgetary transfers	(8) + (9) + (10)	1 550	1 490	992	514	0	- 18	37 206	141 539	95 458	345 055	719 782	124 930	49 837	0
8. Transfers to producers from taxpayers	=IF((IV)>(I),0,(I)-(IV))*(VIII)/1000)	1 550	1 490	992	514	0	- 18	- 525	7 465	13 946	4 711	- 10 407	- 208 800	49 837	0
9. Transfers to consumers from taxpayers	data	0	0	0	0	0	0	37 731	134 074	81 511	340 344	730 189	333 731	0	0
10. Price levies (-)	data	0	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Market Price Support (MPS)	(5) + (7) + (8) + (10)	9 454	10 764	11 505	7 786	10 186	- 3 892	- 16 765	9 780	97 488	206 289	- 163 670	- 2 875 416	1 260 475	- 1 440 495
XII. Consumer Support Estimate (CSE)	(9) - ((5) + (6))	- 10 486	- 11 545	- 12 167	- 8 611	- 12 323	543	50 447	48 675	- 35 079	202 314	936 661	2 947 113	- 1 291 809	950 452
XII.1 Unit CSE	(XII) / (IV)*1000	- 14 143	- 14 949	- 16 086	- 11 434	- 14 434	673	66 600	69 526	- 50 658	310 867	1 560 103	4 773 627	- 2 085 245	1 534 225
XII.2 Percentage CSE	100* (XII) / ((VI) - (9))	- 52	- 55	- 58	- 41	- 33	1	18	8	- 2	11	39	48	- 13	11
XII.3 Consumer NAC	1-(XII.2)/(100+(XII.2))	2.09	2.22	2.38	1.68	1.50	0.99	0.85	0.92	1.03	0.90	0.72	0.68	1.15	0.90

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.2.9. POULTRY: Market Price Support and Consumer Support Estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e	
I. Level of production (carcass)	000t	462	463	428	339	386	332	295	301	260	286	293	254	254	266	
II. Producer price (at farm gate) (carcass)	data	26 601	26 601	26 998	27 522	38 700	110 986	488 471	965 023	2 409 912	2 930 066	4 608 091	11 545 967	16 923 580	26 364 027	
1. Handling margin	data	%	9	9	9	9	9	9	6	7	6	7	10	9	9	
2. Adjusted producer price	II * [1+(1)/100]	28 871	28 909	29 348	29 902	42 164	120 699	531 734	1 020 752	2 580 657	3 112 888	4 929 826	12 652 918	18 513 519	28 840 878	
III. Value of production (at farm gate)	[(I) * (II)/1000]	Lei mn	12 290	12 308	11 547	9 324	14 954	36 825	144 294	290 279	626 577	838 321	1 348 134	2 935 597	4 293 512	7 012 831
IV. Level of consumption	000t	423	430	388	332	430	363	322	335	293	311	295	268	258	258	
V. Consumption price (at farm gate)	(II)-((5)+(8))/(I)*1000+((5)+(6))/(IV)*1000	Lei/t	26 601	26 601	26 998	27 522	38 700	110 986	488 471	965 023	2 409 912	2 930 066	4 608 091	11 545 967	16 923 580	26 364 027
VI. Value of consumption (at farm gate)	(IV) * (V) / 1000	Lei mn	11 258	11 444	10 486	9 139	16 629	40 264	157 217	323 031	706 678	910 665	1 358 525	3 098 372	4 357 822	6 788 737
VII. Reference price	(3)*(4)	Lei/t	15 505	14 241	12 766	14 859	26 805	92 820	386 592	873 741	1 938 758	2 506 835	4 333 341	9 613 275	10 611 667	14 443 374
3. Border reference price	ECU/t	975	846	755	906	943	983	970	981	988	943	1 107	1 183	1 069	884	
4. Official exchange rate	Lei/ECU	16	17	17	16	28	94	399	890	1 963	2 658	3 913	8 127	9 926	16 337	
VIII. Producer price differential	(II)*((3)-(VII)) / (3)	Lei/t	12 315	13 497	15 255	13 846	14 097	25 635	133 334	138 984	599 428	570 459	557 557	2 773 717	7 223 242	13 161 049
IX. Market transfers	(5) + (6)	Lei mn	5 212	5 806	5 925	4 598	6 057	9 300	42 914	46 523	175 775	177 299	164 375	744 330	1 859 985	3 388 970
5. Transfers to producers from consumers	=IF(IV)>(I),(VIII)*(I)/1000,(VIII)*(IV)/1000	Lei mn	5 212	5 806	5 925	4 598	5 447	8 506	39 387	41 806	155 851	163 214	163 118	705 226	1 832 536	3 388 970
6. Other transfers from consumers	=IF(IV)<(I),0,(IV)-(I))*(VIII)/1000	Lei mn	0	0	0	0	610	794	3 527	4 717	19 924	14 085	1 257	39 104	27 448	0
7. Excess feed cost		Lei mn	-2 582	-2 272	-1 654	-1 338	-1 185	-3 331	-3 525	-83 070	-33 045	63 576	53 189	-53 290	-81 285	-552 454
X. Budgetary transfers	(8) + (9) + (10)	Lei mn	478	439	600	93	0	2 645	20 868	39 895	24 386	120 524	157 902	73 576	0	111 869
8. Transfers to producers from taxpayers	=IF(IV)>(I),0,(I)-(IV))*(VIII)/1000	Lei mn	478	439	600	93	0	0	0	0	0	0	0	0	0	111 869
9. Transfers to consumers from taxpayers	data	Lei mn	0	0	0	0	0	2 645	20 868	39 895	24 386	120 524	157 902	73 576	0	0
10. Price levies (-)	data	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Market Price Support (MPS)	(5)+ (7) + (8) + (10)	Lei mn	3 107	3 973	4 871	3 353	4 262	5 175	35 862	-41 264	122 806	226 790	216 306	651 935	1 751 252	2 948 385
XII. Consumer Support Estimate (CSE)	(9) - ((5) + (6))	Lei mn	-5 212	-5 806	-5 925	-4 598	-6 057	-6 655	-22 046	-6 628	-151 390	-56 774	-6 473	-670 754	-1 859 985	-3 388 970
XII.1 Unit CSE	(XII) / (IV)*1000	Lei/t	-12 315	-13 497	-15 255	-13 846	-14 097	-18 344	-68 498	-19 801	-516 269	-182 672	-21 956	-2 499 538	-7 223 242	-13 161 049
XII.2 Percentage CSE	100* (XII) / ((VI) - (9))	%	-46	-51	-57	-50	-36	-18	-16	-2	-22	-7	-1	-22	-43	-50
XII.3 Consumer NAC	1-(XII.2)/(100+(XII.2))		1.86	2.03	2.30	2.01	1.57	1.21	1.19	1.02	1.29	1.08	1.01	1.28	1.74	2.00

