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## Market intervention policy in Polish agriculture : possibilities of harmonisation with the Common Agricultural Policy of the EC

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**FINAL REPORT OF ACE PROJECT:**

**ERBACE - CT 910033**

**MARKET INTERVENTION POLICY  
IN POLISH  
AGRICULTURE - POSSIBILITIES OF  
HARMONISATION WITH THE COMMON  
AGRICULTURAL POLICY OF THE E. C.**

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**APRIL 1993**

SUBJECT: ERBACE\*CT910033 - Z/9109/0000/033

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## I. GENERAL INTRODUCTION

The main aspects investigated in this research projects are:

- a) Describing and analyzing the Polish agricultural situation
- b) Comparing trends and measures of PAP and CAP,
- c) Evaluation of possibilities to implement market orientated measures into the Polish agricultural policy.
- d) Analyzing the effect of harmonization to the Polish agriculture and the Polish food markets.

When formulating the introductory remarks to the contribution by the participants, two aspects deserve attention on the research project: its importance both in the academic sense, as well as practical, combined with the complexity of the descriptive sphere - explanatory, as well as the normative sphere - policy oriented. The importance of the issues subject to analysis may be indicated by the fact that the association and integration of Poland with the European Communities is viewed by the decision making centers, responsible for programming economic policy as the determinant of the strategy of development of Polish agriculture. The complexity of the research process, evaluation and formulation of particular conclusions is the result of two sets of premises:

- the premises arising from the absence of coherence in the past system of the centrally planned economy of Poland and consequences for the functioning of Polish agriculture in the economic system of the European Communities;
- the premises arising as effect of the lag-behind distance of the level of economic development of Poland, Polish agriculture in relation to the EEC countries.

In this sense the process of integration of Poland with the EEC will no doubt be more complex than was the case in the past with the enlargement of the EEC, and the experience of the integration of Greece, Spain and Portugal with the EEC may be of limited use for Poland.

The analysis of premises, both the absence of coherence in the Polish economic system with the EEC and the lag-behind distance of Poland's development, the agricultural sector constitutes the subject.

When completing the Terms of Reference of the Project, the progress report defines the following issues:

- Assessment of Polish agricultural policy;
- Interval of performance of Polish agriculture in comparison with the EEC.

The Report is as a result of the effort of the following team:

Prof. Dr. Tadeusz Hunek, Rural and Agricultural Development Institute /RADI/ of the Polish Academy of Sciences

- co-author of research performance concept,
- co-author of the written Report,
- coordinator of the Polish contribution to ACE Research Project,
- co-partner of the main coordinator of the Project.

Prof. Dr. Włodzimierz Dzun, RADI,

- statistical macro-economic analysis of the Polish agriculture performance.

Dr. Walenty Poczta, Agricultural Academy, Poznan,

- collecting and processing statistical data of EEC and Polish agriculture performance.

Dr. Tomasz Lone, Agricultural Property Agency of the State Treasury,

- translation into English the Polish part of the Report, subject consultation.

Bs Monika Dobrowolska, RADI,

- PC processing.

Bs Thomas Horne, University of Hohenheim,

- organization and reporting of introductory ACE team meeting, Warsaw, May 1992.

Prof. Dr. Susan Senior-Nello, University of Siena,

- co-author of the written report.

Prof. Dr. Yves Leon, INRA Rennes,

- co-author of the written report.

Prof. Dr. K.H. Kappelmann, FH Nuertingen,

- macro-economic analysis of protection effects on different markets.

Prof. Dr. Werner Grosskopf, University of Hohenheim,

- co-author of research performance concept,
- co-author of the written report,
- coordinator of the Project.

Within the framework of the general terms of reference the various contributions are organised in the following manner.

The first section presents overall reflections of the structure of Polish market and credit policy from the perspective of harmonisation and the Polish economy as a whole. There is special consideration of the proposal that there should be a market situation characterized by a low level of protection. Particular attention is also paid to the question of avoiding a mere technical imitation of the EC model, and instead building a platform for EC integration on the basis of a healthy and dynamic economic structure.

