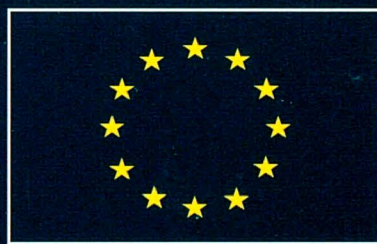


# EUROPEAN ECONOMY

EUROPEAN COMMISSION  
DIRECTORATE-GENERAL FOR ECONOMIC AND FINANCIAL AFFAIRS



REPORTS AND STUDIES

**THE CAP AND ENLARGEMENT**  
**Economic effects of the compensatory payments**



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**European Commission**

# **EUROPEAN ECONOMY**

**Directorate-General for Economic and Financial Affairs**

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# **The CAP and enlargement**

## **Economic effects of the compensatory payments**

## Abbreviations and symbols used

### *Member States*

B	Belgium
DK	Denmark
D	Germany
WD	West Germany
GR	Greece
E	Spain
F	France
IRL	Ireland
I	Italy
L	Luxembourg
NL	The Netherlands
AT	Austria
P	Portugal
FI	Finland
SE	Sweden
UK	United Kingdom
EUR 9	European Community excluding Greece, Spain and Portugal
EUR 10	European Community excluding Spain and Portugal
EUR 12-	European Community, 12 Member States including West Germany
EUR 12+	European Community, 12 Member States including Germany
EUR 15	European Community, 15 Member States
EUR 15-	European Community, 15 Member States including West Germany

### *Currencies*

ECU	European currency unit
BFR	Belgian franc
DKR	Danish crown (krone)
DM	German mark (Deutschmark)
DR	Greek drachma
ESC	Portuguese escudo
FF	French franc
FMK	Finnish markka
HFL	Dutch guilder
IRL	Irish pound (punt)
Kcs	Czech koruna
LFR	Luxembourg franc
LIT	Italian lira
ÖS	Austrian schilling
PTA	Spanish peseta
SKR	Swedish crown (krona)
UKL	Pound sterling
USD	US dollar
SFR	Swiss franc
YEN	Japanese yen
CAD	Canadian dollar
R	Russian rouble
ROL	Romanian leu
SKK	Slovak crown
Zl	Polish zloty

### *Other abbreviations*

ACP	African, Caribbean and Pacific countries having signed the Lomé Convention
ECSC	European Coal and Steel Community
EDF	European Development Fund
EIB	European Investment Bank
EMCF	European Monetary Cooperation Fund
EMS	European Monetary System
ERDF	European Regional Development Fund
Euratom	European Atomic Energy Community
Eurostat	Statistical Office of the European Communities
GDP (GNP)	Gross domestic (national) product
GFCF	Gross fixed capital formation
LDCs	Less-developed countries
Mio	Million
Mrd	1 000 million
NCI	New Community Instrument
OCTs	Overseas countries and territories
OECD	Organization for Economic Cooperation and Development
OPEC	Organization of Petroleum Exporting Countries
PPS	Purchasing power standard
SMEs	Small and medium-sized enterprises
toe	Tonne of oil equivalent
:	Not available





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## Foreword

One of the questions raised by an eastwards enlargement of the European Union is how to extend the common agricultural policy. In the Central and East European Countries (CEECs), the importance of agriculture and the high proportion of income spent on food, suggest that subsidies and price support will have significant impact on both the sectoral — and the national — economies.

This report deals, in particular, with some likely economic consequences of applying the compensatory payments in the CEECs. The theoretical analysis was carried out within DG II, and complemented by case studies undertaken by external consultants. The report is published in order to contribute to the debate on a strategy for enlargement, but does not necessarily reflect the opinion of the Commission.

Heinrich Matthes  
*Chairman of the board of editors*  
European Economy

## Introduction

The present paper deals with agricultural policy in relation to enlargement. It focuses on the compensatory payments that cereal and livestock farmers became entitled to following the decrease in institutional prices in the 1992 reform of the common agricultural policy (CAP). Some effects of granting such payments to the CEECs are investigated from a theoretical point of view and on the basis of case studies. Based on the findings, the social and economic motivation for extending compensatory payments to the CEECs is discussed.

One or more of the associated countries in Central and Eastern Europe (CEECs) may become members of the European Union within 5 to 15 years. Although the basic principle of enlargement is that new Member States should accept and adopt the entire *acquis communautaire*, experience from former rounds of enlargement has shown that the *acquis* in itself is affected by enlargement and that long transition periods have been necessary due to profound economic and institutional changes in the country concerned. For instance, to take account of the rural settlement policy of certain new Member States, the latest enlargement gave birth to a new objective for the Structural Funds. A long transition period for agricultural trade and price policies was used for the enlargement with Spain and Portugal.

The questions related to eastward enlargement cannot be viewed as entirely separate from the institutional discussion that will be a main topic of the Intergovernmental Conference in 1996. One underlying issue is that the need for differentiation of certain policies may increase in the future. There are, in principle, two reasons for this. The first is that the range of political objectives will increase as more countries join. The second reason is that the Union will become still more heterogeneous. To apply common policies in unequal circumstances (economic, structural, social, etc.) may well produce different — not common — results. Differentiation

may therefore be a way to pursue a common goal in a wider Union.

Differentiating policies is, however, not new in the Union's agricultural policy. The CAP is already subject to a certain degree of differentiation. Policy measures vary according to whether a farm is in the mountains or in the plains, in a high or low yield area, is large or small, is extensive or intensive, etc. Furthermore the so-called accompanying measures are elaborated and implemented on a local level with a high degree of differentiation with respect to the conditions for assistance. Thus to adapt and differentiate the CAP to meet the challenges set up by a forthcoming enlargement would not be a radical departure from current policy principles.

As already stated, the present paper focuses on the implications of extending the compensatory payments to the CEECs. If the *acquis communautaire* principle is applied to agricultural policy and if the CAP does not undergo major changes, then farmers in new Member States would become entitled to the direct compensatory payments introduced by the 1992 CAP reform.

The content of this paper is as follows.

In section 1 the main policy elements in the CAP are discussed, with a focus on their economic and political relevance for enlargement.

Section 2 addresses the economic implications of extending the compensatory payments. The analysis is based on economic theory, although factors especially relevant to the CEECs are stressed.

Section 3 presents first a model analysis of the macroeconomic implications of payments in Poland. Then it reports on a case study of land and ownership structures in Poland and the Czech Republic and on some possible implications of the payments for income distribution, wealth, and land prices.

Finally, the conclusions are presented in section 4.

## 1. Agricultural policy principles and the compensatory payments

### 1.1. Key features of the CAP

Numerous revisions have contributed to make the CAP very complex. Reforms have been a response to budgetary crisis, changing objectives and concern for international trade. This has led to an increasing reliance on direct payments while price support is lower. However, three principles have continuously been stressed as central to the policy: unity of markets, Community preference, and financial solidarity. Unity of markets is pursued by removing trade barriers between Member States, harmonizing legislation and operating common intervention systems. Community preference is achieved principally by trade protection at external borders, and financial solidarity through the Community's participation in the costs of agricultural policy measures.

To safeguard these principles and to pursue the agricultural policy objectives do not necessarily require all the measures currently used. To show this, it is useful to group measures according to how they intervene in markets. Due to the complexity of the common market organizations (CMO) such a grouping can only be approximate. A CMO is a balance between several policy measures. Five main groups are distinguished here and commented on from the perspective of EU enlargement.

#### (i) Price support

Nearly all CMOs include an element of market price guarantee and use institutional prices to guide application of market support measures. How support schemes are designed depends to a large extent on the nature of the product (storable, non-storable, or transformable) and the nature of its market. Important intervention products are cereals, milk, beef, wine and olive oil.

Price support measures have implications for the entire market — only border measures can limit their geographical coverage. If price support were to apply to only part of the enlarged Union or at a different level in new Member States, it would be necessary to restrict movements of agricultural products. If, at the same time, industrial products could move around freely, it would not only pose considerable administrative difficulties to exclude agricultural products, it might also substantially reduce the economic benefits of enlargement.

#### (ii) Market support payments

Direct payments are used to support markets in various ways and are related to (i) by their importance for providing price

support. They include subsidies to consumption, payments for temporary storage (privately operated intervention), premiums for cessation of production (wine, fruit), payments for withdrawal or non-harvest of produce, payments to stimulate processing or to change production varieties, slaughter premiums for young calves, etc. These payments should not be confused with direct income payments as the support they provide is mainly distributed through the markets or for undertaking market regulating measures.

#### (iii) Compensatory payments

Compensatory payments were created by the 1992 reform of the CAP. Contrary to market payments, they constitute an income transfer, not linked to output, although they are linked to the use of certain production factors. Arable payments are provided on a per hectare basis to arable farming and as a per head premium (suckler cows, male bovine animals, sheep, goats) to livestock farmers.<sup>1</sup> Compensatory payments transfer income directly to producers, but in return producers have to enrol in a set-aside scheme. For arable farming, these payments are based on the expected income effect of the reform's price reduction. The payments also help to preserve a certain incentive balance between arable and livestock farming. Environmental concerns are also addressed with livestock payments; to receive maximum payments stocking rates must not exceed a certain level. The payments are not production-neutral, due to the link between factor use and payments. Even though these links can be analysed, their effects on agricultural markets can be difficult to quantify. The size of the compensatory payments is determined by a hypothetical loss. This is reflected in how payments are differentiated. Farmers in low-yield regions are presumed to lose less from the decrease in intervention price and thus receive less compensation. This observation is important when considering the arguments for extending the compensatory payments to the CEECs.

#### (iv) Supply control

An inherent feature of many CMOs is supply control. This is needed to implement the price support objectives. Curbing supply can involve production quotas (milk) or restrictions on factor use (set-aside, extensification) or grubbing up perennial crops (wine, fruit). Short-term control can be achieved by withdrawal of surplus produce. The relation between supply control and the payments mentioned in (ii) and (iii) is strong. Payments in (ii) can provide the financial incentive to comply with supply control measures while those under (iii), have a more indirect economic relation to supply through the environmental conditions imposed.

<sup>1</sup> Livestock premiums also existed before the 1992 reform, but were adjusted in the reform package.

An inconvenient feature of supply control in relation to the CEECs is that it involves a good deal of administration and verification. If restrictions on factor use are imposed it is necessary to verify whether they are respected. Restrictions on output require control over movements of produce and some centralization of processing facilities. In the CEECs it would be necessary to establish new administrative procedures to ensure that support measures are not undermined by fraud. Fraud is already a persistent problem in the EU and incentives to illegal practice may be even larger in the CEECs, as the level of payments would be very significant compared with the general level of income. As long as even vital institutions in the CEECs are malfunctioning one may question the wisdom of burdening them with the complex administration necessary to run the present CAP.

#### (v) Environment

The accompanying measures of the 1992 reform enlarged the scope of already existing community initiatives. Apart from agri-environmental measures, programmes for afforestation and early retirement were strengthened. New options for environmental action reflect the increased awareness of agriculture's importance for the natural environment. They also signify a step towards a more targeted form of agricultural policy and they comply with the principle of subsidiarity. The task of elaborating and implementing the schemes is delegated to Member States though the European Commission has to approve them.

### 1.2. Discussion and conclusion

With reference to the groups defined above, the price support objective in (i) can be characterized as the driving force for the market measures in groups (ii) and (iv). A high level of price support will increase the need for supply control and other

forms of market regulation. A common level of prices is used to safeguard market unity, though it does not necessarily imply a specific level of price support. Community preference implies border measures and as such it is also an instrument of price support. Following the Uruguay Round Agreements, import protection changed from variable levies to fixed tariffs. This creates a stronger link between world market prices and EU market prices. However, the experience from the single market shows that it may be possible to achieve market unity and Community preference without price guarantees. Yet, if guaranteed price levels are maintained, they would have to apply to the whole of the Union's territory to avoid conflicts with single market rights. Intensity of the current measures could thus well be lower than today without compromising these principles.

For arable farmers, payments are linked directly to the decrease in institutional prices. They are thus justified by an explicit reference to a historic and institutional situation, although the expected price decrease has remained hypothetical due to firmer prices on the world market. Their most important long-term effect may be to support land prices. They do not in themselves play a role for Community preference or market unity, except that they help Community farmers to meet adjustment costs in a transition period. In Chapter 2 of this paper the economic features of the payments will be discussed in further detail.

Environmental payments, afforestation and structural measures in agriculture are all targeted actions. Responsibility for the measures is delegated to a lower administrative level than the European Commission. They are, as a consequence, easier to differentiate according to local needs, ambitions and implementation constraints. The Commission's role is to monitor the economic effects of Member States' schemes and to ensure their compatibility with common objectives.

## 2. Economic effects of the compensatory payments — a theoretical approach with special focus on the CEECs

### 2.1. Introduction

Payments based on the possession and cultivation of agricultural land will *ceteris paribus* increase land prices due to the supplementary rent that landowners receive. Higher land prices would have implications for the rate of structural adjustment and the market for credit. The influence on the distribution of income and wealth will obviously have social implications and the increased buying power of the beneficiaries may influence the economy as a whole. Some of these effects will be discussed in more detail below.

Another important question is how payments would affect production of various crops. The financial support in question is not linked to quantity produced, but is conditional upon the quantity of factors possessed and on their use. A reward for specific production types will affect relative profitability of different crops considerably. This could be particularly distortive in future Member States, since the payments, as well as the CAP's price hierarchy, reflect production and demand characteristics that are unlike those in the CEECs. A profound quantitative analysis of these questions would require much more insight into production and market conditions than is currently available. Therefore, only some tentative evaluations of this question can be provided.

### 2.2. Resource use in agriculture and financial support: some basic observations

It is widely recognized that financial support, as well as protectionist trade policies, have an influence on output production and factor use. The effects depend on the design and intensity of the policy measures. As a general rule, support measures have the strongest influence on the market for the input or output — to which the support payment is linked. In agriculture, it is common to distinguish between indirect (market price) support and direct support. Indirect transfer policies operate by supporting agricultural market prices or, less often, by subsidizing input prices. They tend to increase production volumes and input use. Direct transfer policies involve a transfer of funds directly from the public budget to the farmer. Contrary to market price support, they can be targeted towards specific groups and conditions can more easily be attached to them. Payments are seldom linked to production volumes, but to factors of production considered as fixed. To avoid stimulating marginal production volumes and to contain budgetary expenditure there is sometimes a payment ceiling per beneficiary.

The CAP's compensatory payments to cereal farmers are linked to the area devoted to particular crops and are conditional on set-aside. Other payments are based on the number of certain animals and on stocking rates. However, neither type of compensation is decoupled; the first provides an additional rent for using land to produce the subsidized crop, while the second makes it more attractive to increase animal stock or the area devoted to fodder crops. Both kinds of payments are thus coupled to specific agricultural uses of land. They will increase land rent and thereby, *ceteris paribus*, increase the market price of land. This will not only be the case in Eastern Europe but also happens in the EU. However, in the EU, compensatory payments replace market price support, thus helping to stabilize land prices at a high level. The direct effect of capitalization could, as a consequence, be more difficult to observe, though it certainly exists.

### 2.3. Compensatory payments and economic effects — theoretical evidence

Compensatory payments affect agriculture and the general economy in a number of ways. They may:

- (i) increase farmers' (landowners') income and wealth;
- (ii) change the incentive structure in agricultural production;
- (iii) change conditions for structural adjustment;
- (iv) increase the value of land as collateral for credit and the demand for credit;
- (v) decrease the labour supply of agricultural households;
- (vi) influence the competitive position;
- (vii) introduce 'political' uncertainty about future income levels;
- (viii) increase beneficiaries' demand for services and goods; and
- (ix) affect economic conditions for other sectors and macroeconomic equilibria.

These points are explored below.

#### (i) Land owners' income and wealth

According to Simons (1938)<sup>1</sup> 'personal income may be defined as the sum of (1) the market values of rights exercised in

<sup>1</sup> *Personal income taxation*, Chicago, University of Chicago Press, 1938.

consumption and (2) the change in the store of property rights between the beginning and end of the period'. A farmer who owns his land and becomes entitled to compensatory payments will directly improve current consumption possibilities and to the extent that land prices increase, his store of property rights goes up. The regulations on compensatory payments do not impose any particular restrictions on how the subsidy should be spent so landowners are free to choose to increase current consumption, invest in non-agricultural activities, invest in land improvements or increase savings. Especially in the case of non-farming landowners, the payments may thus not benefit the rural economy. If, to become eligible for the payments, it is necessary to comply with binding restrictions this may reduce the profits from farming. The increase in personal income is thus not necessarily proportional to the payments.

In some CEECs an important share of the land has been restored to non-farmers. This ownership structure could make it more difficult to find a political justification for the direct transfers. Even if the subsidy is paid to the person actually farming the land, the owner may indirectly become the real beneficiary, as the improved profits from the land allow increases of the rent charged. In the end, the payments may thus be of little benefit to the persons working on the land. This situation could lead to questioning the rationale of an agricultural policy that transfers wealth to a substantial number of non-farming landowners who benefited from restored land during the economic transition.

## **(ii) Incentive structure**

The compensatory payments, as well as other CAP incentives, are conditional on certain types of production. Their relative importance aims to balance production incentives and demand structures in the present Union. However, this incentive structure is unlikely to match a market-efficient allocation of production resources in the CEECs. It is, in fact, difficult to have a clear vision of what an efficient structure is in the CEECs as long as the economies are in a transitory phase where demand and production patterns are changing rapidly. To introduce a — quite arbitrary — incentive structure that matches demand and production conditions in the actual (and historical) EU will almost certainly hamper market-efficient adjustment in the CEECs. The problem can be aggravated by the conditions attached to the compensatory payments. Set-aside or extensification would tend to decrease the efficiency of production structures and reduce the profit from farming activities. This type of loss is a function of the entire structure of input and output prices and would tend to be endogenous. A major switch from, for example, growing non-subsidized potatoes to growing subsidized wheat may, for instance, raise prices for inputs specific to wheat production at the same time as wheat prices decline due to higher supply.

## **(iii) Structural development**

Studies on the situation in the CEECs have identified an inadequate farm structure as one impediment to the prosperity and development of the sector. While variations are big between countries, the farm structure is, at present, relatively polarized with predominance of very large — and very small — holdings and few intermediate types. Neither of the predominant types seems to be the most efficient in economic terms or, in the long term, viable as an independent economic unit. High land prices and compensatory payments could affect structural adjustment in various ways.

Structural development could be stimulated by the compensatory payments if the general increase in land prices incites land holders to sell land and invest the money or themselves in other and more profitable industries. More land would then become available for restructuring, and while some farmers leave the sector, others may get better opportunities to develop.

However, high asset prices are normally seen as an impediment to structural development in agriculture. Empirical evidence indicates that the number of farm sales decreases when prices are high. If the price increase is accompanied by higher price volatility it may further decrease turnover of the trade in farm land.

Imperfections in the capital markets can accentuate negative effects on structural development. Potential farmers need to accumulate more funds to purchase land — thus the costs of entry to farming increase. This applies not only to would-be farmers, but also makes it more difficult for existing farmers to increase their holdings. This may be aggravated if government programmes for subsidized credit are exhausted too soon. It will change the risk profile of investments in agriculture as the farmer's income then depends not only on his managerial qualities, the growing and market conditions, but also on the long-term political risk of a non-continuation of the payments (see below).

A related effect on structural adjustment is, in a wider sense, the increased costs of non-agricultural uses of land. Higher land prices make it less attractive to locate industries and other economic activities in rural regions and, as a consequence, rural development may slow down. If set-aside obligations are imposed together with the compensatory payments, as is currently the case, then economic activity in rural areas could suffer even more as output is reduced. Migration to urban centres may, for these reasons, increase.

Structural adjustment and improvement of market efficiency are probably key factors in creating a viable agricultural sector in the CEECs. It would therefore be desirable to avoid counter-productive policy measures.

**(iv) Credit**

Today, few loans to farmers in Eastern Europe are provided on a normal commercial basis. There are several reasons for this. First, agricultural profitability is often too low to allow profitable investments at market rates. Second, land is often not recognized as a collateral, for loan, partly due to the unclear situation with respect to property rights still prevailing. Third, even when recognized as a collateral, land prices are often artificially low, due to restrictions on trade.