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.2.10. EGGS: Market Price Support and Consumer Support Estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	398	372	411	358	411	365	313	288	276	278	301	270	273	270
II. Producer price (at farm gate)	data														
1. Handling margin	Lei/t	31 893	32 520	33 748	34 430	31 590	84 240	286 260	867 559	2 226 061	2 921 761	4 807 887	10 994 285	14 277 382	14 976 000
2. Adjusted producer price	%	7	7	7	7	7	7	7	7	7	7	7	7	7	7
III. Value of production (at farm gate)	Lei mn	12 701	12 094	13 877	12 340	12 982	30 739	89 714	249 857	615 061	813 243	1 447 799	2 971 755	3 903 436	4 042 022
IV. Level of consumption	000t	398	372	411	358	422	362	307	286	280	281	301	276	276	276
V. Consumption price (at farm gate)	Lei/t	31 893	32 520	33 748	34 430	31 590	84 240	286 260	867 559	2 226 061	2 921 761	4 807 887	10 994 285	14 277 382	14 976 000
VI. Value of consumption (at farm gate)	Lei mn	12 684	12 086	13 874	12 311	13 332	30 466	87 990	248 495	622 244	820 375	1 449 477	3 035 951	3 942 542	4 135 458
VII. Reference price	ECU/t	10 049	13 252	11 214	10 926	22 613	77 891	285 151	706 098	1 597 964	1 791 963	3 634 011	7 106 948	7 039 459	9 808 497
3. Border reference price	ECU/t	632	787	664	666	795	825	715	793	814	674	929	875	709	600
4. Official exchange rate	Lei/ECU	16	17	17	16	28	94	399	890	1 963	2 658	3 913	8 127	9 926	16 337
VIII. Producer price differential	Lei/t	22 502	20 135	23 268	24 218	10 456	11 444	19 764	207 654	732 637	1 247 029	1 411 615	4 352 277	7 698 448	5 809 180
IX. Market transfers	Lei mn	8 949	7 483	9 565	8 660	4 413	4 139	6 075	59 478	204 792	350 142	425 572	1 201 834	2 125 842	1 604 141
5. Transfers to producers from consumers	Lei mn	8 949	7 483	9 565	8 660	4 297	4 139	6 075	59 478	202 428	347 098	425 080	1 176 421	2 104 756	1 567 898
6. Other transfers from consumers	Lei mn	0	0	0	0	116	0	0	0	2 364	3 044	493	25 413	21 086	36 243
7. Excess feed cost	Lei mn	-1 776	-1 704	-1 041	-662	-572	-2 763	-290	-68 687	-33 351	42 490	31 985	-26 502	-62 650	-356 122
X. Budgetary transfers	Lei mn	12	5	3	20	0	716	119	326	0	0	0	0	0	0
8. Transfers to producers from taxpayers	Lei mn	12	5	3	20	0	37	119	326	0	0	0	0	0	0
9. Transfers to consumers from taxpayers	Lei mn	0	0	0	0	0	679	0	0	0	0	0	0	0	0
10. Price levies (-)	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
XI. Market Price Support (MPS)	Lei mn	7 185	5 784	8 527	8 018	3 725	1 413	5 904	-8 882	169 077	389 588	457 064	1 149 919	2 042 106	1 211 776
XII. Consumer Support Estimate (CSE)	Lei mn	-8 949	-7 483	-9 565	-8 660	-4 413	-3 460	-6 075	-59 478	-204 792	-350 142	-425 572	-1 201 834	-2 125 842	-1 604 141
XII.1 Unit CSE	Lei/t	-22 502	-20 135	-23 268	-24 218	-10 456	-9 568	-19 764	-207 654	-732 637	-1 247 029	-1 411 615	-4 352 277	-7 698 448	-5 809 180
XII.2 Percentage CSE	%	-71	-62	-69	-70	-33	-12	-7	-24	-33	-43	-29	-40	-54	-39
XII.3 Consumer NAC	%	3.40	2.63	3.22	3.37	1.49	1.13	1.07	1.31	1.49	1.74	1.42	1.66	2.17	1.63

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.3.1. WHEAT : Producer support estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	6 278	6 632	8 528	7 840	7 289	5 473	3 206	5 314	6 135	7 667	3 144	7 156	5 182	4 662
II. Value of production (at farm gate)	Lei mn	11 996	12 945	16 723	15 265	18 661	54 786	92 697	568 067	1 288 793	1 729 149	1 467 899	5 906 116	4 443 797	6 366 670
III. Producer Support Estimate (PSE)	Lei mn	4 401	5 341	5 009	- 576	- 949	24 843	42 482	230 801	656 351	- 105 661	330 591	- 320 640	705 977	1 578 513
A. Market price support	Lei mn	3 928	4 818	4 417	- 818	- 1 490	19 933	- 12 188	162 015	303 513	- 386 103	- 200 020	- 864 254	384 807	1 178 418
1. Based on unlimited output	Lei mn	3 928	4 818	4 417	- 818	- 1 490	19 933	- 12 188	162 015	303 513	- 386 103	- 200 020	- 864 254	384 807	1 178 418
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Payments based on output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Payments based on area planted/animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Payments based on historical entitlements	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on historical plantings/animal numbers or production	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on historical support programmes	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Payments based on input use	Lei mn	352	416	465	114	409	4 808	54 446	67 982	345 685	270 141	527 257	534 412	321 170	400 096
1. Based on use of variable inputs	Lei mn	53	63	78	0	54	4 526	53 837	65 770	339 760	250 056	508 901	498 046	284 774	340 771
2. Based on use of on-farm services	Lei mn	299	353	387	114	296	238	519	1 884	5 180	15 303	13 669	23 325	27 805	33 004
3. Based on on-farm investment	Lei mn	0	0	0	0	60	44	89	328	745	4 782	4 686	13 040	8 591	26 321
F. Payments based on input constraints	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on constraints on variable inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on constraints on fixed inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Based on constraints on a set of inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Payments based on overall farming income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on farm income level	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on established minimum income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Miscellaneous payments	Lei mn	120	106	127	129	132	102	225	804	7 153	10 301	3 354	9 203	0	0
1. National payments	Lei mn	120	106	127	129	132	102	225	804	7 153	10 301	3 354	9 203	0	0
2. Sub-national payments	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IV. Unit PSE	Lei/t	701	805	587	- 73	- 130	4 539	13 249	43 432	106 980	- 13 782	105 156	- 44 806	136 241	338 591
V. Percentage PSE	%	35	40	29	- 4	- 5	42	29	36	40	- 5	17	- 5	15	23
VI. Producer NAC		1.55	1.66	1.41	0.96	0.95	1.71	1.41	1.57	1.67	0.95	1.20	0.95	1.17	1.30

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.3.2. MAIZE : Producer support estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	10 901	7 527	7 182	6 762	6 810	10 497	6 828	7 987	9 343	9 923	9 608	12 680	8 623	10 935
II. Value of production (at farm gate)	Lei mn	30 376	22 336	22 612	19 933	24 515	104 449	222 192	1 050 075	1 727 903	2 079 544	4 471 915	10 946 754	7 363 657	16 358 432
III. Producer Support Estimate (PSE)	Lei mn	14 755	13 686	10 960	8 093	7 232	20 945	35 876	467 511	287 758	- 254 172	59 491	711 045	798 426	3 480 512
A. Market price support	Lei mn	14 121	13 229	10 596	7 933	7 029	20 391	19 728	429 632	147 268	- 314 182	- 263 855	365 436	338 396	3 055 007
1. Based on unlimited output	Lei mn	14 121	13 229	10 596	7 933	7 029	20 391	19 728	429 632	147 268	- 314 182	- 263 855	365 436	338 396	3 055 007
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Payments based on output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Payments based on area planted/animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Payments based on historical entitlements	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on historical plantings/animal numbers or production	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on historical support programmes	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Payments based on input use	Lei mn	472	364	286	75	154	450	15 874	37 227	136 026	54 527	319 204	339 095	460 030	425 505
1. Based on use of variable inputs	Lei mn	72	55	48	0	20	162	15 133	35 433	132 330	43 834	296 542	314 371	435 853	386 098
2. Based on use of on-farm services	Lei mn	401	309	238	75	111	243	632	1 528	3 232	8 146	16 876	15 494	18 470	21 923
3. Based on on-farm investment	Lei mn	0	0	0	0	22	45	109	266	465	2 546	5 786	9 230	5 707	17 484
F. Payments based on input constraints	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on constraints on variable inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on constraints on fixed inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Based on constraints on a set of inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Payments based on overall farming income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on farm income level	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on established minimum income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Miscellaneous payments	Lei mn	161	93	78	85	50	104	274	652	4 463	5 484	4 141	6 514	0	0
1. National payments	Lei mn	161	93	78	85	50	104	274	652	4 463	5 484	4 141	6 514	0	0
2. Sub-national payments	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IV. Unit PSE	Lei/t	1 354	1 818	1 526	1 197	1 062	1 995	5 254	58 531	30 799	- 25 614	6 192	56 077	92 589	318 291
V. Percentage PSE	%	48	60	48	40	29	20	15	43	15	- 12	1	6	10	21
VI. Producer NAC		1.91	2.50	1.91	1.67	1.41	1.25	1.18	1.75	1.18	0.89	1.01	1.07	1.11	1.26