In the second section the issues of income, finance and tax are discussed on the basis of a presentation of the situation in the EC. Some conclusions are drawn about possible changes in the Polish policy of credit and taxation in the light of the EC experience.

The third section deals with the issue of agricultural trade between Poland and the European Community. In particular the questions of the appropriate level of protection for Poland, the claim of EC protectionism and possible Polish trade strategies are discussed.

The Polish contribution presents the present situation of the agro-food sector in the Polish economy. This could essentially be described in terms of the large quantity of resources devoted to agro-food production. Structural adjustment in the Polish agro-food sector is following the model of EC countries, though at present efficiency is much lower than in the community. The process of reform and transformation towards a market economy creates a sound basis for harmonization with the common Agricultural Policy. A simulation model shows the potential and constraints of agricultural policy harmonization from a micro-economic perspective.

The research team would like to express their deep gratitude for being granted the opportunity to carry out this research in the context of the ACE PHARE Programme.

The thanks of the research team are justified on three grounds:

- from a scientific point of view;
- because of the possibility of providing inputs to Polish policy-makers directly involved in the process of integration with the EC,
- and third, because of the convergence created and cemented among the participants in the project.



## II. Adaption of Polish Agriculture in European Integration

### I. Situation at the beginning of the 90's

Poland is undergoing a fundamental economic and political transformation process, which started ten years ago. It seems that this process has now reached its turning point by overcoming the main general difficulties any transition has. The first hopeful signs are an able-bodied parliament and government, elected on a democratic basis, an increasing rate of the GNP as well as in international trade and the nearly total convertibility of the currency.

However this transition requires courage as it is still unprecedented in scope and in its impact. Many details should be clarified at once and there is still much uncertainty regarding the future. The pressure for structural adjustment is strong and even increasing, especially concerning the food and agricultural sector.

The food sector in Poland engages more than one third of the work force, here of more than 20 percent in the agricultural production, and around 40 percent of the production assets. Until 1990 the expenditure for food comprised around 40 percent of the average family budget.

Overall, if you calculate the production costs, Polish agricultural production processes have a high level of international competitiveness. Knowing the problems of the cost-of-production studies and their international comparisons, there are some reasons for assuming, that the long-term world market prices will cover the costs of agricultural production in Poland:

- (a) Polands favourable climate and natural conditions in growing northern agricultural products,
- (b) the low labour costs,
- (c) the low prices or rents of land.

Seen from this angle, the Polish agricultural sector is within a more competitive international scheme than most of the Polish manufacturing industries, including the food processing industry.

The weakness of Polish agriculture lies

- a) in higher input prices, as a result of weak competition,
- b) in the structural disadvantages, represented by smaller units and higher labour input per unit of land, and
- c) in the less developed and inefficient situation of the service as well as of the food processing sectors, depending on the lack of competition and the long period of high subsidies.

Actually Polish agriculture has to fight against a fall in domestic demand for foodstuffs and against a cutback in the demand of the former socialist countries, with the result of declining profitability and growing competition from imports of processed food.

## 2. Long term objectives of integration

The first step in the long way to EC-integration can be seen in the "1991 Agreement of Association", which Poland, together with other middle European countries, signed with the EC. Poland's interests centre on economic development and increasing wealth by division of labour and additional international trade (free trade) and by taking part in the process of distribution of income within EC-regional and structural policy. The EC-members have an analog view. They are interested in the enlargement of their markets for different industrial sectors. Additionally, the general safety policy may play a role for both sides.

From a pure economical view this means, that Poland should adapt its production structure to become more competitive in relation to other international suppliers and increasing its purchasing power. This would make it a more interesting market for the European countries.

In the above mentioned treatment it is planned to create a free trade zone for most of the manufactured goods within the next ten years. There are however some restrictive exceptions for the so called sensible goods like steel, coal, textiles and even agricultural products. Normally there is a longer period of adjustment needed for these products within the process of EC-enlargement. Portugal was,

and still is, a good example for this.