To relieve the first problem, an increased efficiency in production, processing and marketing is necessary. To solve the second and third problems, the establishment of credit institutions and real markets for land are needed. Progress in these areas is expected, and land prices would subsequently be expected to improve. Compensatory payments would make land even more expensive and thus further increase its value as a collateral for loans. This can put some landowners in a better position to obtain credits for restructuring the production apparatus. However, only existing landowners would really benefit from this. An increase in demand for credit from the agricultural sector would compete with credit demand from other sectors. Real interest rates may increase and the agricultural investment demand may crowd-out more productive investments in other non-subsidized sectors. However, at present, investment in agriculture seems to be below an efficient level, but this may become a problem at a later stage of development. A particular problem in a policy context is that a subsequent dismantling of support may involve huge risk for credit institutions. The value of land as a collateral would disappear if subsidy reduction leads to a steep decrease in land prices. Farmers and their credit institutions, therefore, have a common interest in avoiding this and will seek to reduce the political risks involved (see point (vii)).

**(v) Labour supply and direct income payments**

Compensatory payments are coupled to the use of specific production factors, and will thus affect production and resource allocation. However, even completely decoupled payments can influence production because of their influence on farm households' labour supply. Empirical investigations in developing countries and in Western Europe have confirmed that labour supply of farm households is reduced in response to decoupled payments.<sup>1</sup>

<sup>1</sup> Kjeldahl R., Direct income payments to farmers, Report No 85, Danish Institute of Agricultural and Fisheries Economics, Valby (Copenhagen), 1995.

The link between labour response and production is strongest when labour markets are imperfect, when the age of farmers is high, and when, as a result, the approach to farming is more for 'personal' profit than for 'commercial' profit. If such payments constitute an important fraction of household income, a rational utility maximizing choice for farm households would be to reduce labour time and increase leisure time.

In the context of East European enlargement, this disincentive effect may, in certain areas, reduce production volumes and variety and have unintended consequences for farm structure and the long-term prospects of rural development. Some farm households may prefer to concentrate on extensive but subsidized wheat or livestock production. This would permit them to decrease labour input to farming, collect a fixed income in the form of subsidies and still live reasonably well without strong incentives to provide work. The risky return from investing in the farm may be perceived as unattractive, as long as a nearly risk free (disregarding political risks) fixed return in the form of subsidies is available.

On other farm types, such as the collectively owned and very big ones, the additional income may be spent according to a more businesslike strategy. This could involve repayment of public or private debt or investments in agricultural as well as non-agricultural sectors. Though the overall production response from the sector is indeterminate, agriculture would tend to become less labour intensive and more capital intensive as a result.

The share of payments in income could become considerable. Take, for instance, the hypothetical example of a Lithuanian landowner with 20 hectares of land. Based on the typical local yield of only 2.5 t/ha the land could entitle him to payments of ECU 2 250, or four times the Lithuanian GDP/capita in 1994 (of course this ratio may change if GDP improves before membership).

**(vi) Competitive position**

A central question related to all the aforementioned points is how the compensatory payments would affect the competitive position of farmers in the CEECs relative to EU farmers. In a long-term perspective, there is little doubt that payments and the conditions attached to them would hamper efficient resource use in CEEC agriculture as they do in the European Union.

In the short and medium term, the payments may improve CEEC farmers' competitive position by relieving liquidity constraints that at present determine the level of (under) investment in the agricultural sector. This could bring about a faster modernization of agriculture and reduce production costs. However, competition problems in the sector today seem less linked to production costs in primary agriculture than to economically inefficient up (input suppliers) and downstream



(processing and marketing) industries. It may, therefore, be more desirable to favour investments in these sectors if the objective is to improve competitiveness.

#### (vii) Policy risk

A sector which becomes a client for public support is exposed to the risk of this support being withdrawn. As production structures adapt to the incentives provided by a specific support system, producers' income becomes more vulnerable to changes in the system. The sectoral response to this exposure has in most if not all EU countries, been to fight against changes in support levels by establishing strong organizations able to exert political influence. Hitherto, they have been rather successful and agricultural policy changes with negative implications for producers' income have, in general, been linked to some kind of compensation. The lobbying efforts are an efficiency loss seen from an overall economic perspective. Not only are these efforts quite costly in money terms — they also tie up precious human capital.

Therefore, from a policy point of view, extending the compensatory payments to the CEECs would make it more difficult to reduce or abolish the payments as the CEEC farmers are likely to join ranks with their colleagues in the EU to preserve this important source of income and guarantee of wealth.

#### (viii) Interaction with other sectors and local effects

Economy-wide effects of farm subsidies are often estimated under the assumption of a single market for factors and goods where labour and other factors can move freely between industries. In such a framework the sum of economic welfare effects from subsidizing agriculture is always negative. But, as emphasized by empirical investigations, factor markets are segmented and labour is far from flexible. Segmentation of wages and markets, may provide an argument for agricultural policy if the subsidies benefit the local economy in a way that justifies the loss to the general economy. At the same time, a high degree of market segmentation may point to the need for infrastructural policies that could lower transaction costs for factors to move between markets, thereby contributing to overall efficiency.

With respect to the direct compensatory payments, their effect on the rural economy and on other sectors will depend on how they are financed and on how subsidies leak out. Leakage can be defined as the part of the subsidies that benefits non-farmers or is lost because of increased inefficiency. A part of the compensatory payments may leak out of the rural communities because it is captured by landowners in urban areas. This is a particular problem in Eastern Europe where land restitution based on historical property rights has created a class of urban landowners.

More leakage occurs, if the additional demand made possible by the compensatory payments, pushes up local prices for products, services and labour. Empirical investigations can be used to gain some insight into the economic linkages between households and the economic sectors. For instance, an inter-regional urban-rural CGE model was used to investigate the effects of terminating certain US farm programmes.<sup>1</sup> It appeared that the household service sector situated in rural areas is highly dependent on the level of farm subsidies. Terminating coupled (production linked) farm subsidies led in the model to a contraction of the household service sector and the farm sector. This contraction is especially strong under the assumption that all production factors are owned locally.

Under an assumption of more diversified factor ownership (for instance, that urban households own land) the economic incidence will be less marked in rural regions as consequences are distributed more widely among household groups. In both scenarios urban households gain considerably more from the liberalization than the rural households lose.

However, if decoupled subsidies are terminated, the household service sector will suffer while farm output will be little affected. This is because the effect on resource use is lower with decoupled subsidies. Terminating decoupled subsidies would favour investment-goods producing sectors, because the decrease in farm subsidies would reduce the drain on available savings i.e. rural buying power would be reduced to the benefit of urban investors.

An extrapolation of these model results to the CEECs would lead to the conclusion that the leakages of subsidies could be important in some countries: bad infrastructure would imply stronger market separation and landownership is diversified in the population. The effect on farmers' incomes may thus be reduced and the economic benefits rather arbitrarily distributed.

#### (ix) Inflation and other macroeconomic variables

Compensatory payments provide a cash injection for the economy. Although the point of injection is farmers, overall demand will be affected. The increase in buying power is potentially inflationary. In turn this may affect the exchange rate. Both effects are likely to influence the level of real incomes in the economy and contribute to a redistribution of wealth in favour of landowners. Inflation could, as a secondary effect, increase the demand for land and other assets traditionally considered as inflation safe, thus accentuating price increases. Additional macroeconomic aspects are

<sup>1</sup> Kilkenny M. 'Rural urban effects of terminating farm subsidies', *American Journal of Agricultural Economics* No 75, 1993.

discussed below, where a model analysis of the Polish economy's estimated response to the CAP payments is reported.

## 2.4. Summing up

Compensatory payments would, *ceteris paribus*, lead to increasing land prices in all CEECs. The distribution of the wealth increase would depend on the ownership structure, as it is the landowner that in the long run gathers the benefits. A

substantial part of the transfers may for this and other reasons leak out of the sector. Higher land prices may in themselves hamper structural development. In the short run, compensatory payments could improve CEEC farmers' ability to compete by providing an economic safety net and relieving credit constraints. However, the current competitive difficulties of CEEC farmers are as much linked to inefficient up and downstream structures as to production costs. Introducing compensatory payments may make investment planning subject to additional policy risk, thus increasing lobbying incentives — and costs — for the sector. Finally, the size of the payments may have macroeconomic implications through their effect on household demand.

### 3. Impact of extending the compensatory payments to new Member States — empirical approach

#### 3.1. Introduction

This chapter is devoted to case study analyses of the implications of extending direct payments to the CEECs. It draws on two reports produced for the Commission. The first study (Tabeau, 1996) is a CGE approach to estimate certain macroeconomic consequences that the compensatory payments would have for the Polish economy. The second study establishes evidence on some structural and economic variables likely to determine primary economic implications of such payments in the agricultural sectors of Poland and the Czech Republic (see Annex).

Introducing compensatory payments in the CEECs will have direct implications for the EU budget. The budget impact primarily depends on which countries become members — and when — and on how payments are implemented. Transition periods may ease the immediate cost, but would not make a great difference in the long run, unless, in the meantime, the EU policy is reformed. Long-run costs are also a function of the yield and base area used to calculate payments. Though such figures are an empirical matter, they remain subject to negotiation.

Assuming that the current CAP provisions are applied to the CEEC-10 the Commission has, in the agricultural strategy paper<sup>1</sup> estimated the total costs of compensatory payments in year 2000 to be ECU 6.6 billion. This figure will not change significantly with time. The cost component most likely to

change is the cost of other market measures that will have a tendency to increase with production. Total budget costs are, under the same *status quo* assumption, estimated to increase from ECU 9 billion in 2000 to 12.2 billion in 2010. However, small changes in the assumptions are likely to change results significantly. Especially crucial is the assumption on increases in productivity as the costs of the price policy are high for marginal production increases.

Table 1 provides the working hypothesis of the amount of these payments necessary in the two case-study countries and in CEEC-10. These estimates are based on the projections in DG VI country studies and may vary from other sources.

The following section provides a summary of the model analysis concerned with the macroeconomic consequences of making compensatory payments to farmers in Poland. Then section 3.3 discusses the implications that sectoral characteristics in Poland and the Czech Republic may have for the effects of these payments.

#### 3.2. Direct transfer to Polish farmers — certain macroeconomic implications

The investigation reported here focuses especially on the impact of compensatory payments and agricultural prices. It is carried out by a CGE model of the Polish economy calibrated on 1993 data.<sup>2</sup> The model is sequentially dynamic and generates results for each year in the period 1995 to 2004. It should be noted, that CGE models are best at investigating long-term real effects in the economy and less useful in analysing purely monetary phenomena and short-term instability. Because they rely on market clearing through price

<sup>1</sup> Study on alternative strategies for the development of relations in the field of agriculture between the EU and the associated countries with a view to future accession of these countries. Communication by Mr. Fishler (DG VI), 1995.

<sup>2</sup> The model was developed under an ACE project — see Report No 92-0745-F.

**Table 1**

**Budgetary estimates based on production structures and volumes projected to 2000**

	Arable crops	Beef premium	Total compensatory payments	Total expenditures including market measures
Poland	1 844	345	2 189	3 178
Czech Republic	565	54	619	902
CEEC-10	5 789	808	6 597	8 958

Source: European Commission, DG VI.

adjustments, CGE models are often called neoclassical. The current model provides results in real terms, though prices are stated in relative terms.

The model disaggregates the economy into three type of households (urban, farmer, and pensioner), four production factors (capital, paid labour, farmers, and land) and four sectors (agriculture, manufacturing, market services, non-market services). For a further description and detailed results see Tabeau, 1996.<sup>1</sup>

### 3.2.1. The scenarios

Policy options are described by scenarios. To illustrate the effect of accession, higher agricultural prices and compensatory payments, three EU scenarios were formulated. They are all based on the assumption that Poland will become a member of the EU in 2000, which may be earlier than normally expected. Accession is expressed as an 80% decrease of Polish import taxes on non-agricultural products. For agricultural products all

import taxes are removed, but prices are aligned to the EU level. In the first EU scenario (EUA-) it is assumed that the EU has liberalized its agricultural policy, thus agricultural prices in Poland become equal to world market prices on accession. The second EU scenario (EUA+) represents the situation where EU prices remain high, by assuming that agricultural prices increase by 10% in ecu terms. A third EU scenario (EUA+CP) adds compensatory payments to the assumptions in EUA+. All scenarios are compared to a baseline non-EU scenario — a 1993 policy status quo — with border protection and other policy variables unchanged.

#### Scenarios EUA- and EUA+

The EUA- scenario shows that Poland's GDP will increase significantly compared with the non-EU scenario. This is due to economic benefits of increased trade and lower domestic prices (lower border taxes). Five-year cumulated GDP growth amounts to 36.1% which is higher than the non-EU scenario growth of 27.4%. Also, total investments increase especially because of increased profitability in the manufacturing sector. However, as available savings limit the amount of total investments, this is somewhat to the detriment of agriculture where the stock of capital decreases slightly. However, even investments in the manufacturing sector would benefit farmers

<sup>1</sup> 'Direct payments to Polish farmers — a CGE approach' (available from DG II, European Commission).

**Table 2**

**Impacts on the Polish economy of EU accession: three scenarios for the CAP**

	Period	Non-EU	Before accession	EUA- (without agri-price increase)	EUA+ (with agri-price increase)	EUA+CP (including compensatory payment)
GDP growth (%) <sup>1</sup>	1995-99 2000-04	27.4	28.7	36.1	25.4	27.0
Household income (million ECU)				<sup>2</sup>	<sup>2</sup>	<sup>2</sup>
Farmer	2004	6 600		- 180	+ 1 300	+ 3 460
Urban	2004	80 200		+ 10 100	+ 1 440	+ 2 550
Pensioner	2004	19 350		+ 270	+ 210	+ 250
Capital growth (%) <sup>1</sup>						
Total	1994-99 2000-04	32.5	36.1	35.1	28.1	30.0
Agriculture	1994-99 2000-04	26.1	34.2	-2.2	55.0	50.4
Manufacturing	1994-99 2000-04	30.2	33.9	41.2	19.2	22.7

<sup>1</sup> Cumulated over five years.

<sup>2</sup> Income difference compared with non-EU.

Source: Tabeau, 1996.

to the extent that efficiency in agricultural up and downstream industries is improved. Income of urban households increases strongly under this scenario, while farmers, compared with the non-EU scenario, lose because of a lower level of investments in the farm sector.

However, the situation changes significantly if agricultural prices do increase as assumed in EUA+. Not only does this scenario result in lower GDP growth rates than the EUA-; GDP growth even falls slightly below the non-EU scenario. The reason is that the share of overall income spent on food products is high in Poland. Substantial food price increases could, therefore, depress real income and this will then reduce the more income-elastic demand for non-agricultural products. The result is that the urban households will lose ECU 8 660 million of their accession gain (down to ECU 1 440 million) while farmers' households will end up gaining ECU 1 300 million compared with the non-EU scenario. However, even if GDP is slightly lower than in the non-EU scenario, real household incomes are maintained or even improved due to the decrease in overall price levels that results from lower import taxes. As an obvious response to higher agricultural product prices, agricultural investments and output increase, but this happens at the expense of other investment projects. The total capital stock over the five-year period only increases 28.1% instead of the 35.1% estimated for EUA-.

This model includes an assumption of exogenous government spending, which may be unrealistic if GDP growth slows so much that the budget deficit increases. The Polish government may, in that case, choose to reduce public expenditure and this would have a negative effect on growth rates. If so, the slowdown of GDP growth in EUA+ may be accentuated. On the other hand, this — as any — model is a crude simplification of reality. The results produced for the EU scenarios emphasize, in particular, the trade effects of EU accession and the negative economic effect of higher agricultural prices in an economy where consumers spend a significant fraction of their income on food. It will almost certainly underestimate the positive effects of membership as it does not take account of, for instance, increased foreign investments in Poland, more assistance for structural development, or other complex consequences of membership. Though it is preferable that the base scenario matches economic reality, this is not essential in this exercise where the base is used mainly to analyse changes in a few policy parameters.

#### Scenario EUA+CP

EUA+CP investigates the effect of a hypothetical direct — and decoupled — transfer from the EU budget to Polish farm households every year in the period 2000 to 2004. Assuming that actual CAP legislation is applied to Polish production as forecast for 2000, the Commission estimated that compensatory payments would amount to ECU 2 189 million. This is close to 3% of Poland's GDP in 1993 and even if the economy expands

relatively fast the transfer will still exceed 2% of GDP in 2000. In the agricultural sector payments would equal 47% of the value of the gross agricultural output generated by Polish farmers in 1993.<sup>1</sup> Even in 2000, this would constitute a major part of agricultural income.

An important economic implication of transferring this subsidy to farmers is to increase annual GDP growth (compared with EUA+) because payments, in the first instance, stimulate farm households' demand for goods and services from other sectors. The transfer corresponds to an expansionary fiscal policy with the particular feature that the expansion is a 'gift' from the outside. To satisfy additional demand, exports decrease slightly and imports increase.

However, when taking into account the fact that the payments, cumulated over five years, amount to 10 to 15% of one year's GDP, the 1.6% improvement in GDP over the same five-year period seems small (27 instead of 25.4%).

With respect to income distribution, farmers become, as one would expect, better off as their real income now increases by ECU 3 460 million compared with non-EU. This is ECU 2 160 million added to the income improvement that farmers got in the EUA+ only because of the higher agricultural prices. Urban households also benefit from the increased demand from the agricultural sector and their real income would in 2004 be ECU 1 110 million higher. The relative importance of these gains could be appreciated by comparing with the reference income stated in the non-EU scenario column.

Pensioners gain slightly in all scenarios. This is due to increases in the income they derive from other sources (e.g. farming or capital rents).

The model probably understates the negative effects of the compensatory payments on the economy. For technical reasons the income transfer has been considered to be decoupled. This means that no account has been taken of the costs due to the less efficient use of resources that arise from the factor link of the subsidies. Nor has the loss to the general economy caused by set-aside been taken into account. The size of such losses is difficult to estimate with the current model, but will depend on the distribution of land within farms and on the particular combination of input and output prices. Any increase in agricultural investment due to factor linked subsidies would leave fewer capital resources available for other sectors.

According to the detailed results reported in Tabeau (1996) agricultural income will, in the EUA+CP scenario, decrease relative to other incomes. The reason is that investments generated by the extra household demand are directed mostly towards non-agricultural products. In consequence, the capital stock in agriculture is renewed at a slower rate and, in the long

<sup>1</sup> Source: 'Country Report on Poland', DG VI, 1995.

run, less income will be generated from production. Although, in the model, this is interpreted as an income decrease, it would probably be realistic to expect an increased out-flow of labour from agriculture to other sectors (push-pull effects). The compensatory payments may thus increase household income, but decrease income derived from labour. In the end, this would affect those who in the future would like to buy into farming as they will have to pay the capitalized value of the income support while, at the same time, suffering from a lower return to labour. As the most mobile part of the labour force is the young and best educated, the compensatory payments may slow mobility and hamper structural development opportunities for existing landowners, but increase incentives for the young and more dynamic sections of the rural population to migrate towards the non-agricultural sector. Both phenomena would, in the long run, decrease productivity of the agricultural sector.

The demand boost due to compensatory payments and the increase in agricultural prices are both inflationary and would cause the trade balance to deteriorate. This could have a negative affect on the exchange rate and lower real income levels for other groups in society. On the other hand, direct transfers will support the exchange rate. However, the present approach is not well suited to describe implications for nominal variables and no firm conclusions can be drawn.

### 3.2.2. Conclusion

Though Poland must be expected to benefit from EU membership, the gain is substantially diminished if agricultural prices are increased upon accession. This is explained by the large share of Polish incomes spent on food. Even though Polish farmers would gain from a price increase, the loss imposed on non-farmers exceeds this gain considerably.

If, in addition to the price increases, compensatory payments worth ECU 2 189 million are transferred to Polish farm households this will accentuate farmers' gains but only have a small positive effect on Poland's GDP. The estimated GDP effect can be described as a one-off increase, while long-term growth rates do not change markedly. As the possible negative effect on resource allocation has not been taken into account, even this small positive GDP effect may be overstated. This points to the incapacity of direct income transfers to promote economic catching up with the EU. If, alternatively, such funds were used to finance projects aiming at improving economic structures, then a similar demand-driven expansion may take place, but, contrary to using compensatory payments, prospects for long-term growth would be improved too.

### 3.3. Distribution of income and wealth — a case study of the Czech Republic and Poland

Good social or economic reasons would be necessary to justify distribution of ECU 6.6 billion as cash payments. This section

takes a closer look at some of the effects that the compensatory payments could have for income and wealth in Poland and the Czech Republic. The analysis is partly based on the background information and discussion provided in a separate report (CEAS 1995) and partly on evidence from other studies.

The Czech Republic is a typical example of how land use patterns were altered under Communism. Ownership rights were abolished and the small farms were swallowed by large cooperatives. The recent restitution of land ownership rights has therefore led to a very apparent difference between ownership and farming structures. Agriculture is less important in the Czech economy than in most other CEECs. In 1994 it contributed 3% to GDP.