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.3.3. OTHER GRAINS: Producer support estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	2 305	2 521	3 332	3 604	2 914	3 209	2 186	2 106	2 631	2 221	1 398	2 215	1 600	1 409
II. Value of production (at farm gate)	Lei mn	3 210	3 506	4 639	5 017	5 466	26 853	42 091	233 622	406 255	412 481	638 529	1 775 513	1 270 376	1 860 247
III. Producer Support Estimate (PSE)	Lei mn	1 044	1 601	210	- 1 022	- 675	5 968	- 11 646	110 819	144 260	- 50 785	123 100	4 575	365 217	574 253
A. Market price support	Lei mn	890	1 421	1	- 1 123	- 877	5 681	- 17 807	93 721	74 224	- 74 387	18 097	- 73 951	291 252	506 289
1. Based on unlimited output	Lei mn	890	1 421	1	- 1 123	- 877	5 681	- 17 807	93 721	74 224	- 74 387	18 097	- 73 951	291 252	506 289
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Payments based on output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Payments based on area planted/animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Payments based on historical entitlements	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on historical plantings/animal numbers or production	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on historical support programmes	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Payments based on input use	Lei mn	115	143	164	48	152	227	6 053	16 801	67 659	20 981	103 509	75 728	73 964	67 964
1. Based on use of variable inputs	Lei mn	17	21	27	0	19	60	5 760	15 984	65 690	15 870	95 334	65 144	63 636	51 130
2. Based on use of on-farm services	Lei mn	98	122	138	48	111	141	250	695	1 721	3 894	6 088	6 619	7 890	9 365
3. Based on on-farm investment	Lei mn	0	0	0	0	22	26	43	121	248	1 217	2 087	3 965	2 438	7 469
F. Payments based on input constraints	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on constraints on variable inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on constraints on fixed inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Based on constraints on a set of inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Payments based on overall farming income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on farm income level	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on established minimum income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Miscellaneous payments	Lei mn	39	37	45	54	50	61	108	297	2 377	2 621	1 494	2 799	0	0
1. National payments	Lei mn	39	37	45	54	50	61	108	297	2 377	2 621	1 494	2 799	0	0
2. Sub-national payments	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IV. Unit PSE	Lei/t	453	635	63	- 284	- 232	1 860	- 5 328	52 611	54 831	- 22 869	88 051	2 066	228 241	407 619
V. Percentage PSE	%	31	43	4	- 20	- 12	22	- 24	44	30	- 12	17	0	27	30
VI. Producer NAC		1.45	1.77	1.05	0.83	0.89	1.28	0.81	1.79	1.43	0.90	1.20	1.00	1.37	1.42

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.3.3.A. BARLEY : Producer support estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	2 220	2 402	3 202	3 436	2 680	2 951	1 678	1 553	2 134	1 816	1 108	1 889	1 238	1 019
II. Value of production (at farm gate)	Lei mn	3 108	3 362	4 483	4 811	4 930	23 665	30 942	175 776	340 373	329 169	522 879	1 468 346	904 245	1 216 298
III. Producer Support Estimate (PSE)	Lei mn	1 046	1 630	335	- 888	- 596	5 217	- 6 456	99 069	148 936	- 49 448	106 912	- 64 793	223 808	226 719
A. Market price support	Lei mn	897	1 459	133	- 984	- 783	4 950	- 11 430	85 874	87 433	- 71 535	8 307	- 131 753	170 294	175 585
1. Based on unlimited output	Lei mn	897	1 459	133	- 984	- 783	4 950	- 11 430	85 874	87 433	- 71 535	8 307	- 131 753	170 294	175 585
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Payments based on output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Payments based on area planted/animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Payments based on historical entitlements	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on historical plantings/animal numbers or production	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on historical support programmes	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Payments based on input use	Lei mn	111	137	159	45	142	210	4 887	12 967	59 419	19 640	97 206	64 161	53 514	51 134
1. Based on use of variable inputs	Lei mn	17	21	26	0	19	55	4 650	12 337	57 693	14 870	89 547	53 999	43 846	35 374
2. Based on use of on-farm services	Lei mn	94	116	132	45	102	131	202	537	1 509	3 634	5 703	6 196	7 386	8 768
3. Based on on-farm investment	Lei mn	0	0	0	0	21	24	35	93	217	1 136	1 955	3 965	2 282	6 992
F. Payments based on input constraints	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on constraints on variable inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on constraints on fixed inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Based on constraints on a set of inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Payments based on overall farming income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on farm income level	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on established minimum income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Miscellaneous payments	Lei mn	38	35	43	51	46	56	87	229	2 084	2 446	1 399	2 799	0	0
1. National payments	Lei mn	38	35	43	51	46	56	87	229	2 084	2 446	1 399	2 799	0	0
2. Sub-national payments	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IV. Unit PSE	Lei/t	471	679	105	- 258	- 222	1 768	- 3 848	63 800	69 792	- 27 225	96 530	- 34 294	180 782	222 491
V. Percentage PSE	%	32	46	7	- 18	- 12	22	- 18	52	37	- 14	17	- 4	23	18
VI. Producer NAC		1.47	1.86	1.08	0.85	0.90	1.28	0.85	2.10	1.59	0.88	1.21	0.96	1.30	1.22

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.3.3.B. OATS : Producer support estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	85	120	129	168	234	258	508	554	497	404	291	325	362	390
II. Value of production (at farm gate)	Lei mn	102	144	155	206	536	3 189	11 149	57 847	65 882	83 312	115 650	307 167	366 131	643 950
III. Producer Support Estimate (PSE)	Lei mn	- 2	- 30	- 124	- 134	- 80	752	- 5 190	11 749	- 4 676	- 1 337	16 188	69 369	141 408	347 534
A. Market price support	Lei mn	- 7	- 38	- 132	- 139	- 94	731	- 6 377	7 847	- 13 209	- 2 853	9 790	57 801	120 958	330 703
1. Based on unlimited output	Lei mn	- 7	- 38	- 132	- 139	- 94	731	- 6 377	7 847	- 13 209	- 2 853	9 790	57 801	120 958	330 703
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Payments based on output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Payments based on area planted/animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Payments based on historical entitlements	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on historical plantings/animal numbers or production	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on historical support programmes	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Payments based on input use	Lei mn	4	6	6	2	11	17	1 167	3 834	8 240	1 341	6 304	11 567	20 450	16 831
1. Based on use of variable inputs	Lei mn	0	0	0	0	0	4	1 110	3 648	7 997	1 001	5 786	11 145	19 791	15 756
2. Based on use of on-farm services	Lei mn	3	6	5	2	8	10	48	159	212	260	385	422	504	598
3. Based on on-farm investment	Lei mn	0	0	0	0	2	2	8	28	31	81	132	0	156	477
F. Payments based on input constraints	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on constraints on variable inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on constraints on fixed inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Based on constraints on a set of inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Payments based on overall farming income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on farm income level	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on established minimum income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Miscellaneous payments	Lei mn	1	2	2	3	4	4	21	68	293	175	95	0	0	0
1. National payments	Lei mn	1	2	2	3	4	4	21	68	293	175	95	0	0	0
2. Sub-national payments	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IV. Unit PSE	Lei/t	- 28	- 247	- 962	- 797	- 340	2 912	- 10 222	21 225	- 9 408	- 3 306	55 724	213 187	390 483	891 571
V. Percentage PSE	%	- 2	- 20	- 76	- 63	- 14	23	- 42	19	- 6	- 2	13	22	37	53
VI. Producer NAC		0.98	0.84	0.57	0.61	0.87	1.31	0.70	1.23	0.94	0.98	1.15	1.28	1.58	2.11