Both the EC and Poland, are in a general sense self-sufficient with regard to food. The northern EC-members and Poland produce the same pattern of agricultural products. The structure of crops planted in Polish agriculture is rather close to the respective structure of EC agriculture.

If you compare the share of employed labour or of the total GNP between Poland, the EC and even the less developed EC-members, the macro figures show the difference in the development level.

	Share of employment <sup>1)</sup> in agriculture	Share of the GNP
Poland	24.4	13.1
EC	6.9	2.6
Greece	24.5	11.
Portugal	17.8	4.1

If you take the average farm structure figures you have some similarities with the mediterranean countries. Poland seems to be near the situation of the three new EC-members, when one compares structural and efficiency indices.

	average Farm size in ha
Poland	6,3
EC	16,5
Greece	5,3
Portugal	8,3

In Spain or Portugal you have also larger farms of some thousand ha like in the Eastern part of Germany.

It shouldn't be forgotten however, that in south European agriculture the growing of fruits, vine and vegetables dominates, which means smaller farm size with often quite reasonable income situations.

Nevertheless, given that the domestic demand in Poland continues to stagnate or grow only slowly in the medium term, maybe by 1.5 percent p.a., the pressure on producers to export agricultural products will have to increase. Today the framework within which a growth in exports to the EC might take place is defined by the Agreement of Association. Given the low shares of Poland in EC agricultural trade, this potential for growth can be described as moderate. The thesis that Poland has an important export potential in the short-term, should be seen relatively. There exists, no doubt, in some parts of agricultural production considerable potential to increase efficiency, especially in crop production. Whenever not this latent production potential could and will be activated, depends on prices as well as on the general economic development around the agricultural sector. The price level for agricultural products depends on the impact on agricultural policy and on the efficiency of the food sector in total. So we should centre our view on both aspects.

### 3. Adaption of what?

It is often said that the agricultural policy in Poland has to come close to, sometimes it even is discussed, that it has to follow the CAP to ensure EC-integration. It is difficult to agree on this opinion, because the CAP itself is moving presently very fast within the own reform process to a new shape. It is too early and also too costly for Poland to try to adapt its own policy measures to the CAP. The present structure of the CAP is not an optimal basis for pushing the development of Polish agriculture. It is still oriented too much to preserve structures instead of strengthening structural changes. And again, the CAP of today may be quite different from the CAP of the end of this decade.

Speculating in following trends you can argue that in five to eight years the internal-prices of the EC and the prices on the agricultural world markets, at least for the main products, except milk products and sugar, will be on a similar level. The average farm size then will have at least doubled. 40 percent of the arable land will not be used for the production of food. Half of the average income of the full-time farmers will have its sources in different measures of agricultural policy concerning direct transfers of income. The self-sufficiency rate may lie around 100 percent, or slightly lower.

Being convinced of the important role the development of agriculture plays in Poland for the economy as a whole, an agricultural policy should be installed that is centred on increasing efficiency which will allow the agricultural sector of Poland to adapt to the situation of EC-agriculture at the end of this decade. If the CAP regulations are adopted to form a new Polish agricultural policy, the effect will be the opposite; the process of structural adjustment will slow down and the opportunities of a fast EC-integration will decrease.

At present, the main discussions and efforts in the field of agricultural policy centre on the problems of the privatisation of land in the Middle and Eastern countries. This is still an important aspect, with an impact on internal politics and is influenced by emotional and ideological standpoints. However this process should be started knowing that it takes time. The best way to find out what a good farm structure could be for the future is the way of competition between the different kinds of farming. It is true that the state owned farms should be divided into smaller units of around 1000 - 3000 ha. Step by step these units could be let to get resources for financing the structural adjustment of the private farms, cooperatives as well as the individual ones. For the development of the cooperative farms it is important that they have the chance to exist, but also that the individual farm member has a fair chance to leave the cooperation, should he so wish, getting his share of land and investments. It is not easy to define these fair chances, but it is a political must to further development of the farm sector.