A specific feature of Poland in the present context is that most land remained in private use during Communism. There are thus fewer problems related to land distribution than in many other of the former command economies. However, as in most other CEECs, the farm structure is polarized, and the economic importance of the sector is high. Agriculture contributes 6.3% to GDP (1994). Poland occupies a third of CEEC-10 agricultural area.

In the following, some general features and their relation to compensatory payments are discussed. To simplify the analysis only the arable area payments have been investigated. As this, in value terms, constitutes about 80 to 90% of the payments (see Table 1) and as the beef premium is also area linked, this simplification is not expected to change the conclusions significantly.

#### 3.3.1. Czech Republic

Since transition began in 1989, gross agricultural output has decreased by about 28%. This dramatic change is a result of low agricultural profitability, the land restitution process and structural and institutional factors. In 1989, only 3% of total agricultural land was owned and farmed by individuals. The remaining share was either owned by the State (36%) or by collectives (61%). These units had average sizes of 2 500 and 6 000 ha, respectively.

The Czech land reforms aim to re-establish private ownership with minimum disruption to the structure of holdings. Restitution of land has, therefore, not led to a large scale break-up of production units. Only about one fifth of agricultural land is now cultivated in holdings below 30 ha (see Table 9). While roughly 1 million ha are operated by family farms of an average size of 16 ha, more than 3 million ha are still cultivated in some form of cooperative or partnership structure of an average size around 1 200 ha. The holding structure has thus little resemblance to the family farm structure common in the EU.

This structural characteristic is not expected to change in the coming years. Though the average farm size may still decrease

this does not necessarily signify a real structural change, but rather that small parts of some large holdings are taken over by the legal owner. Most of the area remains farmed within large units, however.

A consequence of the restitution of ownership rights and limited structural change is that 87% of farming activities take place on rented land. While there are an estimated 3.5 million landowners in the Czech Republic only around 1.4 million belong to the rural population. The remaining 2.1 million landowners (60%) are located in urban settlements. Urban landowners hold about 40% of the land restored until now.<sup>1</sup>

The land market is characterized by administratively determined prices and rents. There is, however, little transparency and it is difficult to assess whether the quoted prices reflect the value of land appropriately. According to the information that could be obtained, the average land price for 1994 was close to ECU 1 500/ha, though some well-situated plots are traded at a price two to three times higher. Land rents are slightly above 1% of this price. They are, even in relative terms, thus much lower than in Western Europe. This corresponds well, however, with the fact that profits from farming are currently depressed or negative. Land prices, on the contrary, do not necessarily reflect temporarily low profits, but may include an anticipated future improvement in the return to land or, in some cases, the value of non-agricultural uses of the land.

Agricultural profitability is very low in the Czech Republic. According to some calculations the return to land is even negative. In 1994, the net value added in agriculture amounted to Kcs 21.4 billion (or ECU 625 million). When wages and capital expenses are deducted this turns into a negative return to land of Kcs 6.7 billion. This may, however, reflect the fact that the imputed costs of capital are too high thus exaggerating the negative return to land.

During transition, the cropping pattern in the Czech Republic moved towards more cereals and oilseeds, at the expense of potatoes and sugar beet. This is partly due to lower demand for potatoes as livestock feed and a government programme stimulating use of biofuels.

### 3.3.2. Implications of compensatory payments in the Czech Republic

If compensatory payments are introduced in the Czech Republic, the structural conditions summarized above will determine the distribution effects of the payments.

A possible scenario is the following. The payments will be paid to those who exploit the land, but according to 1994 figures

only 12% of the land is exploited directly by the owners. Most payments will in reality accrue to large private cooperatives, who, in principle, are free to dispose of the money as they like. According to the estimate summarized in Table 3, this will increase gross revenue from cereals by more than 60%. Profits will increase relatively more, as costs will not increase a lot, though some additional expenses may arise due to more administration and restrictions on production (set-aside, environmental cross compliance).

**Table 3**  
**Potential impact of compensatory payments on typical Czech cereal farms' gross revenues**

	Year 2000 (projected) <sup>3</sup>
Average cereal yield (tonnes/ha) <sup>1</sup>	4.49
Compensatory payments per reference tonnes	54.3
Compensatory payments per hectare	244.0
Set-aside payments per hectare	309
Average revenue received from area payments	
• in small farms scheme	244
• in professional scheme	250.5
Revenue from crop (cereals) sales <sup>2</sup>	395
Total revenue per hectare	
• in small farms scheme	639
• in professional scheme	646
% increase in revenue as a result of area payments	
• small farmer	61.7
• professional farmer	63.4

<sup>1</sup> Cereal yields chosen.

<sup>2</sup> Cereal revenues based on ECU 88/tonne.

<sup>3</sup> If not otherwise indicated, figures are in ecu.

However, those who farm on tenanted land, thus, most cooperatives, may not, in the long run, profit from the increase in payments. The legal owners of the land may try to charge higher rents and in this way benefit from the payments. The extent to which they will be able to increase rents depends on the local market conditions, negotiating power, legislation and the provisions in rental contracts. If landowners could exercise their ownership right freely, they would be able to recuperate most of the payments (net of extra costs imposed by enrolling in the scheme) and the value of land would rise correspondingly.

With respect to distribution, a key characteristic is that a large proportion of the landowners reside in urban areas. According to the estimate already mentioned, they own around 40% of restored land or around 1.4 million ha of the total arable area of 4.2 million ha. If urban households capture the increase in land rent due to compensatory payments this will increase the annual income of urban households by some ECU 206 million. The wealth increase for urban households due to higher land

<sup>1</sup> The definition of urban/rural in this context is not known.

prices could be estimated to be ECU 4 to 6 billion assuming real interest rates of 3 to 5%. As the information on the actual distribution of land is incomplete, these figures are very crude estimates and only serve to provide an idea of the orders of magnitude involved.

### 3.3.3. Poland

The decrease in agricultural production has been less dramatic in Poland than in other CEECs. Important reasons are that Communism inflicted only a moderate change in ownership structure, and that Poland has operated a more protectionist agricultural policy than other CEECs. Prior to transition (1989), 72.1% of the land was in the hand of private farmers. This share has since, because of land restitution, increased to 91% (1994), the vast majority of which is farmed by the owners. For the remaining land, renting plays an increasingly important role for improving the structure of holdings. Polarization of farm structure in Poland is essentially a geographical phenomenon. The biggest farms are the former State holdings concentrated in the north and north-west regions. In other parts of the country, the average size of holdings remains low, but while the number of very small farms (< 2 ha) is unchanged, bigger plots are concentrated especially by renting land. The fairly unchanged ownership structure and the high rate of unemployment in rural areas have hindered the large transition-induced decrease in the agricultural labour force often seen in other CEECs. Since 1989 it has declined only 15%, which is a rate comparable to the development in the EU. The rural outmigration is expected to remain low in the medium term.

The land market in Poland seems to be more free than in the Czech Republic, though prices are at half the Czech level (measured in ecu). On average, land is traded at ECU 706 (Zl 1900) per hectare (1994). The difference in price level between the two countries may reflect quality differences, but also that lack of capital and constraints on credit are especially pronounced in Poland. There is a wide spread in land rents which are, in general, linked to agricultural commodity prices as they are set in kind. Rents range from ECU 0 to 110 per hectare. At the low end of the market, the tenant simply assumes the land tax obligation and pays no rent to the owner.

It has not been possible to obtain reliable figures for the return to land in Poland. However, farmers' household income is on average 87% of the national average. But, as most farm households (80%) have multiple income sources, this does not say much about profits from farming.

### 3.3.4. Implications of compensatory payments in Poland

Contrary to the Czech Republic (and other CEECs with a similar structure), the majority of Poland's farm households

will directly experience the wealth and the income effects from the payments as land is mostly owner occupied. However, estimated payment rates are somewhat lower than in the Czech Republic due to lower cereal yields. The estimated impact on gross revenue is repeated in Table 4. As in the Czech Republic, the payments would constitute the major part of the profit from the land, and also here land values would be expected to increase. However, lower payment rates in Poland will moderate the increase of land price in absolute terms. In relative terms, however, the increase may be greater.

**Table 4**  
**Potential impact of compensatory payments on typical Polish cereal farms' gross revenues**

	Year 2000 (projected) <sup>1</sup>
Average cereal yield <sup>2</sup>	3.28
Compensatory payments per reference tonne	54.3
Compensatory payments per hectare	178
Set-aside payments per hectare	226
Average revenue received from area payments <sup>2</sup>	
• in small farms scheme	178
• in professional scheme	183
Revenue from crop (cereals) sales <sup>4</sup>	321
Total revenue per hectare	
• in small farms scheme	500
• in professional scheme	504
% increase in revenue as a result of area payments	
• in small farms scheme	55.4
• in professional scheme	56.9

<sup>1</sup> If not otherwise indicated, figures are in ecu.

<sup>2</sup> Cereal yields chosen as they are higher than oilseed and pulse yields.

<sup>3</sup> Set-aside assumed rate of 10%.

<sup>4</sup> Cereal price based on ECU 98/tonne (1994 average Polish price).

Cropping patterns could become affected. Potatoes are a very popular crop in Poland and widely used as animal feed — especially for pigs. Although it is expected that the importance of potatoes will decrease in the future, projections in the Commission's country reports reach the result that there will still be more than 10% of agricultural land under this crop in 2000. However, potatoes are not currently the object of direct intervention under the CAP. It is therefore likely that potato cultivation for feed purposes will decrease steeply if compensatory payments are made available to cereal growers. Crops eligible for CAP subsidies could substitute for potatoes as a feed component. It is not clear what economic and environmental implications such a shift would have, but this deserves investigation as the problem is not unique to Poland and may have implications for the EU budgetary costs of enlargement.



#### 4. Conclusions

The objective of the present study has been to look into the effects to be expected from extending the CAP compensatory payments to farmers in the CEECs. Agricultural policy analysts have previously questioned the rationale of doing so. Also in the Commission's agricultural strategy paper it was emphasized that there are no economic reasons to provide these payments as farmers in the CEECs would not experience any price cuts upon entry. In the present study, this view is supported by the analysis. In fact, it seems that there may be several good reasons not to extend these payments to the CEECs.

First, these payments, on their own, are not an essential element in safeguarding the principles of the CAP. Further, they are, from the outset, differentiated according to the loss in sales revenue expected because of the 1992 reform of the CAP. Based on this simple observation it would be uncontroversial to argue that CEECs' farmers should not be entitled to a payment as they will suffer no losses because of EU membership. This could justify why the CEECs should have accession conditions which differ from those offered to the latest entrants.

Second, though the cash value of the transfer may give an initial economic boost to certain rural areas, the payments will be expected to increase the price of agricultural land and may thus hamper structural development of farms and rural development as a whole.

Third, macroeconomic modelling showed that farmers in the case study country, Poland, are already made better off relative to other citizens following EU accession (high price scenario), thus contradicting any redistributive argument for extending the payments. Effects of the payments in the economy would be similar to an expansionary fiscal policy, but benefit farmers mainly. Yet, as with expansionary fiscal policy, the long-term macroeconomic benefits are likely to be weak and the increase in demand may worsen any inflationary effect of the simultaneous food price increases. The macro model also illustrated the negative effect on the Polish economy of substantial increases in food prices.

Fourth, distribution of the payments may — seen from the Community taxpayer's viewpoint — be quite arbitrary. Even if payments are granted to the land users, they may in the end benefit landowners mainly. In the Czech Republic and other

CEECs, a major proportion of the land is owned by urban dwellers. It could be asked why a large fraction of CAP subsidies should benefit those in the urban population that for historical reasons have regained the right to their land.

Fifth, not only the ownership structure, but also the organization of the holdings is radically different in the EU and most CEECs. In the Czech Republic, only a small proportion of the land is cultivated in units comparable to the EU concept of a family farm. Most farm production takes place in large cooperatives of several thousand hectares and profits are shared between owners and workers in various ways. The transfers to such big 'industrial farm units' will be considerable and with unknown implications for rural income and rural development.

Sixth, even if the payments may have certain positive effects on the agriculture sector it should be investigated whether greater benefits could not be obtained more efficiently with targeted instruments. Structural measures seem more appropriate to create the conditions for improving the economy in a sustainable fashion and to shorten the time it will take for the economy to catch up with the EU.

This study has pointed to potential economic problems of extending the compensatory payments to the CEECs. However, the questions deserve further treatment and the main contribution of the present analysis may be to serve as a starting point for renewed investigation and reflection. Many theoretical concerns are not only relevant for compensatory payments in the CEECs, but could also be raised in relation to other similar instruments. Some would also apply to the CAP in the EU. Fundamental differences between the farm sector in the EU and in the CEECs create, however, a particular need for a closer examination of the economic structures before actual policy measures are extended.

The economic arguments leave, however, a political counter-argument unanswered. Would it be possible to defend a policy which transfers important cash subsidies to farmers in the rich EU countries, but not to farmers in the poorer CEECs? To solve this problem, reflection on the future of the CAP would be necessary. It may imply redefining the role of direct payments. This should be done with an objective to make sure that measures more appropriately target the political objectives which motivate the common agricultural policy.

**Annex**  
**Agriculture in the Czech Republic and Poland**  
**Land, labour and income**

by CEAS Consultants<sup>1</sup>

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<sup>1</sup> CEAS Consultants (Wye) Ltd, Centre for European Agricultural Studies.

**Special glossary/abbreviations used in Annex**

AAPS	Arable Area Payments Scheme
APA	Agricultural Property Agency (Poland)
CEECs	Central and East European Countries
CAP	common agricultural policy
CPI	consumer price index
CSO	Czech Statistical Office
GAO	gross agricultural output
GAP	gross agricultural product
GUS	Główny Urząd Statystyczny (Polish Statistical Office)
TUAA	total utilizable agricultural area
VUZE	Agricultural Economics Research Institute: Czech Republic

## 1. Introduction

As part of their research programme, DG II has undertaken a study which seeks to improve the understanding of some of the consequences of introducing direct payments into the CEECs.

CEAS Consultants were commissioned to assist the DG II research through the provision of supporting and background information for two case study countries: the Czech Republic and Poland.

### 1.1. Objectives

The objective of the work carried out by CEAS Consultants and addressed in this report was to provide information for each case study country in the following areas:

- (i) the position of agriculture within the economy;
- (ii) the structure of holdings and production;
- (iii) the market for agricultural land covering current ownership pattern, definition of ownership, land prices and rental values (including developments since transition and the potential direction of change in the next five years, institutional factors, rules and regulations affecting the market);
- (iv) the market for labour including the use of labour on farms, the general rural labour market, rural-urban migration, the direction of change in the next five years;
- (v) household income including income sources and part-time farming, income in kind and the direction of change in the next five years;
- (vi) an assessment of the direction of influence of direct payments on cropping patterns.

### 1.2. Methodology and report structure

The study has been undertaken by desk research and discussions with some observers (e.g. academics, researchers) in each of the case study countries.

The report structure is as follows:

section 1 (this section): introduction

section 2: the Czech Republic: covering all issues referred to in 1.1. for the position of agriculture, the land and labour markets, ownership and income

section 3: Poland: as Czech Republic

section 4: overview of the direction of impact of direct payments on cropping patterns, the future direction of the land and labour markets and agricultural income in each country.

## 2. Czech Republic

### 2.1. The position of agriculture in the Czech economy

Czech agriculture, like the whole Czech economy, has experienced substantial change since the transition from a centrally planned to a more market-oriented economy began in 1989. The economic policy during transition has been based largely on restrictive monetary and fiscal policies, market liberalization and privatization. The Czech currency was devalued from Kcs 5.39 to the US dollar to Kcs 28 to the dollar in 1990 (roughly ECU 1 = Kcs 3 to ECU 1 = Kcs 23). About 85% of all producer and consumer prices were removed from State controls in 1991 and a rapid programme of privatization of State assets was initiated.

**Table 5**

**Important economic indicators in the Czech economy, 1990-95**

	1990	1991	1992	1993	1994	1995 (e)
% change GDP	- 1.2	- 14.2	- 6.4	- 0.9	+2.6	+4.2
% change consumer prices	+ 9.6	+ 56.7	+ 11.1	+ 20.8	+ 10.0	+ 9.0
% unemployed	0.8	4.1	2.6	3.5	3.2	4.0
Exchange rate Kcs/ECU	22.9	36.5	36.6	34.1	34.1	36.3

Note: (e) = estimate.

Source: CSO, VUZE, DG VI, European Commission.

The impact of the early years of transition and economic reform resulted in significant decreases in the level of GDP (1990-93), rapid increases in price inflation and a small increase in the level of unemployment (Table 5).

By 1994, however, the Czech economy had moved from decline into recovery, with GDP increasing by 2.6% and expected to grow by a further 4.2% in 1995.

Against this background, gross agricultural output has decreased by about 28% since 1989 (Table 6) and the share of GDP accounted for by agriculture has decreased from an estimated 6% in 1990 to 3% in 1994. Since farm-gate prices were subject to some government controls, prices in the sector did not rise as much as in other sectors resulting in the gross value added in the sector decreasing by more than gross agricultural output.

Although the process of decline in the agricultural sector appears to have slowed down in 1993/94, forecasts by VUZE expect the sector to continue to decline in relative importance with the forecast agricultural share of GDP in 2000 estimated to be 2.5%.

**Table 6**

**Gross agricultural output, 1989-94 (indices)**

1989	100.0
1990	97.7
1991	89.0
1992	78.3
1993	76.4
1994	72.2

Source: CSO.

**Table 7**

**Economic account for agriculture, 1992-94 (extracts)**

	<i>(billion Kcs current prices)</i>		
	1992	1993	1994
Gross agricultural output	96.9	95.3	93.8
Intermediate consumption	70.1	65.6	63.0
Gross value added at market prices	26.8	29.7	30.6
Depreciation	8.3	9.0	9.5
Net value added at market prices	18.5	20.7	21.3

Note: For more information on the agricultural account in 1993 and 1994, see Appendix 1.

Source: VUZE, CSO.

Although gross value added in agriculture has increased from 26.8% in 1992 to 30.6% in 1994 (Table 7), this remains low by comparison with EU countries.

## 2.2. Agricultural production

Of the total agricultural area of 4.28 million ha in 1995, about three quarters is arable land, about 20% permanent grassland, and the balance is accounted for by permanent crops (Graph 1).

### 2.2.1. Crop production

Arable land accounts for about 75% of the total agricultural area in the Czech Republic (Graph 2). In 1994, this amounted to 3 158 million ha, a total area that has not altered significantly since 1989 (since 1989, the arable area has decreased by 2.3%: see also Appendix 2).

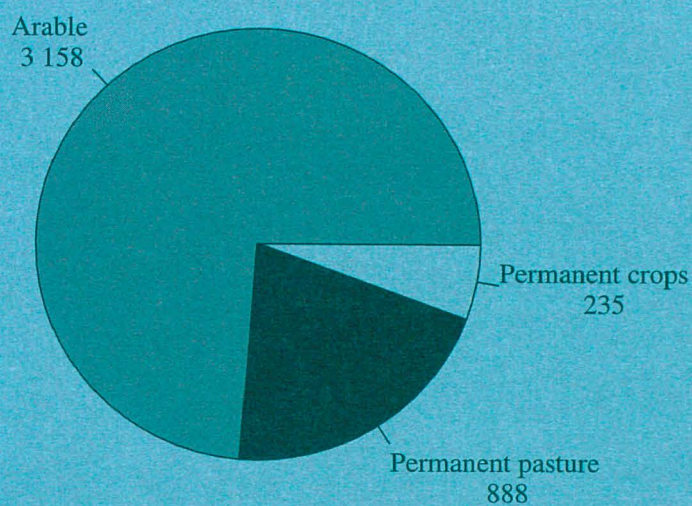
Some 55% of the arable land was planted with cereals in 1994 (mostly wheat and barley), with fodder crops (mainly maize silage), oilseeds, sugar beet and potatoes accounting for 29, 8, 2.9 and 2.6% respectively of the total arable area. Since 1989, the areas of cereals and oilseeds have increased (by 6 and 104% respectively) as there has been a shift to these crops from fodder, sugar beet and potatoes.

In terms of production, the most important crops are cereals (see Appendix 2) of which wheat and barley are the main crops (Graph 3) with a considerable proportion of the barley (about 20%) being malting varieties used in beer production and export.

With the exception of 1992 and 1993, when drought adversely affected production, Czech cereal output has been greater than consumption, which has declined by 17% since 1991 mainly due to reduced feed use in the livestock sector (see Appendix 2).