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.3.4. OILSEEDS : Producer support estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	1 257	1 117	1 017	982	713	804	908	799	872	1 050	1 214	995	1 303	1 695
II. Value of production (at farm gate)	Lei mn	3 877	3 424	3 142	3 080	3 144	11 948	43 661	140 255	284 534	454 768	767 882	1 212 642	2 165 461	3 348 449
III. Producer Support Estimate (PSE)	Lei mn	289	530	- 490	- 326	- 525	- 1 283	- 7 862	7 740	- 33 124	- 85 542	- 35 155	- 377 038	- 649 022	- 1 600 239
A. Market price support	Lei mn	143	392	- 600	- 375	- 629	- 1 583	- 16 257	- 7 232	- 98 911	- 120 887	- 190 645	- 498 621	- 747 194	- 1 688 721
1. Based on unlimited output	Lei mn	143	392	- 600	- 375	- 629	- 1 583	- 16 257	- 7 232	- 98 911	- 120 887	- 190 645	- 498 621	- 747 194	- 1 688 721
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Payments based on output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Payments based on area planted/animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Payments based on historical entitlements	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on historical plantings/animal numbers or production	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on historical support programmes	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Payments based on input use	Lei mn	107	109	85	23	78	264	8 269	14 724	63 644	31 788	153 273	119 369	98 172	88 482
1. Based on use of variable inputs	Lei mn	13	13	11	0	8	164	7 927	14 040	61 869	24 852	141 134	100 800	74 091	49 230
2. Based on use of on-farm services	Lei mn	95	96	74	23	58	84	291	582	1 552	5 284	9 039	15 433	18 397	21 837
3. Based on on-farm investment	Lei mn	0	0	0	0	12	16	50	101	223	1 651	3 099	3 137	5 684	17 415
F. Payments based on input constraints	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on constraints on variable inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on constraints on fixed inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Based on constraints on a set of inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Payments based on overall farming income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on farm income level	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on established minimum income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Miscellaneous payments	Lei mn	38	29	24	26	26	36	126	249	2 143	3 557	2 218	2 214	0	0
1. National payments	Lei mn	38	29	24	26	26	36	126	249	2 143	3 557	2 218	2 214	0	0
2. Sub-national payments	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IV. Unit PSE	Lei/t	230	475	- 482	- 332	- 737	- 1 595	- 8 658	9 687	- 37 989	- 81 452	- 28 956	- 378 986	- 498 143	- 944 070
V. Percentage PSE	%	7	15	- 15	- 10	- 16	- 10	- 15	5	- 9	- 17	- 4	- 28	- 29	- 47
VI. Producer NAC		1.08	1.17	0.87	0.91	0.86	0.91	0.87	1.05	0.91	0.85	0.96	0.78	0.78	0.68

p: provisional ; e: estimate.

Annex Table II.3.4.A. SUNFLOWER : Producer support estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	863	747	705	656	556	612	774	696	764	933	1 096	858	1 073	1 415
II. Value of production (at farm gate)	Lei mn	2 933	2 539	2 397	2 230	2 225	9 045	35 897	109 367	241 831	398 831	676 273	982 499	1 825 074	2 876 124
III. Producer Support Estimate (PSE)	Lei mn	492	638	- 67	3	- 671	- 1 208	- 9 738	- 8 583	- 49 804	- 94 259	- 54 973	- 363 327	- 561 989	- 1 332 353
A. Market price support	Lei mn	396	549	- 140	- 28	- 749	- 1 343	- 15 376	- 19 303	- 100 308	- 120 352	- 180 668	- 458 490	- 646 585	- 1 407 928
1. Based on unlimited output	Lei mn	396	549	- 140	- 28	- 749	- 1 343	- 15 376	- 19 303	- 100 308	- 120 352	- 180 668	- 458 490	- 646 585	- 1 407 928
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Payments based on output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Payments based on area planted/animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Payments based on historical entitlements	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on historical plantings/animal numbers or production	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on historical support programmes	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Payments based on input use	Lei mn	71	71	58	14	59	111	5 542	10 535	48 787	23 150	123 850	93 555	84 597	75 575
1. Based on use of variable inputs	Lei mn	11	11	10	0	8	44	5 283	10 028	47 364	17 412	113 753	79 149	65 672	44 729
2. Based on use of on-farm services	Lei mn	61	60	48	14	43	57	221	432	1 244	4 372	7 519	12 128	14 457	17 160
3. Based on on-farm investment	Lei mn	0	0	0	0	9	11	38	75	179	1 366	2 578	2 279	4 467	13 686
F. Payments based on input constraints	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on constraints on variable inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on constraints on fixed inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Based on constraints on a set of inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Payments based on overall farming income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on farm income level	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on established minimum income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Miscellaneous payments	Lei mn	24	18	16	16	19	24	96	184	1 717	2 943	1 845	1 608	0	0
1. National payments	Lei mn	24	18	16	16	19	24	96	184	1 717	2 943	1 845	1 608	0	0
2. Sub-national payments	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IV. Unit PSE	Lei/t	570	855	- 94	4	- 1 206	- 1 974	- 12 582	- 12 334	- 65 214	- 101 035	- 50 176	- 423 527	- 523 599	- 941 725
V. Percentage PSE	%	16	24	- 3	0	- 29	- 13	- 23	- 7	- 17	- 22	- 7	- 34	- 29	- 45
VI. Producer NAC		1.19	1.32	0.97	1.00	0.77	0.88	0.81	0.93	0.85	0.82	0.94	0.75	0.77	0.69

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.3.4.B. RAPESEED : Producer support estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	14	9	17	22	15	14	8	8	8	9	5	16	29	111
II. Value of production (at farm gate)	Lei mn	31	19	37	48	65	134	194	1 335	1 152	1 790	1 235	6 765	35 863	166 191
III. Producer Support Estimate (PSE)	Lei mn	- 12	1	- 14	- 19	2	- 44	- 199	63	- 1 945	- 2 632	- 2 467	- 16 825	- 26 939	- 130 448
A. Market price support	Lei mn	- 13	0	- 15	- 20	0	- 46	- 207	29	- 1 960	- 2 639	- 2 585	- 17 788	- 27 728	- 131 180
1. Based on unlimited output	Lei mn	- 13	0	- 15	- 20	0	- 46	- 207	29	- 1 960	- 2 639	- 2 585	- 17 788	- 27 728	- 131 180
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Payments based on output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Payments based on area planted/animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Payments based on historical entitlements	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on historical plantings/animal numbers or production	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on historical support programmes	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Payments based on input use	Lei mn	1	1	1	0	1	1	8	33	14	6	116	963	789	732
1. Based on use of variable inputs	Lei mn	0	0	0	0	0	0	8	32	14	5	107	803	539	324
2. Based on use of on-farm services	Lei mn	1	1	1	0	1	1	0	1	0	1	7	160	191	227
3. Based on on-farm investment	Lei mn	0	0	0	0	0	0	0	0	0	0	2	0	59	181
F. Payments based on input constraints	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on constraints on variable inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on constraints on fixed inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Based on constraints on a set of inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Payments based on overall farming income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on farm income level	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on established minimum income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Miscellaneous payments	Lei mn	0	0	0	0	0	0	0	1	0	1	2	0	0	0
1. National payments	Lei mn	0	0	0	0	0	0	0	1	0	1	2	0	0	0
2. Sub-national payments	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IV. Unit PSE	Lei/t	- 838	65	- 806	- 873	138	- 3 215	- 25 173	8 006	- 238 046	- 279 367	- 459 359	- 1 061 350	- 937 280	- 1 171 113
V. Percentage PSE	%	- 37	3	- 36	- 40	3	- 33	- 99	5	- 167	- 146	- 182	- 218	- 73	- 78
VI. Producer NAC		0.73	1.03	0.73	0.72	1.03	0.75	0.50	1.05	0.37	0.41	0.35	0.31	0.58	0.56