#### 4. The policy structure<sup>1)</sup>

Generally there are four most important aspects for the adjustment of Polish agriculture to the EC standard and for the maintenance of international competition.

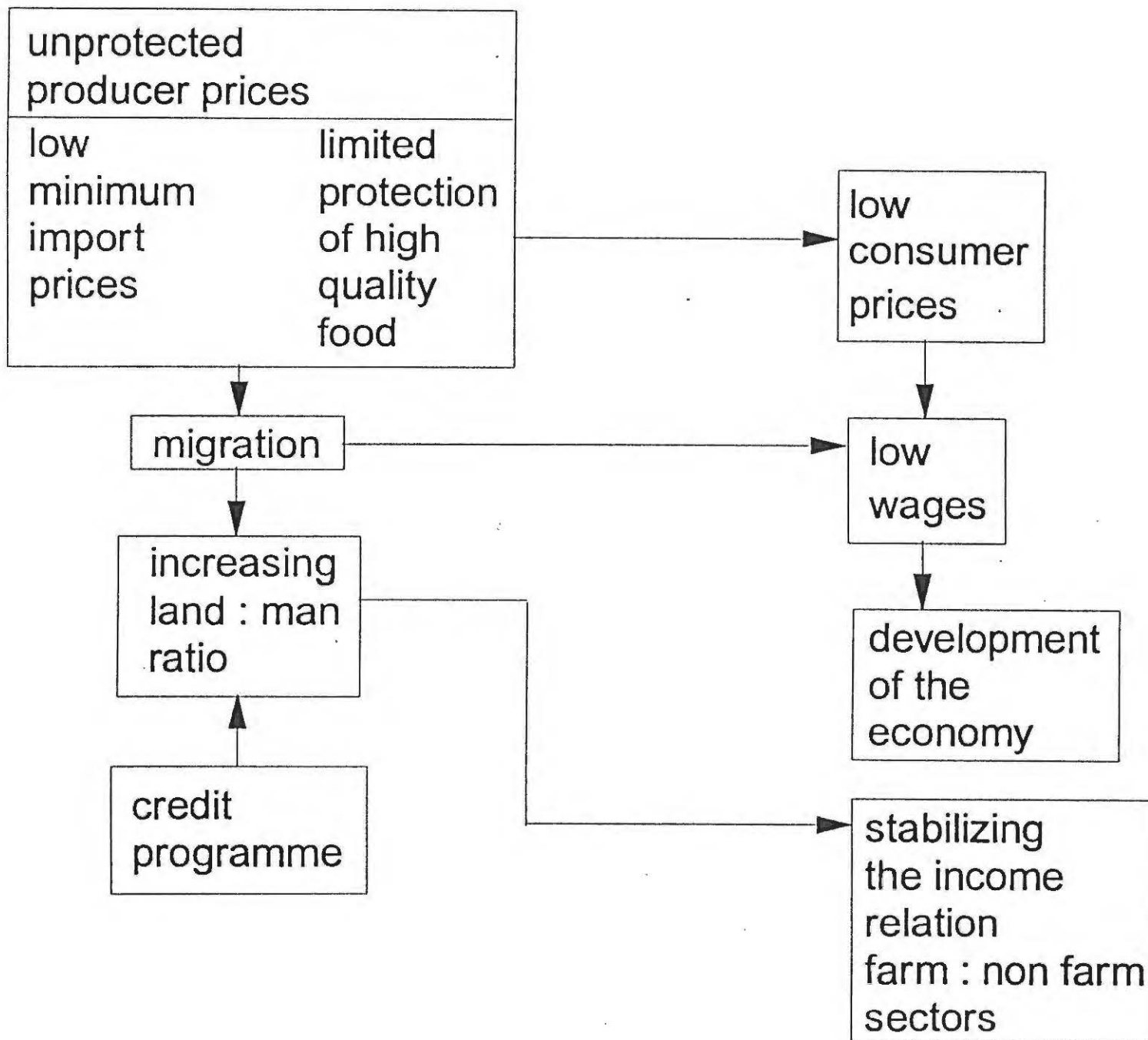
These are:

1. A migration of labour from agriculture not less than 4 percent p.a. on average (1970-1989: 2.1 percent).
2. A credit programme to increase the working capital in agriculture by more than 3 percent yearly (1970-1990: 2.4 percent)

If you follow the general observations, that the capital intensity increases in

---

1) compare the graph next page.



the development process and simultaneously the average productivity of labour also increases with the same rate as the capital intensity, there might be the opportunity of a pronounced increase in the average farm income, if there is a migration of 4 percent and an increase of capital of 3 percent.

3. Increased competition in the service sectors.
4. Increased efficiency in the food processing sector.

Taking these four goals, there are some ways come close to them. If you take the efficiency of the whole economy, the global costs and benefits as a measure, it seems important to set a wide framework of agricultural policy in which the individual incentives could be fruitful, for the individual farmer himself as well as for the economy in total.

First of all it is important, that the producer prices for the main agricultural raw products, like grain, sugar, oilseeds, meat, fruits and horticultural products, should be without political influence and therefore similar to the world market prices. This proposal is not only a question of the financial basis of agricultural policy, but more particularly a suggestion to strengthen the sectoral development and to avoid the retarding impact of price protection.

Intervention measures on the domestic market as well as export subsidies should not be installed. A possibility is the establishment of an import protection on a moderate level. This would ensure a certain degree of stabilization on the domestic market should the world market price be on a very low level for a short period. The minimum import price, for example, could be orientated on the EC-intervention price minus X per cent.

Consequences of such a "price policy" are however, that the profitability of agriculture remains low and inspires farmers, especially younger ones, to look for employment in non-agricultural sectors. The supply of farm land increases, and the price of land continues to stay on the present low level. The remaining farms can grow. The labour supply from agriculture as well as the moderate food prices guarantee low wages in the whole economy, a basis for investment and development.

To support this process, an agricultural credit programme is absolutely necessary. It allows farmers to invest in modern technology and to increase the animal

production. The 1993 Budget for Agricultural Policy supports this idea, but on a very low level (1.5 - 3 Bill. Zł). The financial sources for the adjustment process for agricultural policy must be strengthened. The above mentioned "letting" of a part of state farms could be one possibility. The customs regulations, mentioned in the following point, could be another alternative.

Summarizing, migration from agriculture is necessary. It has two further important aspects for the overall development. It helps to keep down the wages in the non-agricultural sectors so that foreign investments will find the way to the Polish economy. And the "wages" per unit of farm land can continue to stay on a moderate level, because the average farm income per capita can increase by growing farm sizes labour productivity. Both effects are very important for the level of international competition, in manufacturing as well as in agriculture.

Subsidising petrol or fertilizer seems less effective than supporting investments. All farmers benefit from input subsidies. Investment subventions help mostly the better and more efficient farmers. The first measure preserves the farm structure. The last one pushes the structural change especially, if it is used in a selective way. Agricultural inputs like fertilizer, crop protection and machines are international traded goods. If the imports as well as the domestic trade and production come under the pressure of competition, there will be an efficient supply to the farm sector. Therefore, governmental measures should pay high attention to the guarantee of a distinct degree of competition on these input markets. This will be the best way to get those input prices other competitors on the world market have.