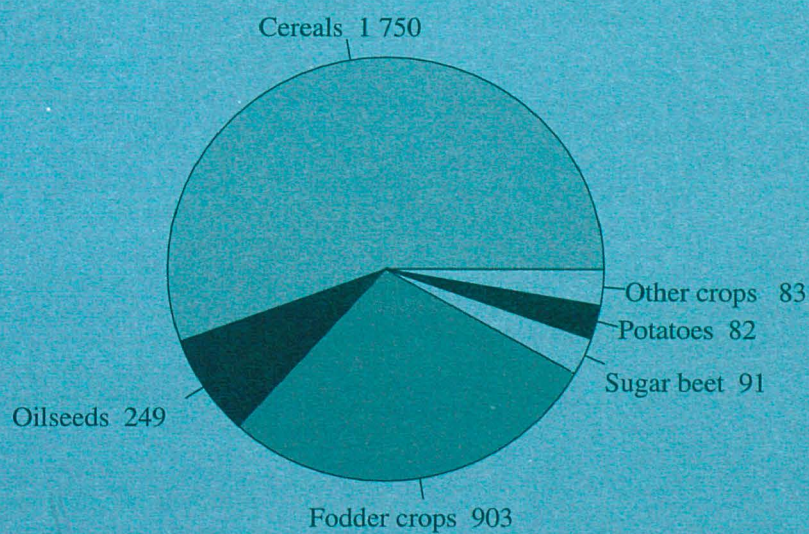
GRAPH 1: Czech agricultural land use, 1995 (1 000 ha)



Base: 4 281 (1 000 ha)

Source: Puda, *Commodity Outlook* and Czech Statistical Yearbook.

GRAPH 2: Czech arable land usage by main crops, 1994 (1 000 ha)

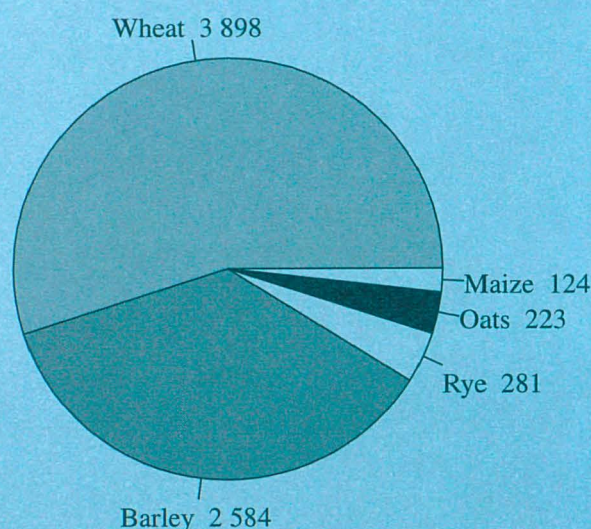


Base: 3 154 (1 000 ha)

Source: CSO, Ministry of Agriculture, VUZE.



GRAPH 3: Cereal production by crop, 1994 (1 000 tonnes)



Source: CSO, VUZE.

The oilseed rape area and production level has expanded rapidly since 1990 and mainly services domestic demand for vegetable fats and oils. About a fifth of the rapeseed crop is planted for non-food uses and this particular market is expected to increase mainly as a result of government investment subsidies for establishing processing plants.

In contrast to the expanding production of cereals and oilseeds, sugar beet and potato production has decreased by 28 and 44% respectively since 1989 (see Appendix 2). For both crops the decline largely reflects decreasing demand in the Czech Republic (for potatoes especially in the livestock sector where it has traditionally been used as a feed).

Overall, the share of crop products in gross agricultural output has increased since 1989. Whilst total gross agricultural output (GAO) decreased by 28% between 1989 and 1994, crop output fell by 21% over the same period, increasing its share of GAO from 41 to 45% (see Appendix 2).

### 2.2.2. Livestock production

Whereas the arable area decreased little over the 1989-94 period, the Czech livestock sector experienced significant contraction in numbers (Table 8). Cattle and sheep numbers have decreased by the greatest value (42 and 51%

respectively), with pigs and poultry affected less (18% reduction in numbers for both sectors).

In the milk sector, production has decreased by 39% since 1989 (see Appendix 2) but is still over 500 million litres higher than domestic consumption levels. In the beef/veal sector production levels were initially maintained after the economic reforms were introduced as herds were liquidated by new owners. However, since 1992, the production of beef has decreased by almost 50% and is now at a level lower than domestic consumption (see Appendix 2).

In the pig meat sector, production levels initially remained at 0.7 to 0.8 million tonnes in the early years of transition; however, since 1993, production has decreased by about 26%, and whereas a few years ago the Czech Republic was a net exporter of pig meat, it is now producing at a level lower than consumption.

In the poultry sector, poultry meat production has broadly followed trends in consumption. After initial increases in production (and consumption) as flocks were liquidated in the early 1990s, production fell from about 0.2 million to 0.15 million tonnes. However, since 1993, production has increased slightly to about 0.175 million tonnes (see Appendix 2). Egg



**Table 8**  
Czech livestock numbers, 1989-95

	1989	1990	1991	1992	1993	1994	1995
Cattle	3 481	3 506	3 360	2 950	2 510	2 161	2 031
of which cows	1 247	1 236	1 195	1 036	975	830	768
Pigs	4 685	4 790	4 569	4 609	4 599	4 000	3 862
Poultry	32 479	31 981	33 278	30 756	28 219	26 800	26 592
Sheep	399	430	429	342	254	196	:

Source: CSO, VUZE.

production throughout the last five years has remained fairly stable.

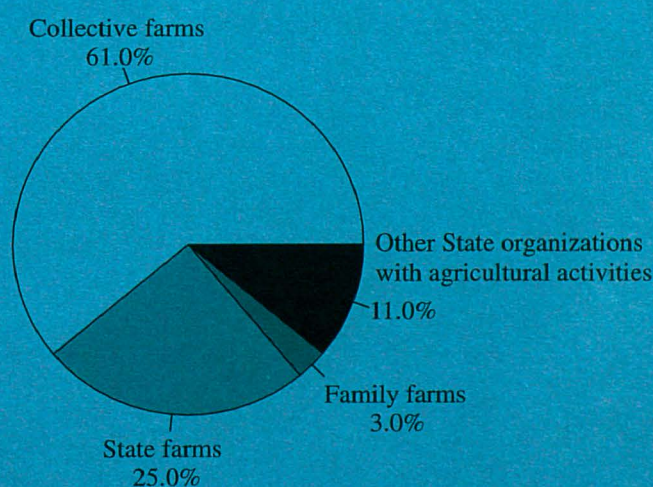
Overall, the GAO in the livestock sector decreased by 32% between 1989 and 1994. This is greater than both the decrease in the arable sector and for the entire agricultural sector. In terms of its share of total GAO, the livestock sector's share decreased from 59% in 1989 to 55% in 1994.

### 2.3. Ownership patterns

The pre-1989 pattern of farm ownership in the Czech Republic was as follows (Graph 4).

*State farms.* These were run by the State through centrally appointed managers and essentially comprised land

**GRAPH 4: Czech farm ownership pattern, 1989**



Base: 4 287 (1 000 ha)

Source: Ratinger, *Report on Agriculture*, 1995.



expropriated in 1948 from those expelled (mostly German former owners) and land converted from operation as collectives (i.e. failed collectives: see below).

*Collective farms.* These had their origins in the 1950s when farmers/farms were in effect forced to group activities together and to operate collectively. All land, buildings, machinery and other assets held by individuals at the time became collectively owned, operated and managed by the members. Those who worked on collective farms included both members and non-member employees. New employees usually (but not always) gained member status on joining whilst those who left usually lost their membership status. Nevertheless, there were no clear rules or legal status in respect of asset ownership except that those who were original members kept title to the original land and assets at time of collectivization (i.e. whilst title to the original assets was clear, title to all subsequent assets obtained by collectives was not clarified);

During the 1980s, this type of farm operation (which accounted for 61% of all Czech agricultural land) was given considerable freedom to operate as determined by management. Consequently, most collectives tended to pursue private (collective) profit goals for which the benefits and profit were distributed amongst members.

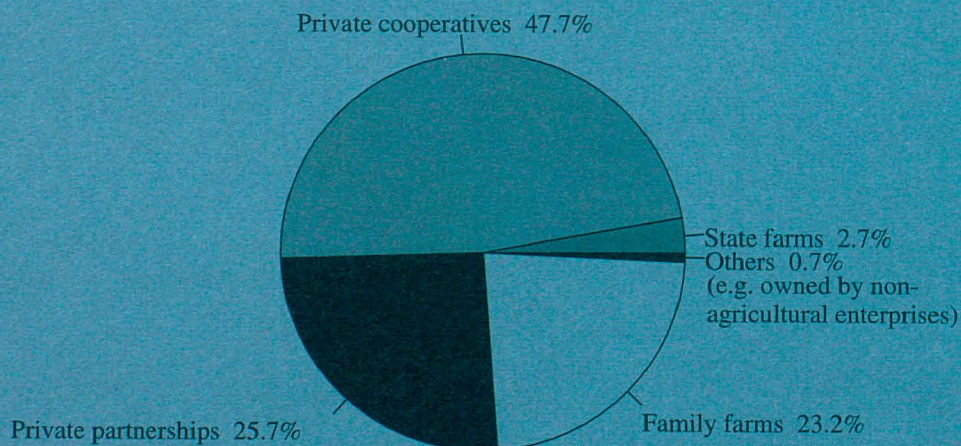
*Family farms.* These accounted for only 3% of the area farmed and were essentially areas of land not taken into State control in the 1950s. These were commonly located in marginal mountainous regions (and often not considered worthwhile for restitution) and small, private household plots.

*Other State Organizations.* These operated in the same way as State farms and included State companies owning land on which agricultural activities took place, schools and municipalities.

Following the break-up of the former Communist system there have been considerable changes to the land ownership patterns in the Czech Republic. The main objective of Czech policy reforms has been to re-establish private ownership with minimal disruption to farm structure through a combination of restitution and compensation to former owners. Graph 5 shows the ownership structure in 1994. Its main features include the following.

*Private cooperatives.* These cover nearly 50% of total Czech agricultural land. This form of ownership mainly arises from the former collective farms which were transformed into private cooperatives in 1992 on the basis of the Collective Farm Transformation Law (this allowed for the 'conversion' of

GRAPH 5: Czech agricultural land ownership patterns, 1994



Base: 4 287 (1 000 ha)

Note: The 767 000 ha held by the land fund awaiting privatization are included within family farms, private partnerships and cooperatives according to the nature of the person/organization currently renting the land.

Source: Ratering, *Report on agriculture*, 1995.



collective farms to farmer cooperatives with members given the choice of remaining within a new cooperative entity or farming separately as independent, private farmers). The basis for establishing ownership of assets held by the collective farms was, as indicated above, based on the original owners of land and assets in the 1940s/early 1950s (making the process relatively straightforward). Title/ownership of assets such as buildings, machinery and land acquired after collectivization was however, more difficult to define. The completion of this restitution process is not yet complete and is expected to take until 2000 before it is finished.

Although most of the land operated by former collectives has been restored to original owners, the majority have chosen to keep their land within cooperatives with only 11% of former collectivized land having been withdrawn from the use of cooperatives. In effect, the new owners have chosen to lease their land/assets back to cooperatives.

A number of reasons have contributed to this including: many of the plots given to individuals were too small to start viable farming activities; insecurity and risk associated with farming privately as against the security offered by cooperatives; a lack of entrepreneurship among the new owners and a lack of financial resources with which to develop private farms.

*State farms.* Whilst the collective farm transformation legislation allowed for the structure of cooperatives to be largely maintained, the position for State farms differed significantly, with most having been privatized by 1994 (all non-land assets had been transferred into private ownership together with some land, where clear ownership claims have allowed for restitution). Where restitution claims have not yet been resolved, the land has been transferred to the Land Fund of the Czech Republic for administration (a government institution established to complete the privatization process for State-owned assets). This institution has tended to rent all land under its control, mostly to potential owners. In 1994, the total area under the control of the Land Fund was 881 000 ha, of which 767 000 ha were allocated for privatization. There are no current plans for privatizing the balance of 114 000 ha (2.7% of the total agricultural area).

*Private partnerships, family farms and companies.* Together these ownership categories account for 49% of the total Czech agricultural area. This category mainly comprises private owners who have received land restored from State farms and those who have withdrawn their cooperative (formerly collective) farm interest in order to farm on their own. Within this category of ownership (a total of 2.09 million ha), 50% are in the form of partnerships, 47% are family farms (including part-time, household plots) and 3% are joint stock companies.

Overall, there are estimated to be about 3.5 million owners of land in the Czech Republic of which about 2.1 million are probably drawn from the urban population and about 1.4

million from the rural population (the total rural population is about 2.2 million). In terms of area, urban dwellers probably account for about 40% of the total agricultural area so far privatized (i.e. 40% of 3.4 million ha which equals 1.36 million ha). Almost all of the remaining 767 000 ha earmarked for privatization is expected to be restored to rural dwellers.

Czech government policy towards any ownership types has not shown any preferences for one business form or another, although as indicated above, the legislation relating to the transformation of collectives into cooperatives favoured owners remaining in agriculture (either via a cooperative or some other form of business type) rather than withdrawing land from agriculture. Those deciding not to use the land for agriculture are required to repay the value of any privatization asset share over seven years (i.e. the value of the administrative price of the land).

## 2.4. Structure of holdings

A breakdown of the structure of holdings in the Czech Republic is shown in Table 9. This shows that the vast majority of landowners (78%) in the Czech Republic own plots of less than 10 ha. However, in terms of area, the majority of the total agricultural area (68%) is accounted for by farm units over 1 000 ha in size, and farmed by only 1 502 enterprises.

By type of ownership, private cooperatives account for the vast majority of the larger farms, with an average size of 1 430 ha (Table 10). The remaining State farms have an average size of nearly 500 ha, farming companies/partnerships about 830 ha with the average size of family farms being about 16 ha. Thus, most of the former State farm land that has been restored has been in plots of under 20 ha.

Since the beginning of the reform process in the early 1990s, the average size of holdings has tended to decline. The average farm size has fallen from 846 ha (1989) to 67 ha in 1994, with the number of holdings increasing from 4 403 to 63 662 over the same period. This substantial change in average farm size largely reflects the polarized nature of farm structure in the Czech Republic before the economic reforms of the 1990s, when large State-owned farms and collectives dominated. With the restitution process the degree of polarization is decreasing, with the large State farms being broken up into much smaller pieces of land.

For cooperatives, there has been a slow decline in the average size of holding as the number of members withdrawing to farm alone or set up other forms of farming businesses has increased. For example in 1993, the average cooperative area was 1 587 ha; this fell to 1 430 ha in 1994. In contrast, the average size of holdings for farming partnerships, companies and family farms has increased (Table 11).

**Table 9**

**Structure of holdings by size category, 1994**

Size category (ha)	No of holdings	% share of number of holdings	Area (ha)	% of total area
less than 1	32 492	51		
1-10	17 284	27	813 390	19
10-30	5 949	9		
30-50	2 248	4		
50-100	1 424	2		
100-500	1 985	3	556 530	13
500-1 000	778	1		
over 1 000	1 502	2	2 911 080	68
Total	63 662	100	4 281 000	100

Source: Ministry of Agriculture.

**Table 10**

**Structure of farms by type of ownership, 1994**

	No of enterprises	Total area (ha)	Average size (ha)
State farms	229	114 042	498
Collective farms	nil	nil	nil
Family farms	60 642	993 001	16.37
Private cooperatives	1 429	2 043 470	1 430
Companies, partnerships and other	1 362	1 130 487	830
Total	63 662	4 281 000	67.24

Source: Report on Agriculture, 1995 and Ratering, 1995.

**Table 11**

**Changes in the average size of holding by ownership type, 1989-94**

	State farm	Collective	Cooperative	Farming partnership	Farming companies	Family farms
1989	6 261	2 561	:	:	:	4
1991	3 558	2 191	:	:	:	10
1993	2 168	:	1 587	726	567	15
1994	498	:	1 430	840	820	16

Source: Ratering, Report on agriculture, 1995.

## 2.5. Land tenure

Table 12 illustrates the breakdown of the land market in Czech agriculture. This shows that renting dominates, accounting for 85% of the total utilizable agricultural area (TUAA). Land in agricultural production and used by its owners accounts for only 12% of the total TUAA and is predominantly found amongst family farms, although about 20 and 12% respectively of farming company and partnership land is farmed by the owners. Consequently, even where land has been restored to private owners, most owners have chosen to rent out the land to others for farming.

## 2.6. The land market

As indicated in the section above, renting currently dominates the Czech land market, with only 12% of the current TUAA being farmed by the owners of the land.

The market for land in the Czech agricultural sector is still in an immature state of development and is heavily influenced by the government. There is no transparent free market for land with the only prices quoted being the administrative prices, set by the government as a basis for valuing State farm land restored to private owners. The administrative prices have their

**Table 12**

### Land tenure in Czech agriculture, 1994

Ownership	<i>hectares</i>			
	Privately owned and operated	% total agricultural area	Rented	% total agricultural area
State farms	nil	0	114 042	2.7
Collective farms	0	0	0	0
Private cooperatives	0	0	2 043 470	47.7
Farming companies	11 969	0.3	47 716	1.1
Partnerships	124 622	2.9	914 191	21.4
Family farms	381 488	8.9	611 513	14.3
Other (including non-agricultural enterprises)	nil	0	12 796	0.2
Total	518 079	12.1	3 743 728	87.4

Note: The remaining 19 193 ha (total agricultural land area of 4 281 000 ha) was not rented out by the State sector.

Source: Ratinger, Report on agriculture, 1995.

**Table 13**

### Czech administrative prices for land, 1994

Administrative price band (ECU/ha)	Average price in band (ECU/ha)	Area in band (ha)	% of total agricultural land	Arable land in each band (ha)	% of arable area	% of total agricultural area
less than 590	543	13 059	0.4	3 947	0.1	0.1
590-880	775	552 549	12.9	321 768	10.2	7.5
880-1 170	1 034	1 100 491	25.7	744 696	23.6	17.4
1 170-1 470	1 286	975 621	22.8	715 778	22.7	16.7
1 470-1 760	1 589	191 448	4.5	154 756	4.9	3.6
1 760-2 060	1 904	424 631	9.9	347 422	11.0	8.1
2 060-2 350	2 211	472 913	11.0	391 824	12.4	9.1
over 2 350	2 496	550 237	12.8	477 977	15.1	11.3
Total	1 486	4 280 949	100	3 158 168	100	73.8

Source: Ratinger, Report on agriculture, 1995.

origins in Decree 178/1994 from the Ministry of Finance and are based on land quality (reflecting production potential and factors such as soil quality). Table 13 shows the breakdown of average administrative prices in 1994, the administrative price bands and the area of land in each price band.

The key features of Table 13 are:

- (i) the average administrative land price is ECU 1 486/ha within a range of ECU 543/ha for the poorest quality land to ECU 2 496/ha for the best quality land;
- (ii) land administratively valued at over ECU 2 060/ha accounts for about 24% of the total agricultural area and land valued at over ECU 1 170/ha accounts for 61% of the total agricultural area;
- (iii) arable land valued over ECU 2 060/ha accounts for 20.4% of the total agricultural area.

There are no published data relating to the extent to which agricultural land is traded in the Czech Republic. The administrative prices referred to in effect set the price for restitution or compensation to private owners. Since the majority of land in the Czech Republic has been either restored and/or converted from collectives to cooperatives, the use of administrative land prices for setting compensation levels has not applied to a large area of land.

There are also no empirical data relating to the extent to which land is traded. Anecdotal evidence suggests that some (very small) areas of land are, however, being traded at prices significantly above the administrative price levels (two to three times higher) mainly for household/garden plots, as is higher quality arable land often located near cities such as Brno and Prague.

Like the market for agricultural land, the rental market is also extremely immature and heavily influenced by administrative (government-influenced) prices. The primary influence on the rental sector has been the stipulation in the cooperative transformation legislation that rents paid by cooperatives to members and other landowners are recommended to be at least equal to 1% of the administrative price for each plot of land. Out of the rented land currently used in agricultural production (about 85% of the total agricultural area) about 80% of this area (about 2.9 million ha) is estimated to be rented out at prices slightly above 1% of the administrative price. In addition, the lessee also pays as rent (by taking responsibility for paying) any land tax due (which is 0.75% of the administrative price of land). There are however, no current (1995) empirical studies that have examined the land rental market in the Czech Republic.