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.3.4.C. SOYBEAN : Producer support estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	380	361	295	304	141	179	126	95	100	108	113	121	201	169
II. Value of production (at farm gate)	Lei mn	913	867	708	802	854	2 770	7 570	29 553	41 551	54 147	90 374	223 379	304 523	306 134
III. Producer Support Estimate (PSE)	Lei mn	- 191	- 108	- 410	- 310	144	- 30	2 075	16 260	18 625	11 349	22 286	3 113	- 60 094	- 137 439
A. Market price support	Lei mn	- 239	- 157	- 445	- 327	119	- 194	- 674	12 042	3 357	2 104	- 7 392	- 22 343	- 72 880	- 149 613
1. Based on unlimited output	Lei mn	- 239	- 157	- 445	- 327	119	- 194	- 674	12 042	3 357	2 104	- 7 392	- 22 343	- 72 880	- 149 613
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Payments based on output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Payments based on area planted/animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Payments based on historical entitlements	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on historical plantings/animal numbers or production	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on historical support programmes	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Payments based on input use	Lei mn	35	38	27	8	18	152	2 718	4 155	14 843	8 631	29 306	24 851	12 786	12 175
1. Based on use of variable inputs	Lei mn	2	2	2	0	1	120	2 637	3 980	14 491	7 435	27 275	20 848	7 879	4 177
2. Based on use of on-farm services	Lei mn	33	36	25	8	14	27	70	149	308	911	1 513	3 145	3 749	4 449
3. Based on on-farm investment	Lei mn	0	0	0	0	3	5	12	26	44	285	519	858	1 158	3 548
F. Payments based on input constraints	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on constraints on variable inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on constraints on fixed inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Based on constraints on a set of inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Payments based on overall farming income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on farm income level	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on established minimum income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Miscellaneous payments	Lei mn	13	11	8	9	6	12	30	64	425	613	371	605	0	0
1. National payments	Lei mn	13	11	8	9	6	12	30	64	425	613	371	605	0	0
2. Sub-national payments	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IV. Unit PSE	Lei/t	- 501	- 300	- 1 389	- 1 019	1 017	- 170	16 446	170 495	186 101	105 217	197 070	25 699	- 299 243	- 813 945
V. Percentage PSE	%	- 20	- 12	- 55	- 38	16	- 1	20	48	33	18	19	1	- 19	- 43
VI. Producer NAC		0.83	0.89	0.64	0.73	1.20	0.99	1.25	1.93	1.49	1.22	1.23	1.01	0.84	0.70

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.3.5. SUGAR BEET/REFINED SUGAR : Producer support estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	5 397	5 217	4 869	6 771	3 278	4 703	2 897	1 776	2 764	2 655	2 848	2 726	2 361	1 415
II. Value of production (at farm gate)	Lei mn	1 862	1 800	1 680	3 250	2 131	13 073	19 726	46 297	122 693	149 107	240 374	436 569	475 264	636 750
III. Producer Support Estimate (PSE)	Lei mn	1 236	1 008	697	1 796	287	9 421	14 173	32 515	93 441	83 902	158 352	251 038	284 353	477 893
A. Market price support	Lei mn	1 161	931	633	1 756	211	8 983	8 737	27 249	64 138	65 379	112 868	216 062	259 733	456 773
1. Based on unlimited output	Lei mn	1 161	931	633	1 756	211	8 983	8 737	27 249	64 138	65 379	112 868	216 062	259 733	456 773
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Payments based on output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Payments based on area planted/animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Payments based on historical entitlements	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on historical plantings/animal numbers or production	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on historical support programmes	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Payments based on input use	Lei mn	56	62	50	18	58	412	5 393	5 203	28 587	17 712	45 007	34 475	24 620	21 120
1. Based on use of variable inputs	Lei mn	8	9	8	0	8	341	5 277	5 028	27 994	16 130	42 400	31 762	21 494	16 024
2. Based on use of on-farm services	Lei mn	48	52	42	18	42	60	99	149	518	1 205	1 941	2 004	2 388	2 835
3. Based on on-farm investment	Lei mn	0	0	0	0	8	11	17	26	75	377	666	710	738	2 261
F. Payments based on input constraints	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on constraints on variable inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on constraints on fixed inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Based on constraints on a set of inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Payments based on overall farming income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on farm income level	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on established minimum income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Miscellaneous payments	Lei mn	19	16	14	21	19	26	43	64	716	811	476	501	0	0
1. National payments	Lei mn	19	16	14	21	19	26	43	64	716	811	476	501	0	0
2. Sub-national payments	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IV. Unit PSE	Lei/t	229	193	143	265	88	2 003	4 893	18 305	33 809	31 606	55 598	92 107	120 419	337 734
V. Percentage PSE	%	64	54	40	55	13	70	56	63	61	50	55	53	57	73
VI. Producer NAC		2.76	2.16	1.67	2.20	1.15	3.30	2.29	2.71	2.60	2.00	2.24	2.14	2.32	3.66

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.3.i. POTATOES (not included in the aggregation): Producer support estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	5 187	4 142	3 621	4 420	3 186	1 873	2 602	3 709	2 947	3 020	3 591	3 206	3 319	3 957
II. Value of production (at farm gate)	Lei mn	8 984	8 808	9 345	10 347	13 921	47 119	200 977	541 819	890 579	2 477 286	3 369 499	4 560 941	9 254 264	12 322 098
III. Producer Support Estimate (PSE)	Lei mn	1 973	2 249	3 519	3 804	6 465	29 883	137 916	397 273	265 058	840 816	2 446 820	3 246 003	5 952 943	4 298 932
A. Market price support	Lei mn	1 847	2 153	3 447	3 761	6 348	29 786	130 195	384 926	233 991	819 007	2 361 927	2 943 099	5 390 547	3 839 474
1. Based on unlimited output	Lei mn	1 847	2 153	3 447	3 761	6 348	29 786	130 195	384 926	233 991	819 007	2 361 927	2 943 099	5 390 547	3 839 474
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Payments based on output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Payments based on area planted/animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Payments based on historical entitlements	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on historical plantings/animal numbers or production	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on historical support programmes	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Payments based on input use	Lei mn	94	77	57	20	89	77	7 586	12 133	30 002	19 320	83 638	301 843	562 395	459 458
1. Based on use of variable inputs	Lei mn	14	12	9	0	12	21	7 219	11 543	29 120	14 468	76 774	294 662	553 537	445 019
2. Based on use of on-farm services	Lei mn	80	65	47	20	64	48	313	502	771	3 697	5 112	5 677	6 768	8 033
3. Based on on-farm investment	Lei mn	0	0	0	0	13	9	54	87	111	1 155	1 753	1 504	2 091	6 406
F. Payments based on input constraints	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on constraints on variable inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on constraints on fixed inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Based on constraints on a set of inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Payments based on overall farming income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on farm income level	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on established minimum income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Miscellaneous payments	Lei mn	32	20	16	23	29	20	136	214	1 065	2 488	1 254	1 061	0	0
1. National payments	Lei mn	32	20	16	23	29	20	136	214	1 065	2 488	1 254	1 061	0	0
2. Sub-national payments	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IV. Unit PSE	Lei/t	380	543	972	861	2 030	15 957	53 011	107 113	89 950	278 423	681 304	1 012 459	1 793 514	1 086 412
V. Percentage PSE	%	22	25	37	37	46	63	66	72	29	34	71	67	61	34
VI. Producer NAC		1.28	1.34	1.60	1.58	1.85	2.72	2.95	3.53	1.40	1.51	3.43	3.01	2.54	1.51

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.3.6. MILK : Producer support estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	4 199	4 201	4 402	3 742	3 813	4 061	3 862	4 066	4 680	5 039	5 063	5 009	4 849	5 174
II. Value of production (at farm gate)	Lei mn	18 150	19 044	20 884	20 009	24 059	54 266	137 645	506 641	1 644 781	2 576 631	4 278 717	8 549 209	12 855 860	19 197 099
III. Producer Support Estimate (PSE)	Lei mn	11 760	11 509	11 704	12 119	15 013	12 002	- 11 662	52 632	593 197	1 101 877	1 733 183	3 140 106	7 365 891	8 601 570
A. Market price support	Lei mn	11 419	10 820	10 947	11 599	14 330	11 711	- 12 077	51 698	578 299	1 054 457	1 668 036	3 115 711	7 337 621	8 588 681
1. Based on unlimited output	Lei mn	11 419	10 820	10 947	11 599	14 330	11 711	- 12 077	51 698	578 299	1 054 457	1 668 036	3 115 711	7 337 621	8 588 681
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Payments based on output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Payments based on area planted/animal numbers	Lei mn	222	210	195	158	183	0	0	0	7 993	39 501	49 562	15 471	20 048	630
1. Based on unlimited area or animal numbers	Lei mn	222	210	195	158	183	0	0	0	7 993	33 799	38 625	15 471	20 048	630
2. Based on limited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	5 703	10 937	0	0	0
D. Payments based on historical entitlements	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on historical plantings/animal numbers or production	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on historical support programmes	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Payments based on input use	Lei mn	62	434	515	312	397	243	327	808	5 480	5 810	14 476	7 749	8 222	12 259
1. Based on use of variable inputs	Lei mn	0	0	0	0	0	0	0	566	4 970	38	3 710	3 930	4 567	1 006
2. Based on use of on-farm services	Lei mn	62	434	515	312	351	222	291	191	316	484	761	2 153	1 709	5 292
3. Based on on-farm investment	Lei mn	0	0	0	0	47	21	35	51	194	5 287	10 005	1 666	1 946	5 961
F. Payments based on input constraints	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on constraints on variable inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on constraints on fixed inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Based on constraints on a set of inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Payments based on overall farming income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on farm income level	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on established minimum income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Miscellaneous payments	Lei mn	57	46	47	50	103	48	89	126	1 426	2 109	1 109	1 176	0	0
1. National payments	Lei mn	57	46	47	50	103	48	89	126	1 426	2 109	1 109	1 176	0	0
2. Sub-national payments	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IV. Unit PSE	Lei/t	2 801	2 740	2 659	3 239	3 937	2 955	- 3 020	12 944	126 762	218 661	342 357	626 936	1 519 054	1 662 460
V. Percentage PSE	%	64	58	54	59	61	22	- 8	10	36	42	40	37	57	45
VI. Producer NAC		2.75	2.40	2.18	2.44	2.54	1.28	0.92	1.12	1.56	1.72	1.66	1.58	2.33	1.81