At least we have to stress the necessity of strengthening the food processing sector. The present situation is, and this will be the same for further years, that in Poland the costs of agricultural products in general are lower than in the EC, probably less than the average world market prices. An analysis of the cost situation of prepared food complying with EC-standards, (i.e. a special quality degree), the costs are higher than in the EC. This may be one explanation, as to why you can presently observe increasing food imports from western countries to Poland. This situation causes one to think about the role of an "adapted custom regulations" for imports of prepared food. This means that Poland should impose duties for an exactly defined period with a stepwise reduction modus for food products of a high, strictly defined quality. The background of such a suggestion is different. A first point is the necessity to give Poland the chance to develop its own high values oriented food sector. This is insignificant if the essential investments are financed by Polish or foreign investors. Secondly it seems important to widen sources for financial



potentials, in order to build up a strong selective credit program for agriculture. A third point is, that the food industry is relatively labor-intensive. Its development could lead to a decline in the unemployment. And lastly, should Poland at the time of the EC-entry be an equal competitor not only in agricultural raw products but also in high quality processed food. This would have a 30 percent value duty for the next four years, with a reduction to 15 percent for a further four years. Besides such a system is also a point of countervailing within the negotiations of EC-enlargement.

##### **5. How could the EC support the integration?**

Although the transformation of the system will primarily be the task of Poland itself, assistance can be provided by the EC-countries. The main help the EC can offer to Poland, is the opening of its markets for agricultural products step by step. The framework within which a growth in exports to the EC might take place is defined by the agreement of association. Given the low share Poland has in EC agricultural trade, there is some potential for influencing the process of agricultural adjustment in Poland in a positive way. This could be done by increasing the number and also the volume of agricultural products which are allowed to be exported to the EC. If the EC is serious about opening up towards Poland, then it should be prepared to make further concessions within the scope of its own agricultural policy reform, especially in view of the export potential this would bring, and the fact that agricultural imports from Poland are relatively insignificant. In 1990, imports from Poland represented only 0.6 percent of all agricultural imports of the EC. They were not only restricted by so called "non-tarif" conditions like packaging and labeling requirements or sanitary regulations. The scale of import quotas and tariff barriers Polish exports to the EC have to pass, are the main impacts on the EC-Poland trade in agricultural products. The EC is not absolutely free to arrange these conditions concerning the internal problems of the adjustment of its own farm sector; but within the CAP reform and the GATT adoption the role of imports from Middle and Eastern European countries should be taken into consideration, too.

### III. Polish Agriculture Facing EC Agriculture Trends: Incomes, Tax and Finance

#### INTRODUCTION

To define the ways of harmonisation of the Polish agricultural policy with the Common Agricultural Policy of the EC needs a considerable amount of analyses and reflections, of which the basis should be an extensive knowledge of the respective characteristics of both policies and of the situations of agriculture in both zones. The aim of this contribution is to present a synthetic view of the situation and trends of agriculture in the EC as regards agricultural incomes, tax and finance. However, as a part of the work carried out by the ACE Project team, this presentation has a limited scope (Grosskopf et al., 1992). It brings a partial view of the gap existing between Polish and European Community agricultures, so that its conclusions should be considered and discussed in link with those of the other panellists.

Our approach is based on an analysis of past trends and current situations and does not explicitly take into account the inflections in both the CAP and the Polish agricultural policy, that can have been induced by the new links existing between Poland and the EC. Moreover, our insufficient knowledge of Polish agriculture realities introduces an imbalance in the way in which we deal with the issue of harmonisation.

Besides that, the following development will show that harmonisation between EC and Polish agricultural policies should not be discussed without thinking of the noticeable intra-EC differences which exist now in EC agriculture. They concern some crucial issues, which partly depend on macroeconomic policies. Taxation and financing are among these issues which deeply influence the CAP and are far from being harmonised at the level of the EC itself.

In the first section of this contribution we present the current trends of agricultural incomes, in the second and the third sections, we discuss some important characteristics of tax and financing in agriculture.

## SECTION I. THE TRENDS OF FARM INCOMES IN THE EC

In the perspective of harmonization it seems that several issues are of interest : (i) the past trend of agricultural income in the EC, (ii) the disparities between countries, (iii) the relative position of agricultural income compared with income in other industries, (iv) the share of farm income in the total income of farm households.