Overall, the land market does not currently operate in the same way as occurs in EU countries (i.e. there is no established

market). The market remains highly influenced by governmental/institutional factors:

- (i) about 900 000 ha or about 21% of the total agricultural area remains in State ownership or is awaiting privatization;
- (ii) there is a general lack of liquidity and capital in the sector, especially as banks are currently reluctant to accept land as collateral for loans;
- (iii) information and market transparency relating to returns per hectare is limited. There are no current empirical studies examining returns to land compared with land rents although if average rents (estimated by the Report on Agriculture, 1995, to be about ECU 21/ha) are compared with an estimate of the average return per ha of ECU -9.4/ha (*source*: Report on Agriculture, 1995) it is clear that currently a considerable part of Czech agriculture does not realize sufficient returns from agriculture alone to cover costs of production, even without taking into consideration land rents and tax. The reader should, however, note that the data referred to above are average values and probably hide considerable variations within the sector;
- (iv) the administratively influenced rent levels are widely perceived to be relatively high (this is not surprising, bearing in mind the average return figures referred to above);
- (v) land ownership is a relatively new experience for many people. As a result, they are not aware of the potential value of land as a tradeable commodity;
- (vi) as current returns per hectare for many are negative, this discourages interest in land renting and buying;
- (v) there are still a number of outstanding restitution claims, some cases in which it is difficult to identify precise ownership.

## 2.7. The market for and use of labour

The key features relating to the use of labour in Czech agriculture since economic reforms began are as follows (Table 14).

- (i) There has been a virtual halving in the numbers employed in agriculture, from about 533 000 in 1989 to 246 000 in 1994.<sup>1</sup> As the total agricultural area has declined little over the same period, there has also been a halving in average use of labour per hectare.
- (ii) The average use of labour per hectare is lowest for family farms. This is mainly attributed to the low level of animal production on family farms relative to other ownership types and to their better utilization of labour than cooperatives, partnerships and State farms which are perceived to be placing greater emphasis on broad social

welfare objectives such as maintaining employment than profit-related objectives.

The changes in the use of labour in Czech agriculture have been made against a background of a relatively low level of general unemployment in the economy and the attraction of non-agricultural occupations with higher wage levels (Table 15).

Traditionally agricultural wages were higher than wages in other sectors due to political preference given to the sector under the former Communist regime (e.g. in 1989 the average wage in agriculture was Kcs 41 460 (about ECU 1 810) compared with Kcs 28 040 (ECU 1 224) for the economy as a whole. However, by 1993 this relationship had changed in favour of non-agricultural wages (average agricultural wage

<sup>1</sup> About 20% of this decrease can probably be attributed to statistical reclassification and redefinition.

**Table 14**

**Key features relating to use of labour in Czech agriculture, 1989-94**

	Agricultural labour force (including owners) (numbers)		Average No of labour/ha 1989	Average No of labour/ha 1994
	1989	1994		
State farms	127 865	5 300	0.12	0.046
Collectives	404 992	0	0.15	:
Private coops	nil	146 450	:	0.07
Farming companies	nil	4 061	:	0.06
Partnerships	nil	58 831	:	0.06
Family farms	200	31 217	0.16	0.031
Total	533 057	245 859	0.12	0.06

Note: Family farms 1994 includes 13 360 hired employees.

Source: Ratinger, Report on agriculture, 1995.

**Table 15**

**Average agricultural wages, 1989-94**

	Average agricultural wage kcs/year	Index (current)	Real index	Index: industrial wages	Real index: industrial wages
1989	41 460	100	100	100	100
1990	44 304	106.9	97.2	102.8	93.5
1991	45 492	109.7	63.7	120.6	70.0
1992	50 880	122.7	64.2	143.7	75.1
1993	61 980	149.5	64.7	176.7	76.5
1994	70 752	170.7	67.1	206.5	81.2

Source: Stikova, 1995; Divila, 1995.



was Kcs 61 980) (ECU 1 817) compared with Kcs 68 400 (ECU 2 005) for the non-agricultural sector). This is further illustrated by the trends in wages between the sectors (Table 15).

Whilst agricultural wages rose by over 70% in the period 1989-94, in real terms they decreased by a third (there has, however, been a 4% real increase since 1991). This compares with a 106% increase in nominal industrial wages and a 19% decrease in real industrial wages over the same period.

Although the above data suggest that much of the shedding of agricultural labour may be partially attributable to the relatively higher level of wages in non-agricultural sectors, the scope for movement out of agriculture to other occupations is limited in some regions. In particular, those located in less favoured areas (those with average income levels below 75% of the national average) have not been able to find alternative employment, resulting in relatively high levels of either real unemployment or underemployment (i.e. staff retained within agricultural enterprises even though their activity and contribution is limited).

## 2.8. Agricultural income

Between 1989 and 1994, the level of agricultural household income in the Czech Republic increased by 77% in nominal terms from Kcs 80 600 in 1989 to Kcs 142 650 in 1994. However, in real terms, the level of income decreased by 30%. This is similar to the real decrease in agricultural wages (33%) but greater than the decrease in non-agricultural wages (19%) referred to in subsection 2.7 above. Over the same period, the proportion of total agricultural income accounted for by non-

agricultural sources of income increased from 24.3% in 1989 to 28.6% in 1994 (Table 17).

Overall, Czech agriculture is currently considered to be unprofitable (Table 18) with more than half of the total losses in the sector being concentrated in the remaining State farms (i.e. the State farms are the most unprofitable elements of the sector and account for over half of the total losses in the sector).

The real changes in agricultural income and wages referred to illustrate how the agricultural sector has suffered greater real decreases in income levels than most other sectors of the economy and partly explains why there has been a movement of labour out of the sector. However, it should be recognized that the ability of surplus labour in agriculture to find alternative employment has varied between regions (those in less-favoured areas have been faced with little alternative employment). The only alternative facing many in agriculture and rural areas has, therefore, been to seek additional and alternative jobs (or to set up non-agricultural businesses) outside agriculture. The evidence of Table 17 suggests that some have chosen this strategy. The reader should note that there is also very little empirical information relating to the extent to which part-time farming is practised. However, it is likely that part-time farming is concentrated amongst farms under 10 ha in size, and in family farms. Agricultural income is also likely to provide for only part of the total household income in households where an owner of land has chosen to keep the land within a cooperative farming enterprise. In such cases, the landowner is often working full-time in agriculture with the cooperative, but other members of the family may be involved in non-farming activities.

**Table 16**

### Agricultural income, 1989-94

	Total household income		Real income (Kcs)
	Kcs	ECU	
1989	80 602.5	3 520	80 602
1990	87 978	2 410	80 272
1991	93 749	2 561	56 373
1992	108 193	3 173	60 988
1993	125 941	3 693	63 542
1994	142 650	4 183	68 516
% change (1989-94)	+ 77%	+ 19%	- 15%

Source: Stikova 1995; Divila 1995.

**Table 17****Agricultural household income by source, 1989-94**

	% agricultural activity	% non-agricultural activity
1989	75.7	24.3
1990	73.7	26.3
1991	70.3	29.7
1992	69.3	30.7
1993	71.3	28.7
1994	71.4	28.6

Source: Stikova 1995; Divila 1995.

**Table 18****Agricultural account for the Czech Republic (extract), 1992-94**

	<i>Kcs billion</i>		
	1992	1993	1994
Net value added at factor cost	18.1	19.7	21.4
Salaries/wages	23.1	22.1	22.0
Rents	0.9	1.2	1.6
Interest	3.9	4.3	4.5
Profit/loss	- 9.8	- 7.9	- 6.7

Source: CSO, VUZE.

**2.9. Labour migration**

Although subsection 2.7 above refers to a virtual 50% reduction in the Czech agricultural labour force since 1990, there is little empirical data or information about population migration in the country. Over the last 10 years, it is estimated that about 0.5 million inhabitants moved out of rural areas to urban areas. However, the primary reason for this migration is

perceived to have been government investment in the provision of urban housing (which stopped in 1991) and a general long-term trend, especially amongst younger elements of the population, in favour of urban rather than rural life. The effect of reduced levels of agricultural employment is perceived to have had a modest impact on the rural-urban migration of population, although no empirical studies have been undertaken to examine the issue.



### 3. Poland

#### 3.1. The position of agriculture in the Polish economy

In 1994, agriculture in Poland contributed to about 6.3% of total GDP (Table 19). This represents an important but declining share, as the sector's contribution to GDP has fallen from 8.4% in 1990. During the first few years of economic transition from a command to a more market-oriented economy, Polish GDP initially decreased until 1991 after which the economy moved into recovery. In the agricultural sector, gross output, whilst variable has tended to decrease by a greater amount than general GDP over the same period, with the low point in production occurring a year later than GDP in 1992. Production in subsequent years has exhibited a degree of recovery although droughts in the summers of 1992 and 1994 adversely affected gross agricultural output in both of these years. Overall, when compared with other sectors in the Polish economy and total GDP, the decline has been more marked in agriculture (Table 20).

The supply balance position/degree of self-sufficiency of Poland has also changed in recent years. In the late 1970s and during most of the 1980s Poland was a net importer of food and agricultural products. By the end of the 1980s it briefly became a net exporter of food and agricultural products, but by 1993 it had reverted back to becoming a net importer.

A contributory factor to the poor relative performance in gross agricultural product (GAP) terms has been the slower rate of growth in agricultural prices compared with the general consumer price index (CPI) and agricultural input prices (Graph 6).

The share of food products in total consumption in Poland is high by comparison with EU countries (although it is declining in relative importance). For example, in 1986 food expenditure accounted for 38% of total private consumption, whilst in 1992 it accounted for 29% of total consumption.

Agriculture accounts for the employment of about one quarter of the total Polish workforce, which when compared with the sector's contribution to GDP (6.3%), illustrates that it is a sector with a relatively low level of labour productivity.

**Table 19**

**Important economic indicators in the Polish economy, 1990-95**

	1990	1991	1992	1993	1994	1995 <sup>1</sup>
% change in real GDP	- 11.6	- 7.0	+ 2.6	+ 3.8	+ 5.0	+ 5.0
% change in consumer prices	+ 618	+ 71	+ 42	+ 35	+ 32	+ 25
% unemployed	6.3	11.8	13.6	16.4	16.1	16.0
Exchange rate new Zl: ECU	12.055	13.07	17.67	21.22	26.9	
% share of GDP accounted for by agriculture <sup>2</sup>	8.4	6.9	6.9	6.8	6.3	

<sup>1</sup> Estimate.

<sup>2</sup> Including forestry.

Source: GUS, OECD, DG II, European Commission.

**Table 20**

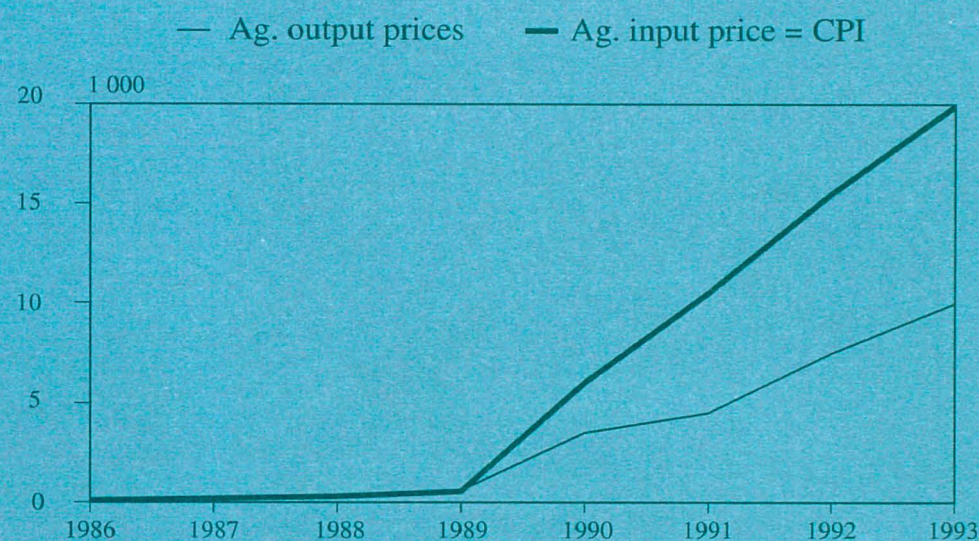
**Indices of Polish gross domestic product (GDP) and gross agricultural product (GAP)**

Year	GDP	GAP
1988	100.0	100.0
1989	100.2	101.5
1990	88.4	97.8
1991	93.0	98.4
1992	102.6	87.2
1993	103.8	106.8
1994	105.0 <sup>1</sup>	90.7

<sup>1</sup> Estimate.

Source: GUS 1993, 1994, 1995.

GRAPH 6: Input and output price indexes



Source: GUS 1993, 1994.

Table 21

## Indices of GAP by main types of enterprise, 1988-94

Year	State farms	Cooperatives	Private farms
1988	100.0	100.0	100.0
1989	103.5	102.6	101.0
1990	99.8	100.9	97.2
1991	90.6	98.2	100.2
1992	67.2	77.1	91.8
1993	67.4	90.7	110.6
1994	:	:	92.1

Source: GUS.

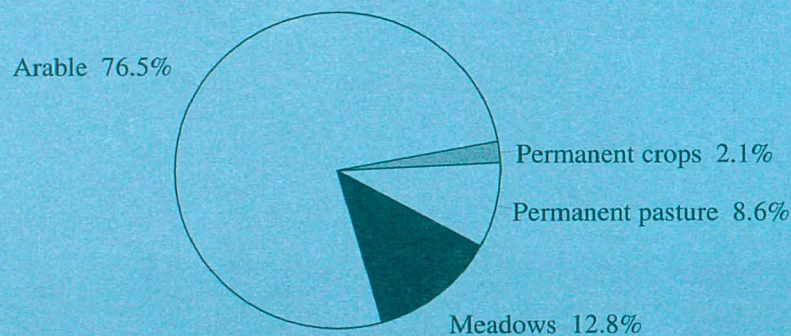
Politically, agriculture is also an important sector. Farmers are represented in parliament by the Polish Peasant Party with 131 seats (out of the total 460) and it is the second largest party in parliament after the post-Communists (SLD — Alliance for Democratic Left). Both parties have been involved in government since December 1993 and it is evident that farmers

have a strong and significant influence over policy direction in Poland.

State farms and cooperatives experienced the largest decreases in gross agricultural output due mainly to the elimination of a number of direct subsidies to the agricultural sector (Table 21).



**GRAPH 7: Polish agricultural land use, 1994**



Base: 18 700 (1 000 ha)  
 Source: GUS, DG VI European Commission.

### 3.2. Agricultural production

The total utilizable agricultural area in Poland in 1994 was 18.7 million ha. Within this, arable land is the most important (14.3 million ha), followed by meadows, permanent pasture and permanent crops with 2.4, 1.6 and 0.4 million ha respectively (Graph 7).

#### 3.2.1. Land use

The share of total agricultural land use accounted for by arable crops has remained fairly stable since 1989, with the total arable area decreasing by only 0.8% between 1989 and 1994 (Table 22).

Cereals account for 59% of agricultural land use (mostly wheat, rye and barley), with potatoes being the other main crop grown (accounting for 12% of arable land use). Since 1989, the cereals and pulses areas have increased by 2.1% each whilst the areas of sugar beet, oilseed rape and potatoes have decreased by 5.2, 35.1 and 8.7% respectively.

In terms of gross agricultural production, cereals have been the second most important sector accounting for 15 to 19% of GAP in recent years (pig meat is the largest contributor to GAP with

20%). Of the other arable sectors, potatoes account for about 10% of GAP, and oilseed rape about 5% of GAP. Overall, the crop sector's share of GAP in 1994 was about 58%. This is a similar level to the 1989 share but higher than the share in 1990-93 when a significant proportion of the livestock sector was being liquidated.

#### 3.2.2. Crop production

Table 23 summarizes recent trends in crop production in Poland. A key feature of recent production has been significant annual variations. This can be attributed mostly to:

- (i) price instability (for both inputs and output) in the period 1990-94;
- (ii) bad weather (1992 harvest);
- (iii) yield variations due to bad weather (1992) and reductions in the use of inputs such as fertilizers.

A summary of recent yield variations is shown in Table 24.

**Table 22****Polish arable land use, 1989-94**

	<i>1 000 ha</i>					
	1989	1990	1991	1992	1993	1994
Cereals	8 377	8 531	8 716	8 321	8 506	8 481
Sugar beet	423	440	361	376	400	400
Oilseed rape	570	500	468	417	348	370
Potatoes	1 859	1 835	1 733	1 757	1 761	1 697
Pulses	386	318	330	335	333	394
Other crops	2 799	2 764	2 752	3 131	2 957	2 958
Total	14 414	14 388	14 360	14 337	14 305	14 300

Source: FAO, DG VI European Commission.

**Table 23****Crop production, 1986/90 and 1991-94**

	<i>1 000 tonnes</i>				
Product	1986/90 annual average	1991	1992	1993	1994
Cereals	26 114	27 811	19 962	23 417	21 763
wheat	8 103	9 270	7 368	8 243	7 658
rye	6 330	5 900	3 981	4 992	5 300
barley	4 135	4 257	2 819	3 255	2 686
Legumes	555	680	380	411	215
Potatoes	36 140	29 038	23 388	36 270	23 058
Sugar beet	14 674	11 412	11 052	15 621	11 676
Oilseed rape	1 306	1 057	769	606	777

Source: GUS 1995.

**Table 24****Yields: 1986/90 and 1991-94**

	<i>tonnes per hectare</i>				
Product	1986/90	1991	1992	1993	1994
Cereals	3.11	3.19	2.4	2.75	2.57
wheat	3.75	3.8	3.06	3.33	3.18
rye	2.57	2.58	1.96	2.26	2.18
barley	3.32	3.44	2.35	2.79	2.6
Legumes	1.68	2.06	1.08	1.89	1.35
Potatoes	19	16.8	13.3	20.6	13.6
Sugar beet	34.6	31.6	29.4	39.2	29.2
Oilseed rape	2.5	2.19	1.76	1.67	1.95

Source: GUS 1995a.

**Table 25****Polish livestock numbers, 1989-94**

	1989	1990	1991	1992	1993	1994	% change 1989-94
Cattle	10 391	10 049	9 024	8 029	7 596	7 270	- 30
of which cows	4 885	4 878	4 707	4 363	4 108	3 866	- 21
Pigs	18 835	19 464	19 737	20 725	21 058	17 422	- 7
Poultry	66 188	71 512	61 307	59 443	54 680	53 330	- 19
Sheep	4 409	4 158	3 234	1 870	1 268	890	- 80

Source: DG VI, European Commission, GUS.

**3.2.3. Livestock and animal products**

Whilst the arable area has remained fairly constant over the last five years, the Polish livestock sector has experienced considerable decline (Table 25). Sheep and cattle numbers have decreased by the greatest amount (80 and 30% respectively) with pigs and poultry least affected; in fact pigs and poultry numbers initially increased in the early 1990s.

The production of beef in Poland peaked at 725 000 tonnes in 1990, representing the highest production figure over the period 1980-93. However, since 1990, production has decreased by 38% to 450 000 tonnes in 1994. This mainly reflects initial sales of animals restored to private ownership in 1990, followed by a decline in output in line with significant decreases in cattle prices and the shake out in cattle numbers in the dairy sector.

In contrast to beef output, pig production has remained fairly stable. Production has remained around the 1.9 to 2.0 million tonne level since 1990. This has occurred despite significant declines in the real prices for pig meat, although pig farmers

have to some extent been cushioned by cuts in feed prices which have helped to maintain profitability levels at a level higher than that for cattle. For 1994, however, production is expected to decrease significantly.

Poultry production has also remained relatively stable over the last five years fluctuating between 305 000 (1993) and 362 000 tonnes (1991).

Milk production fell 27% between 1989 and 1994 (Table 26). This has been mainly due to falling real prices for milk. This has led to declining profitability and a large number of dairy cows have been slaughtered.

**3.3. Ownership patterns**

Whereas in most of the other Central and East European Countries, nearly all agricultural land used to be in the hands of collectives and State farms, Poland has been a major exception,

**Table 26****Polish livestock production, 1989-94**

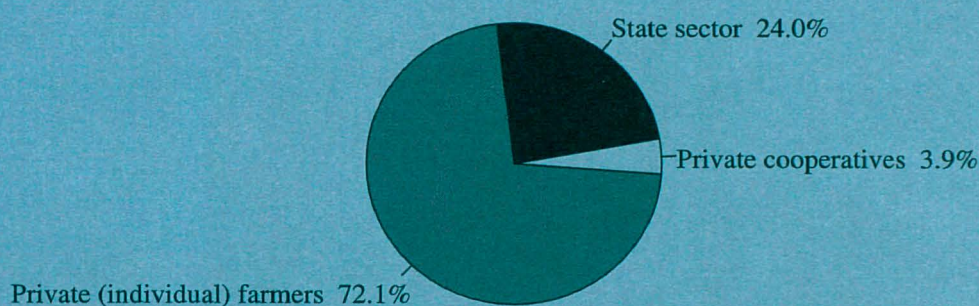
	1989	1990	1991	1992	1993	1994
Beef	637	725	662	544	480	450
Pig meat	1 854	1 854	1 947	2 036	1 903	1 609
Poultry meat	362	332	333	322	305	335
Milk	16 404	15 832	14 442	13 153	12 639	11 920

1994 = estimate.