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.3.7. BEEF AND VEAL: Producer support estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	191	206	191	220	317	317	250	252	258	202	177	185	168	189
II. Value of production (at farm gate)	Lei mn	9 887	10 707	10 181	11 531	17 642	33 127	148 692	299 061	618 881	751 740	912 341	2 116 000	3 461 782	3 955 693
III. Producer Support Estimate (PSE)	Lei mn	5 158	5 893	6 141	6 997	6 262	- 6 480	44 126	- 153 690	- 304 082	- 205 401	- 411 018	- 1 236 438	72 823	- 1 612 868
A. Market price support	Lei mn	4 822	5 151	5 401	6 582	5 873	- 6 608	43 838	- 154 195	- 309 395	- 217 410	- 424 400	- 1 242 013	64 406	- 1 617 544
1. Based on unlimited output	Lei mn	4 822	5 151	5 401	6 582	5 873	- 6 608	43 838	- 154 195	- 309 395	- 217 410	- 424 400	- 1 242 013	64 406	- 1 617 544
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Payments based on output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Payments based on area planted/animal numbers	Lei mn	193	172	146	117	134	0	0	0	3 007	9 680	9 612	3 307	5 395	170
1. Based on unlimited area or animal numbers	Lei mn	193	172	146	117	134	0	0	0	3 007	8 282	7 491	3 307	5 395	170
2. Based on limited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	1 397	2 121	0	0	0
D. Payments based on historical entitlements	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on historical plantings/animal numbers or production	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on historical support programmes	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Payments based on input use	Lei mn	75	516	545	257	204	107	227	437	1 830	1 585	3 438	1 969	3 022	4 506
1. Based on use of variable inputs	Lei mn	2	6	3	0	6	0	0	306	1 658	14	1 108	999	1 679	370
2. Based on use of on-farm services	Lei mn	73	510	542	257	175	98	203	103	105	171	227	547	628	1 945
3. Based on on-farm investment	Lei mn	0	0	0	0	23	9	25	28	67	1 401	2 103	423	715	2 191
F. Payments based on input constraints	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on constraints on variable inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on constraints on fixed inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Based on constraints on a set of inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Payments based on overall farming income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on farm income level	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on established minimum income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Miscellaneous payments	Lei mn	67	54	49	41	51	21	62	68	476	744	331	299	0	0
1. National payments	Lei mn	67	54	49	41	51	21	62	68	476	744	331	299	0	0
2. Sub-national payments	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IV. Unit PSE	Lei/t	27 075	28 564	32 151	31 878	19 785	- 20 440	176 859	- 609 879	- 1 178 612	- 1 017 943	- 2 316 702	- 6 679 692	432 438	- 8 533 694
V. Percentage PSE	%	50	51	56	59	35	- 19	30	- 51	- 49	- 27	- 44	- 58	2	- 41
VI. Producer NAC		2.02	2.06	2.28	2.41	1.53	0.84	1.42	0.66	0.67	0.79	0.69	0.63	1.02	0.71

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.3.8. PIGMEAT : Producer support estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	851	872	818	798	788	834	789	761	775	673	631	667	643	579
II. Value of production (at farm gate)	Lei mn	23 124	23 695	22 669	22 506	34 320	78 924	334 752	794 869	1 696 179	2 342 740	3 284 717	7 016 261	10 443 287	8 198 231
III. Producer Support Estimate (PSE)	Lei mn	9 800	12 245	12 806	8 383	11 007	- 2 958	- 7 071	58 581	456 431	548 960	452 740	- 2 805 499	1 332 471	- 1 338 491
A. Market price support	Lei mn	9 454	10 764	11 505	7 786	10 186	- 3 892	- 16 765	9 780	97 488	206 289	- 163 670	- 2 875 416	1 260 475	- 1 440 495
1. Based on unlimited output	Lei mn	9 454	10 764	11 505	7 786	10 186	- 3 892	- 16 765	9 780	97 488	206 289	- 163 670	- 2 875 416	1 260 475	- 1 440 495
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Payments based on output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Payments based on area planted/animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Payments based on historical entitlements	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on historical plantings/animal numbers or production	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on historical support programmes	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Payments based on input use	Lei mn	180	1 340	1 193	514	651	779	9 295	47 971	353 170	331 308	610 768	63 939	71 997	102 004
1. Based on use of variable inputs	Lei mn	0	0	0	0	0	0	6 332	33 007	252 042	213 617	437 928	44 524	49 164	31 689
2. Based on use of on-farm services	Lei mn	180	1 340	1 193	514	575	712	1 313	1 257	1 280	2 610	3 869	10 945	10 676	33 069
3. Based on on-farm investment	Lei mn	0	0	0	0	76	67	1 650	13 707	99 848	115 081	168 971	8 470	12 157	37 246
F. Payments based on input constraints	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on constraints on variable inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on constraints on fixed inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Based on constraints on a set of inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Payments based on overall farming income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on farm income level	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on established minimum income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Miscellaneous payments	Lei mn	166	141	108	83	169	155	399	830	5 774	11 362	5 641	5 978	0	0
1. National payments	Lei mn	166	141	108	83	169	155	399	830	5 774	11 362	5 641	5 978	0	0
2. Sub-national payments	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IV. Unit PSE	Lei/t	11 516	14 042	15 655	10 505	13 971	- 3 547	- 8 965	76 949	588 715	815 671	717 899	- 4 208 038	2 070 984	- 2 311 730
V. Percentage PSE	%	42	49	53	36	31	- 4	- 2	7	22	20	12	- 40	13	- 16
VI. Producer NAC		1.72	1.95	2.15	1.57	1.46	0.96	0.98	1.07	1.29	1.26	1.13	0.72	1.15	0.86