### *1.1. The long run trends at EC level (1981 - 1990)*

In this subsection, the analysis is based on the first indicator of income proposed in the Economic Accounts for Agriculture (EAA), i.e. Net value added at factor cost in real terms per annual worker units Eurostat, 1992, Terluin, 1991). This indicator is an aggregate built at the branch level. It concerns only farms and do not provide any information on total disposable income of farm households. It is preferred to the other indicators given by EAA (Net income from agricultural activity of total labour input and of family labour input), the evaluation of which needs reliable figures on rents, interest payments and the breakdown of labour force between family and non-family workers. These figures are not completely available at the EC level.

*Major features along the "1981 - 1990" period<sup>1</sup>*

Net value added per worker grew at an average annual rate of 1.6 %. This change can be explained by several factors :

- the growth in agricultural productivity (technical change combined with intensification) led to an average annual increase of final production by 1.3 %,

- such an increase resulted in imbalances on markets due to difficult supply-demand adjustments. As a consequence, real production prices declined by 3.0 % p. year, while final production real value decreased by 1.7 % p. y.,

- CAP was significantly adjusted during this period to limit supply and budgetary expenses,

- changes in intermediate consumptions prices resulted in an upward shift of the output / intermediate consumption prices ratio (in nominal terms).

With other inputs taken into account, real net value added declined by 1.5 % p. y., real net income by 1.7 % p. y. and real net family income by 1.8 % p. y.

Decrease of labour input went on during the reference period (total labour : - 3.1 % p y., family labour input : - 3.3 % p. y.) so that income per worker slightly increased.

*Agricultural income*

Net value added per worker increased by 1.6 % p. y. from "1981" to "1990", i.e., by 18.2% over the period with some fluctuations shown on table 1.

Table 1. Change in Net value added per AWU in real terms ('1981" - "1990" (in % per year))

Periods	NVA per AWU
"1981" - 1984"	1.5
"1984" - "1987"	0.0
"1987" - "1990"	3.5
"1981" - "1990"	1.6

Source : Eurostat, 1992.

<sup>1</sup>. "1981" = (1980 + 1981 + 1982)/3 and "1990" = (1989 + 1990 + 1991)/3.

Movements of Net income per worker and Net family income per worker were comparable to those of NVA per worker in spite of more marked annual fluctuations. This observation is not surprising because of the building of these two indicators. As income variability essentially comes from supply and prices changes, their effect is proportionally bigger on measures in which proportion of supply is important. However, the general tendencies are similar (Figure 1).

Three distinct stages can be observed in income change. During the first subperiod ("1981" - "1984") the noticeable increase in income is due to two complementary movements : slight slow down of the fall in real prices and output / input prices ratio and sharp increase in supply. Subperiod 2 ("1984" - "1987") is characterized by permanent imbalances on agricultural markets, which resulted in supply management policy implementations, and income stagnation. Finally, the combined effects of restricted supply and more buoyant markets led to an increase in agricultural income during the last subperiod ("1987" - "1990").

Analyzing the changes observed in the two components of NVA per worker shows that NVA in real terms steadily declined for the period, as well as total labour input. However, the latter decreased faster than NVA so that NVA per worker grew. In conclusion, NVA per worker rise seems only due to the decline of labour input.

### *1.2. The intra-EC disparities at the member states level*

In this section we compare NVA per worker levels between member states and the changes in NVA per worker relative levels. The comparison is done on the basis of three year averages ("1990" for current values comparisons, "1985" and "1981" for level changes). Data in nominal values and national currencies have been converted in Ecu and SPP using current exchange rates (Eurostat, 1992).

Some methodological remarks previously made should be reminded to introduce the following comparisons :

- data concern only income from agricultural activity,
- using other indicators like Net income per worker or Net family income per worker could lead to other conclusions about the relative position of member states,
- EAA are currently under scrutiny from both methodological and statistical points of view. It is likely that this investigations leads to modifications that should more affect absolute levels evaluations than annual variations ones,
- data in AWU on labour force are not yet completely harmonized at EC level.