Source: DG VI, European Commission, GUS 1995.



GRAPH 8: Polish farm ownership pattern, 1989



Base: 18 914 (1 000) ha.  
Source: GUS.

with the private sector dominating production and ownership under the Communist system (Graph 8).

Prior to the beginning of the economic transition in 1989, private ownership accounted for 76% of the total agricultural land area (over 14.3 million ha), with about 4.5 million ha (24% of the total) under State control. In relation to the number of farms, private farms accounted for over 99% of the total (2.143 million out of a total 2.146 million in 1989). This ownership pattern has remained largely unaltered since 1989 with no significant changes in the pattern of ownership by 1994; the proportion of the total agricultural area accounted for by private, individual farmers and companies has increased to 91%, as the land privatization programme, started at the beginning of 1993, has begun to take effect with the passing of the Land Privatization Act (Table 27). Out of the nearly 2 million farms in Poland, the majority are estimated to be owned by people who live on, and derive income from, their holdings with less than 5% of all holdings (and less than 1% of the total area) estimated to be owned by people who do not farm them in either a full or part-time capacity. There are, however, no empirical studies that have examined this issue in Poland.

The remaining State-owned farms and collectives are concentrated in the north and west regions of Poland where they account for about 40% of the agricultural land used compared with the national average of 13%. Private farms are more dominant in the central, southern and eastern regions.

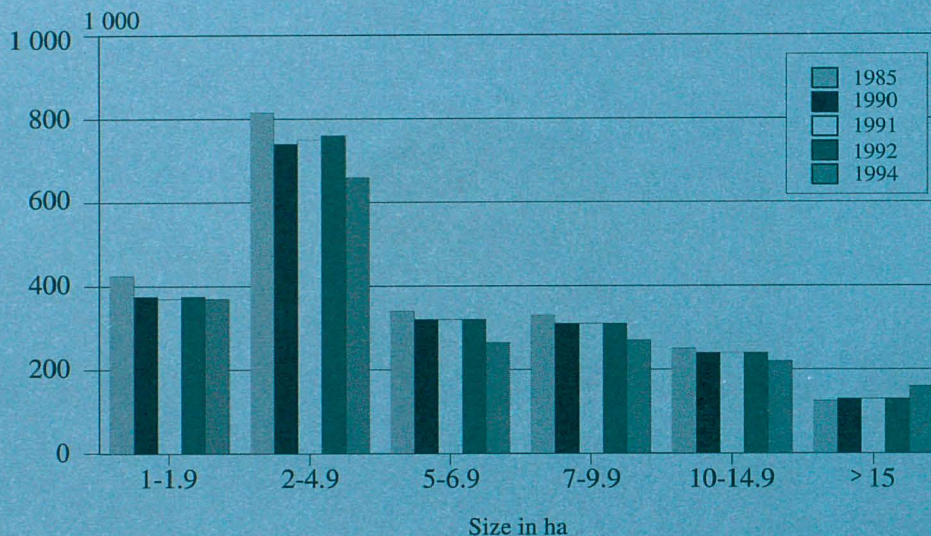
**Table 27**  
Polish farm ownership, 1994

	Number of farms	Area (ha)
State farms	1.1	1 778
Collectives	2.0	600
Family farms	1 967	14 932
Other private	1.2	1 290
Total	1 971	18 600

Source: GUS, 1995.



GRAPH 9: Number of farms by farm size



Source: GUS 1993, 1995.

### 3.4. Structure of agricultural holdings

There are currently about 2 million farms in Poland (Graph 9). Over the period 1989-94, the number of farms decreased by about 175 000. The average farm size has increased from 6.3 to 9.6 ha. Graph 9 shows that the size group 2 to 5 ha is the largest group, with about 750 000 farms (equal to about 35% of the total number of farms). Nevertheless, the number of farms in this size group appears to be falling. The smallest farms (1 to 1.9 ha) account for the second largest size group (380 000 farms or 18% of the total number of farms). The number of farms larger than 15 ha is the smallest size group accounting for 6% of all farms, although the 1994 data suggest that there have been significant recent increases in the numbers in this size group. There is a relatively small (but increasing) number of farms over 50 ha in size; 6 672 farms which account for only 0.3% of the total number of farms.

Farms of size 10 to 14.9 accounted for the largest part of agricultural land in Poland up to 1992 (22%: Graph 10), with the next most significant size groups being 7 to 9.9 ha and more than 15 ha, which accounted for about 20% each of the

agricultural area. However, in the last two to three years (based on 1994 data) there have been notable increases in the total area accounted for by farms larger than 15 ha and decreases in the area accounted for by all other groups except for the smallest size group; 1 to 1.9 ha.

A breakdown of the structure of Polish agriculture by region is shown in Table 29. A regional map is shown in Appendix 4.

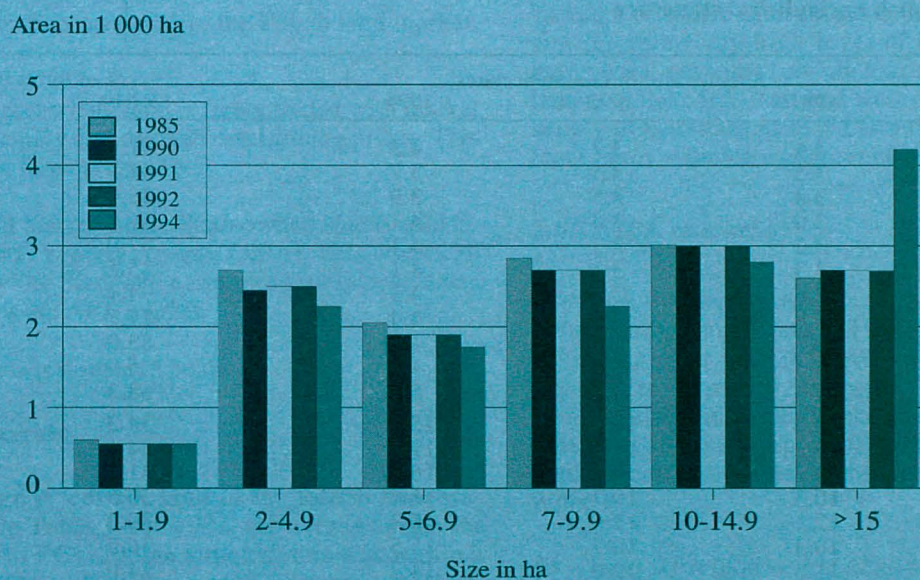
The smallest farms exist in the south-sast region of Poland (where private farms dominate) with the largest in the north and north-west regions (where the remaining State farms are concentrated). Over the period 1987-94, the increase in the average size of farms has tended to be greatest in those voivodships listed in Table 28 as 'with large farms'.

### 3.5. The market for agricultural land in Poland

With Poland's long history of private ownership of agricultural land, the vast majority of agricultural land in Poland (over



GRAPH 10: Area occupied by farm size



Source: GUS 1993, 1995.

80%) is farmed by landowners, with renting mainly associated with new privatized State farms. Nevertheless, where land is traded (i.e. sales or establishment of new rental agreements), renting is the most common form of transaction (Table 29). Of the 946 000 ha of land traded in 1994, 77% was rented and only 23% sold. About 154 000 farms were involved in renting in 1994 compared with 64 000 farms involved in land sales. Since 1993, the area rented has almost doubled; this being mainly attributable to the privatization of State farms which started in 1993.

The other key features relating to land transactions in the period 1993 and 1994 were:

- (i) the area of land subject to trade/transfer increased by 35% between 1993 and 1994, and was equivalent to about 7 to 8% of the total Polish agricultural area in 1994;
- (ii) of land sold, 70% is between private farmers and 30% between farmers and institutions/companies;

- (iii) in the rented sector, 44% is rented between private farmers and 56% by farmers from institutions (mainly the Agricultural Property Agency (APA) established in 1992 to administer the privatization of State farms);
- (iv) there is a significant area of land (0.4 million ha) subject to transfers/exchanges (without payment) — these mainly comprise inheritance, gifts and some cases where farmers exchange their land with the APA in return for a State pension (where they would not have otherwise qualified for a pension);
- (v) the average area per transaction is about 4 ha, although areas subject to renting tend to have a higher average area per transaction (4.8 ha). Where renting has occurred from the APA the average size was 13.3 ha.

Each of these components of the land market is discussed further in the subsections below.



Table 28

## Regional breakdown of Polish agricultural structure

Voivodship = region (similar to British county)	Average size of farm in hectares			% of farms in 1994	
	1987	1990	1994	< 5 ha	> 15 ha
<b>with small farms</b>	<b>3.6</b>	<b>3.7</b>	<b>4.3</b>	<b>81.6</b>	<b>0.5</b>
Nowy Sacz	3.5	3.5	3.7	84.3	0.3
Tarnów	3.4	3.5	3.9	83.0	0.1
Kraków	3.0	3.0	4.1	86.8	0.2
Krosno	3.2	3.3	4.1	87.0	1.0
Rzeszów	3.3	3.3	4.1	85.2	0.1
Bielsko-Biala	2.6	2.6	4.3	94.4	0.2
Przemysl	3.8	3.8	4.4	77.7	0.5
Tarnobrzeg	4.3	4.5	4.7	83.0	0.1
Kielce	4.5	4.6	4.9	65.9	0.7
Czestochowa	4.6	4.8	5.2	68.3	1.7
<b>with large farms</b>	<b>10.2</b>	<b>10.6</b>	<b>15.0</b>	<b>34.3</b>	<b>27.7</b>
Slupsk	10.2	10.4	19.8	34.4	29.2
Szczecin	9.2	9.5	16.5	41.2	25.4
Koszalin	10.3	10.7	16.4	36.5	26.9
Olszkyn	12.1	12.6	16.3	30.2	35.4
Pila	10.3	10.7	15.5	36.2	27.7
Suwalki	11.5	12.0	14.7	24.0	32.5
Elblag	11.1	11.5	14.6	26.6	33.8
Gorzów Wielkopolski	8.5	8.9	12.5	43.8	19.6
Bydgoszcz	9.7	9.9	12.1	33.4	24.6
Poznan	9.2	9.3	12.0	36.2	22.3

Source: Ostrowski (1995).

Table 29

## Land transactions in 1993 and 1994

Description	1993 area in 1 000 ha	1994 area in 1 000 ha	1994 Average area per transaction ha	1994 No of farms involved in transactions in 1 000
Total traded and transferred	1 004.2	1 353.1	4.1	330.4
<b>A. Total traded</b>	<b>599.3</b>	<b>946.4</b>	<b>4.4</b>	<b>217.4</b>
1. Land sales	213.2	214.4	3.4	63.9
(a) between farmers	166.6	151.1	3.0	50.4
(b) between farmers and institutions	46.6	65.3	4.8	13.5
• bought by farmers	41.1	59.3	5.7	10.5
• sold by farmers	5.5	6.0	2.0	3.0
2. Rented land	386.1	730.0	4.8	153.5
(a) between farmers	295.5	320.0	2.7	118.5
(b) between farmers and institutions	90.6	410.0	11.7	35.0
• rented from APA	82.3	400.0	13.3	30.0
• land returned to APA after renting	8.3	10.0	2.0	5.0
<b>B. Land not traded but transferred</b>	<b>404.9</b>	<b>406.7</b>	<b>3.6</b>	<b>113.0</b>
1. Inherited	266.0	273.5	5.0	54.7
2. Gift	126.3	124.6	2.2	55.6
3. Exchanged for pension	12.6	8.6	3.2	2.7

Note: APA stands for Agricultural Property Agency which was created in 1992 to deal with land privatization.

Source: Ostrowski (1995).

### 3.6. Developments in the Polish land market since transition

There are two distinct components to the Polish land market. These are:

- (i) the private market where land is freely traded with market conditions of supply and demand determining prices. This is known as the farmers' market;
- (ii) the institutional market where State-owned land is sold by the Agricultural Property Agency (APA). This covers all land owned by the State and earmarked for privatization and is known as the APA market.

Each of these markets is discussed below.

#### 3.6.1. Farmers' market

The annual average prices for land in the Polish farmers' market are shown in Table 30. In 1994, the average price for agricultural land was ECU 706/ha although this was within a range of ECU 420 to 993/ha according to land quality. Nominally the average price of land has increased by 332% between 1990 and 1994. In ecu terms, the nominal increase over the same period was 93% illustrating the devaluation of the zloty against the ecu. In real zloty terms, the average land price has increased by 55% (1990-94) although since 1993 it has fallen by 8.6%. Amongst private farmers there is a widespread perception that land prices are currently too low and do not reflect their real value, although factors contributing to the lack of demand for land have been a lack of capital/funds in the private farming community and the low level of farming profitability.

At a regional level, there are significant land price differences (Table 31). The most expensive land is in the southern region

of Poland where almost all holdings are small and private, and near large cities like Warsaw, Kraków or Katowice. The most expensive land in Nowy Sacz can be attributed to the relative shortage of usable agricultural land in this mountainous region and the relatively high level of demand for land for non-agricultural purposes (mainly tourism — skiing). The cheapest land is in the north-west and west regions. In these regions the supply of land has increased as a result of the privatization of State farms, which are concentrated in these regions.

#### 3.6.2. APA market

Although the main form of land contract traded by the APA is renting, the Agency does sell some land. In 1994, the average APA land price was ECU 509/ha, some 28% lower than the average farmer market land price. The APA land price tends to be lower than the farmer market price in most regions although there are some examples of similar prices (e.g. south and south-west) and higher prices (e.g. the north). This largely reflects:

- (i) most APA land is sold jointly with other privatized assets such as buildings, machinery and animals. Buyers are therefore obliged to purchase these assets with the land in order to maintain a manageable farm unit capable of continuing in farming;
- (ii) some privatized State farm land is sold with the outstanding debts of the farm. The price therefore reflects this additional burden;
- (iii) APA land is sold by a tender process in which potential buyers bid/offer prices for the land. This has tended to force prices down in most regions where demand is limited although, where demand for land is greatest, prices are higher (e.g. north) or similar (e.g. south).

**Table 30**

#### Market prices for arable land and meadows, 1990-94

Description	1990		1991		1992		1993		1994	
	Zl	ECU	Zl	ECU	Zl	ECU	Zl	ECU	Zl	ECU
Average for arable land	440	365	880	673	1 180	668	1 590	749	1 900	706
good quality soil	:	:	:	:	1 690	956	2 240	1 056	2 670	993
medium quality soil	:	:	:	:	1 150	651	1 590	749	1 900	706
poor quality soil	:	:	:	:	700	396	940	443	1 130	420
good quality meadow	:	:	:	:	1 360	770	:	:	2 080	773
poor quality meadow	:	:	:	:	840	475	:	:	1 210	450

Note: Zl = new zloty.

Source: GUS, Ostrowski (1995).

**Table 31****Land prices in selected voivodships in 1994**

Voivodship	ECU/ha by land quality type		
	average	good	poor
<b>High-price voivodship</b>	<b>1 182</b>	<b>1 584</b>	<b>732</b>
Nowy Sacz	1 971	2 673	1 104
Kraków	1 617	2 064	863
Warsaw	1 312	1 610	937
Kakowice	1 149	1 431	874
Lomza	1 082	1 539	617
Tarnów	970	1 335	606
Krosno	937	1 268	628
Leszno	937	1 268	632
Skierniewice	937	1 312	517
Kalisz	926	1 363	532
<b>Low-price voivodship</b>	<b>387</b>	<b>539</b>	<b>231</b>
Gorzów Wielkopolski	290	383	178
Zielona Góra	305	435	175
Koszalin	312	428	216
Suwałki	349	517	197
Olsztyn	387	569	201
Chelm	402	517	297
Szczecin	435	550	301
Legnica	446	587	301
Slupsk	454	740	178
Czestochowa	494	692	275

Note: Land prices in the remaining 29 voivodships not shown above fall within the range ECU 387 to 1 182/ha.

Source: Ostrowski (1995).

**Table 32****APA land prices, 1994**

Region	ECU/ha	% difference to farmer market
Average (all Poland)	509	- 28
Central-west	468	- 37
Central	461	- 39
Warsaw	892	+ 12
Central-east	234	- 62
South-east	450	- 59
South	851	+ 2
South-west	439	+ 4
North	575	+ 25
North-east	271	- 57

Source: Ostrowski (1995).

**3.6.3. The market for rented land<sup>1</sup>****3.6.3.1. Farmers' market**

The private (farmers') market for rented land has remained relatively stable in the period 1990-94. Within the market there are three main types of rent: the payment of land tax as rent; the payment of cash rent and the payment of rent in kind. About 10% of the private rental market comprises the payment of the land tax only as rent, and a further 20% is accounted for by rents which are equal to the payment of land tax (ECU 3 to 4/ha) plus an annual cash rent of Zł 100/ha or ECU 37/ha. The remaining 70% of the market comprises the payment of rent in

<sup>1</sup> Based on Ostrowski (1995).

kind in which rent is paid in terms of the crop/product derived from the use of the land. Current (1994) examples include:

- (i) 0.1 to 0.5 tonnes of rye (equivalent to ECU 7.4 to 37/ha);
- (ii) 0.2 to 0.35 tonnes of wheat (equivalent to ECU 18.6 to 33/ha);
- (iii) 1 to 1.5 tonnes of potatoes (equivalent to ECU 74 to 111/ha);
- (iv) half a pig (value ECU 93).

### 3.6.3.2. APA market

The rent for APA land in 1994 was set at the zloty equivalent of 0.2 and 0.5 tonnes of wheat (which was between ECU 18.6 and 46.5/ha). However, in some cases rents were lower if, for example, the lessee took on State-farms debts, agreed to protect jobs, or to buy the farm at a later date. The average period for rental agreements with the APA is seven years, with the main lessees being private farms seeking to increase the size of their holdings.

### 3.6.4. Regulations and institutional factors affecting the land market

Whilst Polish institutions and private individuals are free to trade and to exchange land, foreigners can only buy agricultural land if they obtain permission from the Ministry of Agriculture (which does not always allow foreign investment/purchase of land). In 1994, it is estimated (source: GUS) that there were about 20 000 ha owned by foreigners and a further 44 000 ha with mixed Polish-foreign ownership.

In relation to the registration of land ownership and title, all Polish records are held by courts. Due primarily to a lack of adequately trained staff in courts, it is widely considered that it takes between six and eight months to complete legal registration relating to changes in ownership.

Overall, trade in the Polish land market has increased significantly in recent years (a 35% increase in the area traded between 1993 and 1994), although it is still equivalent to only 7 to 8% of the total agricultural area. This suggests that despite the current relatively immature state of the market, the market is likely to grow in the next few years. Currently, the primary constraint to the development of the market is a lack of capital or access to borrowing with which land can be purchased. Farming interests lay most of this blame on government policy, limited access to credit and low interest rates for borrowing and the reluctance of banks to lend to a sector in which returns are perceived to be low.

Against this background renting has been, and is expected to be, the primary way in which land is traded in the next few years.

## 3.7. The market for and the use of labour

The main features relating to the use of labour in Polish agriculture are (Table 33) the following.

- (i) Agriculture accounts for about one quarter of total employment in Poland.
- (ii) There has been a 15% decrease in the numbers working in Polish agriculture. However, over the same period, the average number of people working on farms increased from 4.27 to 5.0 per hectare (over the same period the total agricultural area has remained relatively stable).
- (iii) Although all types of farm ownership experienced decreases in the numbers of people working on farms, the average number of workers per hectare increased for all forms of ownership. Nevertheless, the increase in the average number per hectare was lowest among private farms and greatest among the remaining State farms and collectives. This is mainly attributable to the greater focus on social welfare objectives such as employment retention in the State sector when compared with private family farms. On family farms, use of hired labour tends to be minimized, although there are no published data that break down use of hired labour in agriculture.
- (iv) In addition to the 3.72 million agricultural labour force in 1994, it is estimated (GUS) that about a further 1 million people are part-time farmers and 0.4 million own agricultural land but earn all of their income from non-agricultural occupations. Compared with 1989, the number of part-time farmers and those earning all of their income from non-agricultural activities have each fallen by 200 000.