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.3.9. POULTRY : Producer support estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	462	463	428	339	386	332	295	301	260	286	293	254	254	266
II. Value of production (at farm gate)	Lei mn	12 290	12 308	11 547	9 324	14 954	36 825	144 294	290 279	626 577	838 321	1 348 134	2 935 597	4 293 512	7 012 831
III. Producer Support Estimate (PSE)	Lei mn	3 264	4 569	5 381	3 608	4 525	5 523	39 808	-24 659	259 240	349 230	453 877	674 823	1 776 039	2 984 602
A. Market price support	Lei mn	3 107	3 973	4 871	3 353	4 262	5 175	35 862	-41 264	122 806	226 790	216 306	651 935	1 751 252	2 948 385
1. Based on unlimited output	Lei mn	3 107	3 973	4 871	3 353	4 262	5 175	35 862	-41 264	122 806	226 790	216 306	651 935	1 751 252	2 948 385
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Payments based on output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Payments based on area planted/animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Payments based on historical entitlements	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on historical plantings/animal numbers or production	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on historical support programmes	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Payments based on input use	Lei mn	82	539	468	220	209	291	3 790	16 329	134 275	118 306	235 109	20 321	24 787	36 217
1. Based on use of variable inputs	Lei mn	0	0	0	0	0	0	2 602	11 235	95 810	77 040	169 860	11 982	15 040	6 202
2. Based on use of on-farm services	Lei mn	82	539	468	220	184	266	513	418	479	949	1 688	4 700	4 557	14 116
3. Based on on-farm investment	Lei mn	0	0	0	0	24	25	675	4 676	37 986	40 317	63 562	3 638	5 189	15 899
F. Payments based on input constraints	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on constraints on variable inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on constraints on fixed inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Based on constraints on a set of inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Payments based on overall farming income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on farm income level	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on established minimum income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Miscellaneous payments	Lei mn	76	57	42	35	54	58	156	276	2 160	4 134	2 461	2 567	0	0
1. National payments	Lei mn	76	57	42	35	54	58	156	276	2 160	4 134	2 461	2 567	0	0
2. Sub-national payments	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IV. Unit PSE	Lei/t	7 066	9 874	12 580	10 650	11 710	16 647	134 760	-81 977	997 079	1 220 615	1 551 408	2 654 141	7 000 546	11 220 309
V. Percentage PSE	%	26	35	45	38	30	15	27	-8	34	36	29	23	41	42
VI. Producer NAC		1.36	1.55	1.81	1.60	1.42	1.17	1.37	0.93	1.51	1.57	1.40	1.30	1.70	1.73

p: provisional ; e: estimate.

Source: OECD.

Annex Table II.3.10. EGGS: Producer support estimate

	Units	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998p	1999e
I. Level of production	000t	398	372	411	358	411	365	313	288	276	278	301	270	273	270
II. Value of production (at farm gate)	Lei mn	12 701	12 094	13 877	12 340	12 982	30 739	89 714	249 857	615 061	813 243	1 447 799	2 971 755	3 903 436	4 042 022
III. Producer Support Estimate (PSE)	Lei mn	7 221	6 041	8 794	8 174	3 934	1 811	6 606	- 7 189	178 386	394 494	469 051	1 164 723	2 054 420	1 230 137
A. Market price support	Lei mn	7 185	5 784	8 527	8 018	3 725	1 413	5 904	- 8 882	169 077	389 588	457 064	1 149 919	2 042 106	1 211 776
1. Based on unlimited output	Lei mn	7 185	5 784	8 527	8 018	3 725	1 413	5 904	- 8 882	169 077	389 588	457 064	1 149 919	2 042 106	1 211 776
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Payments based on output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited output	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Payments based on area planted/animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on unlimited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on limited area or animal numbers	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Payments based on historical entitlements	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on historical plantings/animal numbers or production	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on historical support programmes	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Payments based on input use	Lei mn	2	229	242	127	150	332	552	1 465	7 375	2 040	10 122	12 854	12 314	18 361
1. Based on use of variable inputs	Lei mn	0	0	0	0	0	0	0	1 026	6 744	52	6 238	6 519	6 841	1 506
2. Based on use of on-farm services	Lei mn	2	229	242	127	123	303	492	346	429	658	1 279	3 571	2 559	7 927
3. Based on on-farm investment	Lei mn	0	0	0	0	27	28	60	93	202	1 330	2 605	2 763	2 914	8 928
F. Payments based on input constraints	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on constraints on variable inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on constraints on fixed inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Based on constraints on a set of inputs	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Payments based on overall farming income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1. Based on farm income level	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Based on established minimum income	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Miscellaneous payments	Lei mn	35	28	26	28	59	66	150	228	1 935	2 865	1 865	1 950	0	0
1. National payments	Lei mn	35	28	26	28	59	66	150	228	1 935	2 865	1 865	1 950	0	0
2. Sub-national payments	Lei mn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IV. Unit PSE	Lei/t	18 133	16 245	21 386	22 806	9 573	4 963	21 078	- 24 960	645 626	1 417 309	1 557 637	4 309 000	7 514 338	4 557 752
V. Percentage PSE	%	57	49	62	65	30	6	7	- 3	29	48	32	39	52	30
VI. Producer NAC		2.31	1.96	2.64	2.89	1.42	1.06	1.08	0.97	1.40	1.93	1.47	1.64	2.10	1.43

p: provisional ; e: estimate.

Source: OECD.

BIBLIOGRAPHY

- Agra Europe,
Agra Food: East Europe, various editions.
- Bara, S. (1997),
Perspectives on Romanian Agriculture Financing, Romanian Academy, National Institute of Economic Research, Bucharest.
- Chirca, C. and E.D. Tesliuc (co-ordinators) (1999),
From Rural Poverty to Rural Development, World Bank, National Commission for Statistics, Bucharest.
- Davidova, S., D. Giurca, M. Rusali and L. Hubbard (1999),
"WTO Commitments and CAP Adoption in CEEC: The Case of Romania", Paper presented at the EAAE Congress, Warsaw 1999.
- Duponcel, M. (1998),
Impacts on the Europe Agreement on Romanian Agriculture, EU PHARE Project, Edinburgh.
- EC (1998a),
"Agricultural Situation and Prospects in the Central and Eastern European Countries: Romania", Working Document, European Commission (DG-VI), Brussels.
- EC (1998b),
"The Impact of Agricultural Policy Instruments on Romanian Farms", EC-PHARE Project RO 9505-04-01, Bucharest.
- EC (1998c),
"Strategic Analysis of the Agricultural Knowledge and Information System Report of the Task Force", Presented at the AKIS National Conference – Round Table, Poiana Brasov, June 9-11, 1998.
- EC (1999),
1999 Regular Report from the Commission on Romania's Progress Towards Accession, Brussels, October.
- EIU (1999),
Economies in Transition, Eastern Europe and the Former Soviet Union. Regional Overview, The Economic Intelligence Unit, 3rd quarter, 1999.
- EIU,
Country Report: Romania, The Economic Intelligence Unit, various editions.
- Esanu, C. and K. Lindert (1997),
An Analysis of Consumer Food Price and Subsidy Policies in Romania, World Bank ASAL Unit, Bucharest.
- European Council (2000),
Presidency Conclusions, Helsinki European Council, 10 and 11 December 1999, 13 January.
- Florian, V., M. Rusu, A. Sarbu and L. Toma (1998),
Rural Space Diagnosis – Economic, Social and Ecological Criteria, Volumes I and II, Research Report – PHARE Programme on Rural Development, IEA, Bucharest.
- Gavrilescu, D. (1994),
"Agrarian Reform in Romania: Between Market Priority and the Strategies for Food Security", J.F.M. Swinnen (ed.), *Policy and Institutional Reform in Central and Eastern Europe*, Avebury, Aldershot.
- Gavrilescu, D., C. Serbanescu, V. Florian, M. Costea and C. Alexandri (1996),
Agricultural Demand, Supply and Prices During 1990-1995, Romanian Academy, National Institute for Economic Research, Agricultural Economics Institute, Bucharest.
- Gavrilescu, D. and A.H. Sarris (1997),
"Restructuration of Farms and Agricultural System in Romania", in: D. Gavrilescu (co-ordinator), *Agriculture Restructuring and Rural Transition in Romania*, Bucharest.
- Gavrilescu, D., D. Abraham, V. Florian, M. Rusu and T. Iozu (1998),
"Family Farm Restructuring in Romania: Causes, Efficiency and Policy Implication", Report of the ACE Research Project Phare-ACE P96-6090-R, Farm Restructuring in Central and Eastern Europe: Causes, Efficiency and Policy Implications, Bucharest.

- Giurca, D. and M. Rusali (1998),
WTO Commitments of Romania: Problems upon Accession, EU PHARE Project, Wye College – London, Romanian Ministry of Agriculture and Food.
- Gorton M., C. Esanu, D. Deaconescu, A. Buckwell and S. Davidova (1998),
 “Impediments to Efficiency in the Agro-Food Chain: Romania”, Report presented to OECD, Wye College.
- Government of Romania (1999a),
 Report on the Progress in Preparing for Accession to the European Union since the Previous Report (August 1998) to Date (June 1999).
- Government of Romania (1999b),
 “The National Plan for Agriculture and Rural Development”, Draft.
- IMF,
International Financial Statistics, various editions.
- Ionescu, A., I. Jinga and Gh. Stefanic (1985),
Organic Fertilisers Use, Ceres Publishing House, Bucharest.
- Ionita, G. (1996),
Report on the Agricultural Associations in Romania, World Bank, ASAL, Romania.
- Lazar, T. (1999),
Price scissors in 1990-1998, Institute for Agricultural Economics and Academy of Agricultural and Forestry Sciences.
- Lazaroiu, S., L. Luca and E.D. Tesliuc (1998),
Assessing the Impact of the 1997 Voucher Scheme, Bucharest.
- Leonte, J. and E. Diacenco (1997),
 “Co-operative Transformation in Romania”, in *Transformation Strategies with Particular Reference to Capital Formation in Agricultural Co-operatives in Central and Eastern Europe*, FAO, Rome.
- MoAF (1997),
Private Agriculture in Romania: Farm Survey, Ministry of Agriculture and Food, European Commission, World Bank, Bucharest.
- MoAF (1998),
 “Changes in the Romanian Agricultural and Food Sector”, 1997 *Annual Report*, Bucharest.
- MoAF,
News Bulletin, various editions.
- MoAF (2000),
 “The National Consulting Agency for Agriculture”, *Yearbook 2000*, Bucharest.
- MoAF and European Union PHARE Programme (1998),
Rural Development in Romania: Green Paper, Bucharest.
- Ministry of Water, Forest and Environmental Protection (1995),
 “National Environmental Action Programme”, Report, Bucharest.
- Motoc, M. (1975),
Soil Erosion and Abatement Methods, Ceres Publishing House, Bucharest.
- National Commission for Statistics (1998),
The Environment in Romania, National Commission for Statistics Publishing House, Bucharest.
- National Commission for Statistics (1999a),
Household Survey, 1998, National Commission for Statistics Publishing House, Bucharest.
- National Commission for Statistics (1999b),
Household Labour Force Survey (Amigo), National Commission for Statistics Publishing House, Bucharest.
- National Commission for Statistics (1999c),
Aspecte Privind Evolutia Agriculturii in Romania, 1989-1998, National Commission for Statistics Publishing House, Bucharest.
- National Commission for Statistics,
Statistical Yearbooks, National Commission for Statistics Publishing House, Bucharest, various editions.
- NBR (1999),
Report Annual 1998, Banca Nationala a Romaniei, Bucharest.
- OECD (1993),
Romania: An Economic Assessment, Paris.
- OECD (1995),
Sustainable Agriculture: Concepts, Issues and Policies in OECD Countries, Paris.

- OECD (1998a),
OECD *Economic Surveys: Romania*, Paris.
- OECD (1998b),
Review of Agricultural Policies: Russian Federation, Paris.
- OECD (1998c),
"Impediments to Efficiency in the Agro-Food Chain in Bulgaria, Romania and Slovenia", *Agricultural Policy Papers* No. 1998-02, Paris.
- OECD (1999a),
Agricultural Policies in Emerging and Transition Economies, Paris.
- OECD (1999b),
Environment in the Transition to a Market Economy: Progress in Central and Eastern Europe and the New Independent States, Paris.
- OECD (1999c),
Environmental Indicators for Agriculture, Volume 1: Concepts and Framework, Paris.
- OECD (1999d),
Environmental Indicators for Agriculture, Volume 2: Issues and Design "The York Workshop", Paris.
- OECD (1999e),
Post-Uruguay Round Tariff Regimes. Achievements and Outlook, Paris.
- OECD (2000a),
Environmental Indicators for Agriculture, Volume 3: Methods and Results, Paris.
- OECD (2000b),
A Matrix Approach to Evaluating Policy: Preliminary Findings from PEM Pilot Studies of Crop Policy in the EU, the US, Canada and Mexico, Paris.
- OECD (2000c),
Review of National Policies for Education: Romania, forthcoming, Paris.
- Oprescu, G. (1996),
"Privatisation in Agriculture", World Bank ASAL, Romania, Working Paper No. 3, July 24, Bucharest.
- Petrovici, D.A., Ch. Ritson (2000),
"Food consumption patterns in Romania", in *British Food Journal*, Vol. 102, issue 5.
- PlanEcon Report*,
"Romanian Economic Monitor", various editions.
- Porumbescu, M. (1999),
"Irrigation Systems and Environment in Romania", unpublished dissertation.
- Puia, I. and J. Tambozi (1993),
Istoria Economiei Nationale, Editura Fundatiei Andrei Saguna, Constanta, 1993.
- Quinn, J.F.D. (1996),
"Reforming Romanian State Farms", mimeo, December.
- Rizov, M., D. Gavrilesu, H. Gow, E. Mathijs and J.F.M. Swinnen (1999),
"Transition and Enterprise Restructuring: The Development of Individual Farming in Romania", EU Phare and The World Bank/ECSSD/DECRG Working Paper Series, Micro Economic Analysis of Rural Households and Enterprises in Transition Countries, No. 3.
- Rizov, M. and J.F.M. Swinnen (2000),
"Individual Farming in Romania" in S. Davidova, G.E. Dalton and K.J. Thomson (eds.), *Romanian Agriculture and Transition Towards the EU*, forthcoming.
- Rojanschi, V., F. Bran and G. Diaconu (1997),
Environmental Protection and Engineering, Economica Publishing House, Bucharest.
- Romanian Economic Daily*,
various editions.
- Romanian Government (1999),
Department for European Integration, "The National Programme for the Adoption of the Acquis Communautaire", Report, Bucharest.
- Serbanescu, C. (1999),
"Agricultural Finance and Institutional Reforms in Romania", in: *Agricultural Finance and Credit Infrastructure in Transition Economies*, Proceedings of OECD Expert Meeting, Moscow, February 1999.
- Soufflay, C. (1996),
Stabilisation of the Market of 14 Key Products: Sheep Meat, Romanian Ministry of Agriculture and Food in Cupertino with the Policy Advisory Unit of the PHARE Programme.

- Standard & Poor's
Sovereign Ratings Service, Romania (Republic of), August, 1999.
- Tesliuc, E.D. (1996a),
Agricultural Finance. An Assessment of the Costs and Implicit Transfers Associated with the Current System of Agricultural Finance, World Bank ASAL Unit, Bucharest.
- Tesliuc, E.D. (1996b),
 "Agricultural Trade Regime in Romania", Working Paper No. 1, World Bank Resident Mission in Romania, Bucharest.
- Toma, L. (1999),
 Country Report on the Present Environmental Situation in Agriculture – Romania, REU Technical Series 61 "Central and Eastern Sustainable Agriculture Network", First Workshop Proceedings, pp. 217-244, FAO, Rome.
- UNEP (1999),
Environmental Impacts of Trade Liberalisation and Policies for the Sustainable Management of Natural Resources. A Case Study on Romania's Water Sector.
- USDA (1998),
 "Agriculture in the WTO", Situation and Outlook Series, Economic Research Service, Washington, DC.
- USDA (1999),
Romania: Livestock and Poultry, Meat and Poultry Meat Update 1999, Gain Report #RO9027, Foreign Agricultural Service, Global Agriculture Information Network.
- Vogel, R. and D. Adams (1996),
 "Rural Finance in Romania", Unpublished paper, ASAL, Washington, DC.
- Wei, A., C. Ciupagea and V. Campeanu (1999),
 "Peasant Markets in Romania", Determinants of Farm-Retail Price Margins and Agri-Food Market Functioning in Transition Economies (Phase 2), A. Valdes (editor), World Bank.
- World Bank (1991),
Romania: The Challenge of Transition, Washington, DC.
- World Bank (1994),
Romania: A Strategy for the Transition in Agriculture, March 4, Joint Romanian-International Agricultural Strategy Team: The World Bank in Cupertino with EC-PHARE, EBRD, USAID, and the French and German Governments.
- World Bank (1998),
NGO Stock-Taking in Romania, Bucharest.
- WTO (1999),
 "Trade Policy Review Body", Press Release, 7 October 1999.

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