The changes in the use of labour in Polish agriculture have been made against a background of relatively high levels of general unemployment in the economy (an increase in the unemployment rate from 6.3% in 1990 to 16% in 1994) which has hindered the movement of labour out of agriculture. Whilst the level of unemployment is estimated to be lower in rural areas (14.2%) than in urban areas (17.4%: *source: Sikorska, 1995*), there is estimated to be an element of surplus labour remaining in agriculture (Szemberg, 1993) as hidden unemployment. This hidden unemployment rate has increased from 6 to 21% of the total agricultural workforce between 1988 and 1992 and is perceived to be greatest in the areas where State farms are concentrated.

**Table 33****Key features relating to labour use in Polish agriculture, 1989-94**

	Agricultural labour force including owners		Average No of labour units/ha	
	1989	1994	1989	1994
State farms	441 000	143 000	7.95	12.4
Collectives	151 000	62 000	5.05	9.7
Family farms	3 432 000	3 200 000	3.93	4.3
Other (e.g. owned by churches, companies)	371 000	317 000	2.84	7.9
Total	4 395 000	3 722 000	4.27	5.0

Note: Labour units = full-time equivalents.

Source: GUS.

**Table 34****Polish agricultural wages, 1990-94**

	1990	1991	1992	1993	1994
Average wage per month (ECU)	82.3	128.7	115.4	125.8	131.8
Average wage per month (new Zl)	99.16	168.34	203.98	266.9	354.4
Average wage in real terms (new Zl)	99.16	98.4	95.5	107.58	127.12

Source: GUS.

**Table 35****Average monthly disposable income per capita in 1994**

Household type	ECU	Zl
Average (all Poland)	87.4	235
Employees of companies including State owner, excluding agriculture	89.2	240
Farmers/agricultural workers	76.2	205
Businessmen (private companies)	111.5	300
Pensioners	91.1	245

Note: Refers to disposable income after tax per capita in each type of household.

Source: GUS.

During the period 1990-94 nominal agricultural wages (in zloty) increased by 257% (Table 34) although in real terms, the increase was 28%. Prior to the introduction of economic reforms in 1989/90, agricultural wages tended to be higher than the average for the whole economy. However, by 1994, agricultural wages had fallen to a level 15% below the average for the rest of the economy. Despite the declining relative position for those working in the agricultural sector

between 1990 and 1994, the high levels of general unemployment in the economy have contributed to constraining the movement of people out of agriculture into other sectors. In the context of wage (and income) disparity between agriculture and other sectors, it is, however, important to recognize that the majority of private farmers in Poland rely on some non-agricultural sources of income (see subsection 3.8).

### 3.8. Agricultural income

From a position in the late 1980s in which real agricultural income was generally higher than income levels in other sectors, the relative position has been reversed since 1991 (Table 36). Also, although real agricultural income stabilized in the three years up to 1994, it is still at a considerably lower level than five years previously. This highlights the deteriorating position of agriculture relative to other sectors of the economy and has contributed to the shedding of labour from the sector. It should, however, be recognized that many in Polish agriculture derive additional income from non-agricultural sources and only about 20% of private farms derive all their income exclusively from farming. Also, 11% of private farms are estimated to have started up new non-agricultural businesses between 1988 and 1992 (*source*: Sikorska, 1993).

Kurek (1995) estimated that about 68% of farm income comes from agricultural activities and the remaining 32% is derived

from other sources. Employment outside agriculture also contributed 11.8% to household income. The highest share (45%) of non-agricultural income in total income of farming households is in south-east and central regions of Poland where private farming dominates and holdings are small; the lowest share is in the western region where current and former large State farms predominate (23%).

By size of farm, analysis by Brzezick et al. (1992) indicates that farm income per hectare tends to be highest for small holdings (under 3 ha) and lowest for holdings over 15 ha. However, the total level of income derived from smallholdings is rarely sufficient to provide adequately for the needs of farm households, hence the need to find alternative non-agricultural sources of income. This also illustrates the negative correlation between farm size and non-agricultural income where the smallest farms (under 3 ha) depend heavily on non-agricultural income.

**Table 36**

**Indices of real income changes on private farms, agricultural income and non-agricultural income, 1985-94 (1985=100)**

	Private farms	Agricultural income (general)	Non-agricultural income
1985	100	100	100
1986	99.9	98	83.0
1987	88.5	87	70.7
1988	121.9	110	86.7
1989	113.6	125	109.1
1990	48.6	61	58.5
1991	73.9	51	66.8
1992	101.6	59	72.9
1993	:	65	88.0
1994	:	64	82.2

*Source*: GUS 1995; Kwiecinski 1995.

**Table 37**

**Average net farm income per hectare, 1989-91**

Description	1989		1990		1991	
	ECU	Zl	ECU	Zl	ECU	Zl
Total (ha)	0.11	0.13	0.4	0.52	0.41	0.72
Farm size 1-3	0.14	0.17	0.7	0.91	0.96	1.70
Farm size 3-7	0.12	0.15	0.52	0.68	0.63	1.11
Farm size 7-10	0.12	0.14	0.41	0.54	0.46	0.81
Farm size 10-15	0.1	0.12	0.39	0.51	0.4	0.70
Farm size > 15	0.1	0.12	0.35	0.45	0.29	0.52

Note: The latest available data are for 1991.

*Source*: Brzezick et al. (1992)

**Table 38****Rural-urban population movement, 1981-93**

(1 000)

Description	1981-90	1990	1991	1992	1993
Urban areas: inflow	4 196.5	346.0	331.2	314.1	281.1
outflow	2 852.5	233.3	224.8	228.4	221.2
balance	+ 1 344.0	+ 112.7	+ 106.4	+ 85.7	+ 59.9
Rural areas: inflow	2 513.9	183.9	174.2	180.0	175.7
outflow	3 857.9	296.6	280.6	265.7	235.6
balance	- 1 344.0	- 112.7	- 106.4	- 85.7	- 59.9

Source: GUS (1995a).

### 3.9. Labour migration

In the 1980s, there was a general outflow of population from rural areas to urban areas (Table 38). This was caused mainly by government policies encouraging industrialization and the attraction of new urban jobs which were often perceived to be less harsh than working in agriculture. However, since 1990, the net outflow of population from rural areas has decreased by half (from 112 000 in 1990, to 60 000 in 1993). This has been due to two main factors: poor and worsening job prospects in urban areas where unemployment rates have been higher than in rural areas and rising costs (higher than rural areas) of living. As indicated in subsection 3.8 above, during the difficulties of economic transition, it has been relatively easier for farms to retain labour (to the extent that there is significant underemployment) than in urban areas, with those remaining in agriculture generally more willing to accept lower than average wages and income than unemployment.

## 4. The future direction of the land and labour markets in the Czech Republic and Poland and the potential direction of impact of CAP style direct payments

This section provides an overview of the potential direction of impact of introducing direct payments on cropping patterns, and an assessment of the likely future direction of ownership patterns, the land and labour markets and household income.

### 4.1. Relevant issues to explore

In examining the potential impact of introducing direct support payments into the agricultural sectors of CEECs, there are many issues worth examination and analysis. Some of the most important issues to examine and which could all justify

considerable in-depth research in their own right include the following.

- (i) What will be the state of the CAP at the time of accession for any individual CEEC? Currently the CAP has undergone (some) reforms principally in the arable and beef sectors, with other sectors such as fruit and vegetables, wine and rice awaiting reforms. Also, it is expected that the regimes that affect arable crops (mainly cereals and oilseeds) may be subject to further reform in the next five years.
- (ii) What impact will other support mechanisms to direct payments potentially have on the agricultural sectors of the CEECs? For example, what will be the nature and extent of price support at the time of accession? To what extent will domestic production be protected from third country competition?
- (iii) What will be the state of national government agricultural support in each of the CEECs at the time of accession? The future evolution of agricultural policy in each country will play a crucial role in influencing cropping patterns, structural change and farm income levels.
- (iv) How will GATT commitments facing both the EU and the CEECs affect the development of the CAP and national CEECs' agricultural policy?
- (v) What date might CEECs be ready for accession? This will vary between countries and will be heavily influenced by non-agricultural issues such as macroeconomic policy, the state of the economies and the degree of privatization.
- (vi) How have farmers in EU countries reacted to the introduction of direct payment support mechanisms and how has this impacted on cropping patterns, the land market, use of labour and farm income? In many cases, comparisons with EU countries as a potential guide to

impact in the CEECs are not possible because of a lack of current analyses of the recent nature of the changes.

- (vii) In the EU, the direct payments were introduced as compensation for cuts in price support. If introduced in the CEECs they would represent additional levels of support rather than compensation. The potential direction of impact in EU countries as compared with CEECs may therefore differ.

Against this background, the analysis in this section is limited. It focuses on potential issues and problems that may require more detailed examination and only examines the potential direction of change. It has also been made under the following assumptions (all of which were stipulated by DG II):

- (i) the direct payment levels used are those prevailing in the EU in the year 1995/96;
- (ii) all other aspects of the CAP regimes are 'as now' (i.e. price support levels, intervention rules are those applying in 1995/96);
- (iii) agricultural policies in the CEECs are those prevailing in 1995;
- (iv) projections for crop and livestock production, in the absence of considering the imposition of direct payments, are those presented in the DG VI agricultural situation and prospects in the Central and East European countries reports for the Czech Republic and Poland.

In the two subsections below, the future direction of potential change is discussed in the two case study countries.

## 4.2. Czech Republic

### 4.2.1. Future cropping patterns

A summary of the projected cropping patterns in the Czech Republic for 2000 is shown in Table 39.

These projections are based on a continuation of current Czech agricultural policy which neither moves Czech agricultural support levels towards EU levels nor reduces the current level of intervention. They suggest that as far as land use is concerned, productivity measures (higher yields) and reduced demand for some products (e.g. sugar and potatoes) will reduce the need for arable land (this is likely to be partly afforested and partly converted to grassland). Within the arable crop sector, there is likely to be a stabilization of cereals and oilseed areas, an increase in fodder and pulse crop areas and a reduction in sugar and potato areas.

If a direct payment system were to be introduced into Czech agriculture at the current levels applicable in the EU, this would add considerably (an increase in gross returns of over 60%) to the returns per hectare of all eligible arable land in the country (Table 40). This would probably greatly reinforce the current and expected trend in cropping patterns away from potatoes and sugar (which are not part of the arable area payments scheme) to oilseeds, pulses and cereals. In particular, it would be reasonable to expect that, at the farm level the financial incentive to grow cereals, especially wheat, would increase substantially. However, the extent of any shift in cropping pattern, will depend on:

**Table 39**

### Future cropping patterns in the Czech Republic

	1994	2000
Arable area	3 158	3 128
Cereals	1 750	1 750
Oilseeds	249	250
Fodder crops	903	890
Sugar beet	91	71
Potatoes	82	69
Pulses	71	80
Other crops	12	18

Source: DG VI, European Commission, 1995.



- (i) many other factors that will impinge on the crop decision-making process at the farm level (e.g. the level of price support and policy on intervention);
- (ii) uncertainties as to how any form of budgetary limits on the use and availability of area payments might be applied at the national level. If direct payments were limited to a national level area quota, the considerable incentives at the farm level to shift away from sugar beet and potatoes might be diluted by the extent to which the national area quota was overshot. Hence, in the first year of any area payment scheme operating, Czech farmers would probably make significant shifts in cropping to cereals and oilseeds, only to find that the incentives were reduced in the following year by the extent to which the national area quota was exceeded.

Within any national area quota, it is, however, likely that due to the higher yields of cereals relative to oilseeds and pulses, the incentives would be greatest for farmers to shift out of pulses and oilseeds into cereals and, in particular, to wheat.

Also increased cereal hectareage and production would increase the exportable grain surplus from the Czech Republic. Bearing in mind the fact that the GATT limit for subsidized grain

exports (about 65 000 tonnes) is already significantly lower than the current and projected exportable surplus (0.4 to 0.5 million tonnes), any additional grain production would have to be sold at world market prices.

#### 4.2.2. Ownership

The current ownership pattern, in which cooperatives account for nearly 50% of the area farmed in the Czech Republic, is under current agricultural policy conditions expected to be maintained over the next five years. Of the remaining 0.75 million ha of State farmland awaiting privatization, this process is expected to be completed by 2000, and to be divided between family farms/partnerships and/or cooperatives. However, there is likely to be an increase in the area farmed by partnerships and farming companies, at the expense of family farms and cooperatives (i.e. a continuation of recent ownership trends). Overall, the ownership structure in the Czech Republic will become less polarized.

Should an area-based support scheme be introduced, the substantial increase in revenue and potential profitability referred to in the subsection above and Table 40 is likely to:

**Table 40**

**Potential impact of direct area payments on Czech agriculture**

	1994	2000
Arable area (1 000 ha)	3 158	3 128
less potato and sugar beet area (1 000 ha)	2 948	2 988
Small farms area <sup>1</sup> (1 000 ha)	295	299
Set-aside area <sup>2</sup> (1 000 ha)	265.3	268.9
Area in AAPS (including small farms) (1 000 ha)	2 387.9	2 420.3
Average cereal yield <sup>3</sup> (tonne/ha)	4.12	4.49
Small farmer and AAPS direct payments (ECU/tonne)	54.34	54.34
Small farmers direct payment and AAPS (ECU/ha)	223.88	244.0
Set-aside payments (ECU/ha)	283.58	309.05
Average revenue received from area payments (ECU/ha)		
• if all farms in small farms scheme	223.88	243.98
• in AAPS	229.84	250.50
Revenue from crop (cereals) sales <sup>4</sup> (ECU/ha)	362.56	395.12
Total revenue (ECU/ha)		
• in small farms scheme	586.44	639.10
• in AAPS	592.36	645.62
% increase in revenue as a result of area payments		
• small farmer	61.7	61.7
• AAPS farmer	63.49	63.4

<sup>1</sup> Small farm area: based on 10% of the Czech arable area being in holdings under 10 ha (estimate).

<sup>2</sup> Set-aside assumed rate of 10%.

<sup>3</sup> Cereal yields chosen as they are higher than oilseed and pulse yields.

<sup>4</sup> Cereal revenues based on ECU 88/tonne.

- (i) reinforce/accelerate the ownership trend towards private partnerships and limited companies (increased returns to the sector will attract outside investors into the sector);
- (ii) encourage some landowners who have currently chosen to remain within cooperatives (primarily because of the security offered by co-ops during difficult and changing economic times) to withdraw and farm as private individuals/partnerships (security being now provided by area payments and prospects for earning a reasonable income being considerably enhanced).

#### 4.2.3. Structure of holdings

Whilst the main feature of the current structure of holdings in the Czech Republic is a relatively high average holding size (67 ha), with the majority of the agricultural area (68%) found in holdings over 1 000 ha in size, there has, since 1990 been an increase in the total number of holdings and a decline in the average size of holdings. The primary reason for this process has been the privatization of former State farms and collectives and the withdrawal of private landowners from cooperatives.

Under current policy conditions, it is expected that this process will continue, especially as there are about a further 0.75 million ha of State farmland timetabled for privatization over the next few years.

Bearing in mind the potential impact on ownership of introducing an area-based support mechanism, the impact on the structure of holdings may cause two effects that pull in different directions. On the one hand, the increased profitability of the sector that may accelerate ownership trends in favour of partnerships and limited companies may lead to a consolidation of holdings and increasing average holding size. On the other hand, current co-op members leaving cooperatives to farm alone will have the opposite effect and reduce the average holding size.

#### 4.2.4. The land market

Currently the private Czech land market is virtually non-existent, with land prices and rents primarily determined by the government administrative price system. Over the next five years, it is expected that a private market will slowly develop, with land prices and rents increasing. This will be mainly associated with predicted improvements in the performance of the sector and may lead to a doubling/tripling of land prices/rents. In the long term, it is to be expected that changes in land prices and rents will produce returns that are broadly comparable to interest rates in the Czech Republic. Attempting to draw on comparable EU data as a potential indicator of impact has, however, been of little assistance. The author is unaware of any current published work that has examined the impact of the Arable Area Payments Scheme (AAPS) on EU

land prices. Also, both rents and land prices vary widely between, and within, EU countries. The injection of additional revenue into the sector that would occur if an AAPS was introduced into the Czech Republic would probably result in an increase in the demand for arable land which would inevitably push up land prices and rents. Assuming that long-term land prices tend to reflect returns akin to real interest rates (currently in the Czech Republic real interest rates are between 3 and 5% depending on whether short or long-term rates are taken), the impact of introducing an AAPS on farmer revenues would potentially result in land prices increasing substantially. For example, assuming that all of the AAPS payments were additional revenue (i.e. no additional costs) the average Czech land price might be expected to increase nearly fivefold (assuming a real interest rate of 3%; if the real interest rate was 5%, the increase in land price would be by a factor of about 2.5). Factors that will influence the level of impact include:

- (i) the timing of the introduction of such a support scheme. Over the next five years, other factors (see subsection 2.6) are likely to play a far more important influence on the market for land, primarily because there is no current real land market in the Czech Republic. Nevertheless, if a date was set for accession to the EU (including clarification of conditions for adopting the CAP) in the next few years, anticipation of future increases in revenue associated with adopting an AAPS would push up land prices further;
- (ii) the extent to which current non-farming landowners, many of whom are urban dwellers (2.1 million), might decide to take up farming as an occupation. The 60% plus increase in returns referred to associated with the introduction of an AAPS in the Czech Republic might tempt some urban dwellers to take up agriculture. The extent to which this might occur would then reduce the area for rent but increase the use by owners of land and their demand for additional land;
- (iii) who would receive the area payments? In the EU, it is the farmer, regardless of whether he/she is the landowner or a tenant, who receives the area payments. In the Czech Republic where nearly half of the current agricultural area is farmed by cooperatives, it is unclear as to who, in the case of cooperatives, might be eligible to apply for area payments and hence, to receive such payments. If the payments were made to cooperatives, the benefits would probably be distributed to members as increased allocations of surpluses/profits, although some of the benefits might be dissipated via higher wages to workers. If, however, the right to receive payments was granted to the actual landowners, it might encourage some owners to:
  - withdraw from co-ops to farm alone (this would only impact on the land market if it also resulted in the

individual farmers seeking to rent/acquire additional land);

- withdraw from the co-op to rent their land to the highest bidder.

#### 4.2.5. Farm income, wages and use of labour

The current position in the Czech Republic relating to farm income, wage levels and use of labour in agriculture is one in which:

- many elements, especially the remaining State farms, are unprofitable;
- real agricultural income and wages have fallen relative to other sectors of the economy;
- there has been a halving in the agricultural workforce since 1989;
- income from non-agricultural activities has become increasingly important (this accounts for 29% of total agricultural household income);
- there is significant (unquantified) underemployment of the remaining agricultural workforce.

Over the next five years, the overall profitability position of the sector is expected to improve, especially as the remaining State farms (which account for about half of the total losses in the sector) are privatized. Real incomes and wages have already improved in the last year and it is expected that this trend will continue, although the disparity between the agricultural and non-agricultural sector is not expected to be removed (i.e. average agricultural income and wages are likely to remain lower than the average levels for the economy as a whole). In the market for labour, the reduction in the numbers working in the sector is expected to continue, although at a significantly slower rate than during the shake out during the early 1990s (most of the State sector has already been privatized and there is currently only a workforce of 5 300 on the remaining 229 State farms).

If an EU-style area payments mechanism was introduced to the Czech Republic, the direction of impact is likely to be as follows.

- Income: a substantial improvement in the level of agricultural income.
- Wages: an increase in the level of real agricultural wages, possibly removing the disparity between agricultural and non-agricultural wages. This is likely to occur because the increased returns in the sector will attract resources into

the sector and increase the demand for factors of production such as labour.

- Employment: the direction of impact might be both an increase or a decrease in demand for labour. If increased interest in agricultural production results in increased demand for factors of production, including labour, this will contribute to a slowing down in the rate of labour migration out of the sector. However, the extent to which additional labour resources might be required in the sector will be influenced by the current level of underemployment in the sector and this source of additional labour resource might meet most, all, or some of any increased demand for labour. Another factor that may influence employment levels is that some farms might utilize their extra revenue for capital and equipment purchase (labour replacement) and hence accelerate the labour exodus from the sector. Also, if there is a shift in cropping patterns away from potatoes to cereals, there is likely to be a decrease in demand for labour (potatoes being traditionally a more labour-intensive crop than cereals).

### 4.3. Poland

#### 4.3.1. Future cropping patterns in Poland

The projected direction of Polish cropping patterns is similar to those in the Czech Republic (Table 41) with the exception that the total arable area is not expected to change significantly.

Within the arable crop sector, the areas of cereals and oilseeds are expected to increase whilst the areas of sugar beet and potatoes are expected to decrease.

If a direct payment system were to be introduced into Polish agriculture, similar impacts to those discussed in subsection 4.2 for the Czech Republic would be likely to occur. There would probably be a substantial increase in gross returns/ha (Table 42) which would reinforce the current and expected trend in cropping patterns away from potatoes and sugar to oilseeds, pulses and cereals. It is also likely that a considerable proportion of the current 1.1 million ha of idle land would be brought back into the production of cereals and oilseeds. The extent of any shift in cropping pattern, will however be influenced by:

- many other factors that will impinge on the crop decision-making process at the farm level (e.g. the level of price support and policy on intervention);
- uncertainties as to how any form of budgetary limits on the use and availability of area payments might be applied at the national level (see subsection 4.2 for further

**Table 41****Future cropping patterns in Poland**

	1994	2000
Arable area	14 300	14 300
Cereals	8 481	8 600
Oilseeds	370	550
Sugar beet	401	315
Potatoes	1 697	1 550
Pulses	394	
Other crops	2 957	3 285

Note: Other crops includes: 1.1 million ha which were fallow in 1994, pulses and fodder crops.

Source: DG VI, European Commission 1995.

discussion on this impact, which is likely on be similar in the Czech Republic and Poland).

Overall, the impact in Poland is likely to be greater than in the Czech Republic mainly because of the larger arable area (4 to 5 times the area in the Czech Republic) and the current 1.1 million ha of idle agricultural land in Poland that would probably be brought back into production.

#### 4.3.2. Ownership

The current ownership pattern in Poland differs substantially from the pattern in the Czech Republic. Private family farms dominate Polish agriculture and are expected to continue to do so over the next five years. Nevertheless, the area farmed by other forms of private businesses (partnerships and companies) is expected to increase. Of the remaining 2.4 million ha of State farmland awaiting privatization, this is expected to be completed over the next 5 to 10 years with the majority of this land being used by private farms and partnerships by 2000.

If an AAPS was introduced into Poland, a substantial increase in revenue would be likely to produce similar results as in the Czech Republic (i.e. accelerate the ownership trend towards private partnerships and limited companies). However, because of the dominance of private farms in Poland, the development of partnership and limited company interest in agriculture is unlikely to develop to the same degree as in the Czech Republic.

#### 4.3.3. Structure of holdings

The current structure of holdings in Poland is in marked contrast to the Czech Republic. The average size of holding is considerably smaller in Poland (9.6 ha) with the majority of the agricultural area found in holdings under 10 ha in size. Nevertheless, since 1990, there has been an increase in the

average size of holdings and the total area of farms in size groups over 20 ha. The primary reason for this has been the privatization of former State farms and collectives, which have provided many private farmers with additional land and the development of a land market in which nearly 1 million ha have been sold/rented out and allowed many farmers to increase the size of their holdings and the withdrawal of private landowners from cooperatives.

Under current policy conditions, it is expected that this trend will continue and the share of bigger farms (over 20 ha) is expected to account for 30% of total agricultural area by 2000 (they accounted for 20% of the area in 1994).

It is however, difficult to predict what impact the introduction of an AAPS might have on the structure of Polish holdings. On one hand, it might accelerate the consolidation process to higher average farm size, as existing private farmers seek additional land, or it might encourage some non-farming landowners who currently rent out their land, to take up farming. If this occurs, it may slow down the consolidation process. Since the number of non-farming owners of agricultural land is very small when compared with the Czech Republic this potential direction of change is unlikely to be as significant in Poland in comparison with the Czech Republic.

#### 4.3.4. The land market

The private land market in Poland is currently not well developed (equivalent of 7 to 8% of the total agricultural land being traded in 1994). Over the next five years it is expected that the market will continue to develop, with land prices and rents increasing. Assuming that all of the AAPS payments were additional revenue to Polish farmers, the average Polish land price might be expected to increase by a factor of between 5 and 12 assuming a real interest rate of between 2 and 4% (current real interest rates in Poland are 2 to 4% depending on

**Table 42****Potential impact of direct area payments on Polish agriculture**

	1994	2000
Arable area (1 000 ha)	14 300	14 300
less potato and sugar beet area (1 000 ha)	12 202	12 435
Small farms area <sup>1</sup> (1 000 ha)	9 760	8 705
Set-aside area <sup>2</sup> (1 000 ha)	245	373
Area in AAPS (excluding small farms) (1 000 ha)	2 197	3 357
Average cereal yield <sup>3</sup> (tonne/ha)	2.57	3.28
Small farmer and AAPS direct payments (ECU/tonne)	54.34	54.34
Small farmers direct payment and AAPS (ECU/ha)	139.64	178.22
Set-aside payments (ECU/ha)	176.89	225.76
Average farm size (ha)	6.7	7.5
Average revenue received from area payments (ECU/ha)	139.64	178.22
• if all farms in small farms scheme	139.64	178.22
• in AAPS	143.36	182.97
Revenue from crop (cereals) sales <sup>4</sup> (ECU/ha)	251.86	321.44
Total revenue (ECU/ha)		
• in small farms scheme	391.50	499.66
• in AAPS	395.22	504.41
% increase in revenue as a result of area payments		
• small farmer	55.4	55.4
• AAPS farmer	56.9	56.9

<sup>1</sup> Small farm area: based on 80% of holdings under 20 ha.

<sup>2</sup> Set-aside assumed rate of 10%.

<sup>3</sup> Cereal yields chosen as they are higher than oilseed and pulse yields.

<sup>4</sup> Cereal price based on ECU 98/tonne (1994 average Polish price).

whether short or long-term rates are chosen). Whilst potential relative impact of AAPS payments on Polish land prices is higher than in the Czech Republic, this mainly reflects the current low level of Polish land prices compared with Czech prices. Even if these rates of increase were to occur in Poland, Polish land prices are unlikely to rise to levels in the Czech Republic. This probably reflects the large area of agricultural land in Poland which provides for an abundant supply of agricultural land. As in the Czech Republic, this will be mainly associated with improvements in the performance of the sector. Over the period 1990-94, average land prices rose by 220% in real terms and it is likely that over the next two to three years real prices will rise by two to three times.

The potential impact of introducing AAPS on the Polish land market is likely to increase the demand for arable land which will push up land prices and rents further. By how much land prices and rent might increase is, however, difficult to forecast (the analysis in the previous paragraph gives some pointers). Factors that will influence the level of impact include:

- (i) the timing of the introduction of such a support scheme. Over the next five years, other factors (see subsection 3.6) are likely to have a far more important influence on the

market for land, primarily because the Polish land market is not well developed. Nevertheless, if a date for Polish accession to the EU was set in the next few years, anticipation of adopting an AAPS would probably push up Polish land prices further;

- (ii) the extent to which current non-farming landowners, some of whom are urban dwellers, might decide to take up farming as an occupation. Since, however, current urban dwellers own less than 1% of the Polish agricultural area, this factor is unlikely to have a significant impact.

#### 4.3.5. Farm income, wages and use of labour

The main features relating to farm income, wage levels and use of labour in Polish agriculture are:

- (i) many units, especially the remaining State farms, are unprofitable;
- (ii) real agricultural income and wages have fallen relative to other sectors of the economy;

- (iii) there has been a 15% decrease in the agricultural workforce since 1989;
- (iv) income from non-agricultural activities is an important part of Polish agricultural household income — its relative importance has also increased in the last five years;
- (v) there is significant underemployment of the remaining agricultural workforce estimated to be equal to about 21% of the agricultural workforce.

Over the next five years, the overall profitability position of the sector is expected to improve. Real incomes and wages have already improved in the last year and it is expected that this trend will continue although, as in the Czech Republic, the disparity between the agricultural and non-agricultural sector is not expected to be removed.

In the market for labour, the reduction in the numbers working in the sector is expected to continue, although against a continuing background of higher levels of unemployment in the Polish economy, the scope for those in agriculture to leave the sector for alternative employment will remain limited. Consequently, it is expected that there will still be over 3 million working in agriculture in 2000, many of whom are underemployed and/or working part time.

If an AAPS was introduced into Polish agriculture the likely direction of impact will be similar to the impact referred to in the Czech Republic (subsection 4.2), namely the following.

- (i) **Income:** a substantial improvement in the level of agricultural income.
- (ii) **Wages:** an increase in the level of real agricultural wages, possibly removing the disparity between agricultural and non-agricultural wages (because the area payments will give the agricultural sector an income injection not provided to other sectors). Nevertheless, as Polish agriculture has not experienced the same degree of labour shake out as the Czech Republic, any upward pressure on wages is likely to be less than in the Czech Republic.
- (iii) **Employment:** the likely increased profitability of the sector would pull in two opposite directions. On the one hand, the demand for labour might increase (increased profitability leading to an increase in demand for all factors of production). On the other hand, the increased profitability may lead to increased labour replacement by capital factors of production and a shift in cropping patterns from relatively labour-intensive potato production to relatively capital-intensive cereal production. Also, any increase in demand for labour might be taken up by the current significant levels of underemployed people in the sector. When compared with the Czech Republic, the positive employment impact of adopting an AAPS is likely to be less apparent in Poland (higher levels of underemployment and a lower level of reduction in the agricultural labour force, 1990-94).



## Appendix 1 Economic accounts for Czech agriculture, 1993 and 1994

### Economic accounts for Czech agriculture, 1993 and 1994

	1993	1994
<i>(million Kcs)</i>		
Cereals		
Wheat	9 001.3	9 058.4
Rye	702.5	723.5
Barley	5 829.4	5 125.7
Oats	530.7	375.3
Maize	480.0	438.3
Other	151.0	185.8
Rice	0.0	0.0
Pulses	623.7	394.9
Root crops		
Potatoes	5 402.2	3 981.0
Sugar beet	3 485.4	2 213.0
Industrial crops		
Oil seeds	2 684.9	3 126.9
Fibre plants	89.8	101.4
Tobacco	0.0	0.0
Hops	1 675.2	1 389.3
Other	271.1	309.7
Fresh vegetables	7 028.3	7 312.0
Fruit	2 829.1	2 470.9
Grapes	468.1	592.9
Seeds	168.9	62.0
<b>Final crop output</b>	<b>42 371.1</b>	<b>38 718.8</b>
Animals		
Cattle (including calves)	7 267.8	8 196.4
Pigs	17 697.1	20 231.5
Equines	268.7	270.1
Sheep and Goats	19.6	49.0
Poultry	3 534.7	3 931.8
Animal products		
Milk	18 658.9	16 706.4
Eggs	4 899.4	5 080.3
Wool	3.8	3.0
Other	580.5	575.7
<b>Final animal output</b>	<b>52 930.4</b>	<b>55 044.1</b>
<b>Final agricultural output</b>	<b>95 301.5</b>	<b>93 762.9</b>
<b>Total intermediate consumption</b>	<b>65 577.1</b>	<b>62 935.8</b>
<b>Gross value added at market prices</b>	<b>29 724.4</b>	<b>30 827.1</b>
Subsidies	1 331.0	2 255.0
Taxes linked to production excluding VAT	2 270.0	2 270.0
<b>Gross value added at factor cost</b>	<b>28 785.4</b>	<b>30 812.1</b>
Depreciation	9 002.1	9 449.0
<b>Net value added at factor cost</b>	<b>19 783.3</b>	<b>21 363.1</b>
Compensation of employees	22 080.1	21 971.2
<b>Net operating surplus</b>	<b>(2 296.7)</b>	<b>(608.1)</b>
Rent and other payments	1 174.6	1 600.0
Interest	4 309.4	4 509.4
<b>Net income from agricultural activity of total labour</b>	<b>14 299.4</b>	<b>15 253.8</b>

Source: CSO, VUZE.

## Appendix 2 Production of the main agricultural products in the Czech Republic, 1989-95

### Production of the main agricultural products in the Czech Republic, 1989-95

	1989	1990	1991	1992	1993	1994	1995
<b>Milk in million litres</b>							
Domestic supply	4 473	4 380	3 518	3 218	2 906	2 686	2 530
Domestic demand	3 080	3 082	2 642	2 379	2 008	2 050	2 020
Export	1 393	1 298	901	892	923	774	580
Final stocks		53	53	53	108	54	64
<b>Beef meat in 1 000 tonnes LW</b>							
Output	519	511	574	420	390	313	289
Domestic demand	482	467	399	344	347	314	308
Export	36	45	184	77	56	31	5
Final stocks		35	30	32	25	11	0
<b>Pig meat in 1 000 tonnes LW</b>							
Output	778	772	690	740	710	655	525
Domestic demand	764	770	676	700	690	675	535
Export	14	2	20	40	24	7	5
Final stocks		33	28	29	25	15	20
<b>Cereals in 1 000 tonnes</b>							
Output	7 793	8 947	7 845	6 565	6 600	7 210	7 080
Domestic demand	7 841	8 231	7 220	7 039	6 417	6 793	6 739
Export	131	6	420	493	59	526	829
Final stocks	993	1 716	1 929	1 101	1 765	1 900	1 587.2
<b>Wheat in 1 000 tonnes</b>							
Output	4 090	4 624	4 081	3 413	3 370	3 898	3 878
Domestic demand	4 148	4 236	3 414	3 689	3 075	3 256	3 321
Export	31	4	350	301	28	419.2	700
Final stocks	516	900	1 220	658	1 095	1 338.6	1 215.6
<b>Crop area in 1 000 ha</b>							
Cereals	1 661.9	1 639.7	1 611.8	1 583.2	1 630	1 750	1 683
Sugar beet	126.6	118.1	118.8	124.1	106.7	91.1	93.6
Potatoes	115.3	109.3	113.3	110.5	102.8	76.7	80
Oil seeds	121.5	129.9	161.6	165.7	192.4	250	312
Flax	21.2	20.9	15.2	9.3	7.6	10	
<b>Herd size in 1 000 head</b>							
Cattle	3 480	3 506	3 360	2 950	2 511	2 161	2 031
of which Cows	1 247	1 236	1 195	1 036	975	830	768
Pigs	4 685	4 790	4 560	4 609	4 599	4 000	3 862
Poultry	32 479	31 981	33 278	30 756	28 219	26 800	26 592
<b>Crop production in 1 000 tonnes</b>							
Cereals	7 793.1	8 946.9	7 845.3	6 564.9	6 600	7 210	7 080
Oil rape	313.3	304.5	348.3	292.9	377.2	451.6	663
Sugar beet	4 497	4 017.3	4 008.7	3 871.5	4 308.3	3 240	3 463
Potatoes	2 421.8	1 755.1	2 043.2	1 969.2	2 396	1 342	1 424
<b>Animal production</b>							
Beef meat in 1 000 tonnes	518.5	511	574	420	390.3	313	289
Pig meat in 1 000 tonnes	778	792	690	740	712	655	525
Poultry meat in 1 000 tonnes	199	210	208	170	157	165	175
Milk in million litres	4 900	4 700	4 100	3 724	3 443	3 179	3 007
Eggs in millions	3 643	3 681	3 500	3 673	3 400	3 300	3 350

**Production of the main agricultural products in the Czech Republic, 1989-95 (continued)**

	1989	1990	1991	1992	1993	1994	1995
Gross agricultural output (million Kcs), 1989 prices							
Gross agricultural output	108.6	106.1	96.7	85	83	78.4	:
crop production	44.7	44.4	43.1	35.7	37.4	35.2	:
animal production	63.9	61.7	53.6	49.3	45.6	43.2	:
crop (%)	41.2	41.8	44.6	42.0	45.1	44.9	:
animal (%)	58.8	58.2	55.4	58.0	54.9	55.1	:
Gross agricultural output (%)	100.0	97.7	89.0	78.3	76.4	72.2	:
crop production (%)	100.0	99.3	96.4	79.9	83.7	78.7	:
animal production (%)	100.0	96.6	83.9	77.2	71.4	67.6	:

Source: CSO, VUZE.

### **Appendix 3 Definitions of the different types of ownership in Poland**

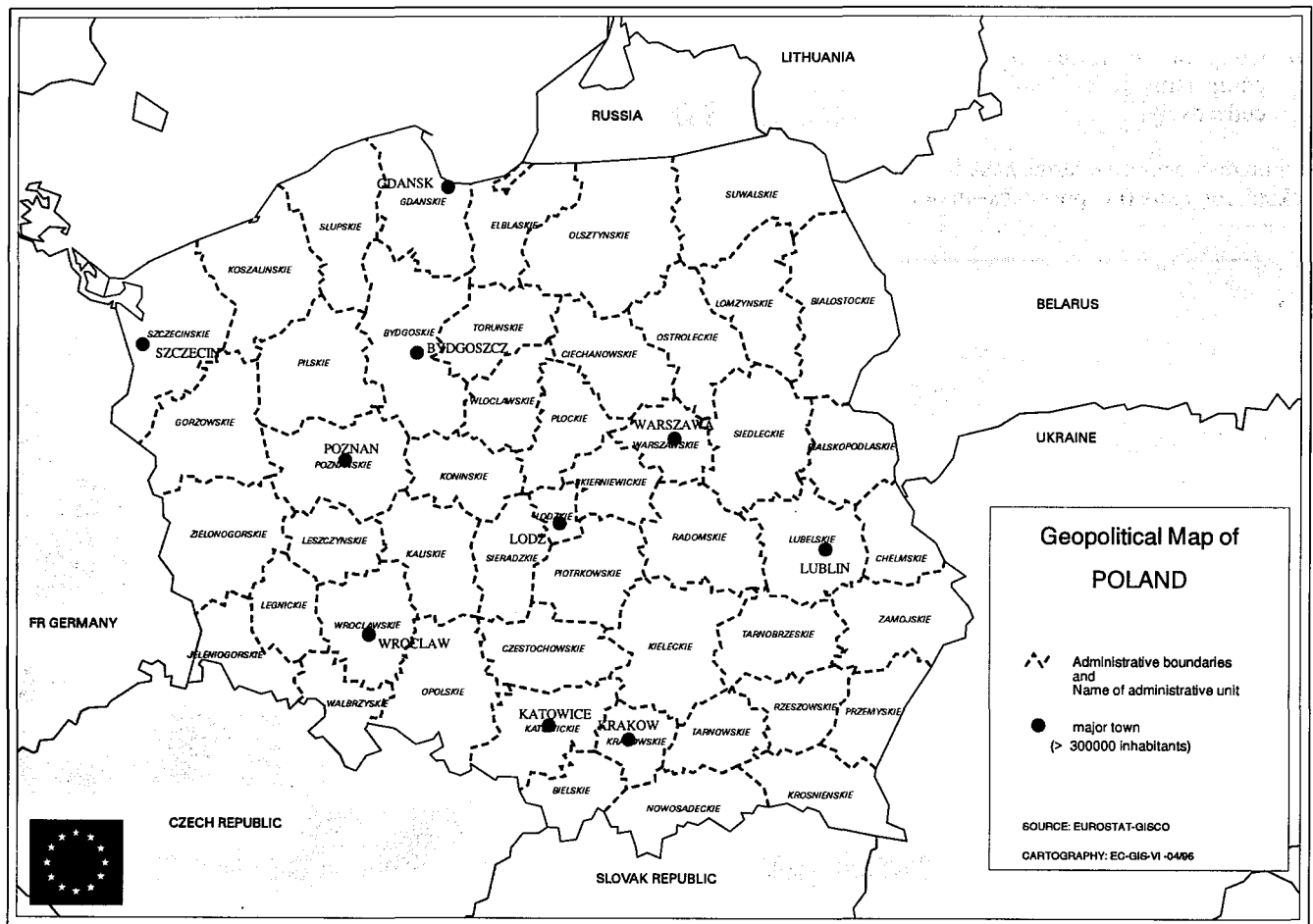
- (a) Private farms. These are classified as privately-owned land which for statistical purposes (i.e. collection of census and survey data) must be greater than 1 ha.
- (b) Cooperative farms refer to private cooperatives comprising individuals who have chosen to operate collectively.

Although cooperative farms have been classified as private in Poland, for years (i.e. pre-break-up of the Communist system)

they have been perceived to be somewhere between private and State owned and are sometimes called quasi-State farms. This stems from cooperative law which was formulated under Communism in such a way that it was not clear who actually owned the assets of the cooperative. Under post-reform changes to cooperative law, cooperatives operate essentially as groups of individual landowners choosing to operate collectively as a cooperative and sharing the benefits.

State farms were land which was State property or was used by State firm(s).

### Appendix 4 Regional map of Poland



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