Whatever the shortcomings of the comparison are, considerable income disparities appear among member states (Figure 2 and Table 2). On the other hand, the relative positions remain more or less the same during the period.

Table 2. Indexes of NVA at factor cost per AWU in "1981", "1985" and "1990" in ECU and SPA (EUR 12 = 100)

	B	DK	D	GR	E	F	IRL	I	L	NL	P	UK	EUR 12
"1981" PPS	213.9	157.7	100.7	88.8	69.7	130.0	68.1	107.8	119.9	223.9	31.4	168.6	100.0
"1985" PPS	216.1	192.5	98.2	87.9	79.6	129.2	70.9	95.8	131.8	241.0	31.4	164.9	100.0
"1990" PPS	224.2	162.0	101.5	95.9	90.7	130.7	83.8	83.9	132.8	264.1	27.8	141.2	100.0

Source : Eurostat, 1992.

Evaluating "1990" incomes in PPS, the Netherlands and Belgium are at the top level with indexes more than twice the Community average. Then come Denmark, United Kingdom, France and Luxembourg (from 30 to 60 % above the average). Greece, Germany, Italy and Spain are in a middle position. In Portugal income seems much lower reaching only 28 % of the average. A comparison using ecu instead PPS would have given slightly bigger gaps between member states with an improved position of the top countries and a worsened one for Portugal.

Looking now at the changes in relative positions of member states during the decade, it appears that incomes in the Netherlands, Spain, Ireland, Luxembourg improved significantly while the contrary was observed for UK and Italy. In member states where income level was under the Community average positions improved clearly (cases of Greece, Spain and Ireland). Portugal income position remained stable.

### 1.3. Relative agricultural income

Following Terluin, we define the relative agricultural income as "the ratio of income from agricultural activity per AWU to income in the rest of the economy per worker". Some methodological difficulties arise to find similar income concepts for agriculture and the rest of the economy, due to the specific nature of agricultural activity and the mixed character of farm income, which rewards both family labour input and own capital. Terluin proposes two assessments of the relative agricultural income. The first one is based on the ratio of NVA in agriculture and NVA in the whole economy. Using NVA instead of Gross Value avoids distortions due to the inclusion of depreciation. The second one is based on the ratio of Net

income in agriculture to NVA in the whole economy. In this case the author aims at avoiding the distortion caused by the inclusion of rents and interests in agricultural NVA, which are generally paid to the rest of the economy and actually cannot be considered as a part of agricultural income (Terluin, 1991, p. 98).

However, these two ratios follow a similar trend at EC as well as national level during the period studied by Terluin : 1973-1987. Therefore, our presentation is based only on the latter one (Table 3).

**Table 3. Relative agricultural income in the EC, based on net income from agricultural activity (ratio of net income from agricultural activity of total labour input per AWU to NVA in the whole economy per worker, current prices**

	D	F	I	NL	B	L	UK	IRL	DK	GR	E	P	EUR 11	EUR 12
1973	0.51	0.66	0.57	0.85	0.92	0.41	0.95	0.53	0.50	0.58	0.33	:	0.49	:
1975	0.48	0.54	0.52	0.73	0.75	0.38	0.83	0.51	0.34	0.56	0.28	:	0.43	:
1980	0.29	0.43	0.39	0.52	0.60	0.34	0.63	0.30	0.21	0.59	0.28	0.25	0.35	0.33
1985	0.26	0.42	0.36	0.65	0.64	0.45	0.55	0.31	0.46	0.64	0.29	0.22	0.36	0.34
1987	0.25	0.41	0.34	0.66	0.59	0.47	0.59	0.36	0.29	0.65	0.30	0.21	0.35	0.33

Source : Terluin, 1991.

On the whole, relative agricultural income tended to fall from 1973 to 1980 from a level of about one half the income in the whole economy to one third in 1980. Then it remained stable until 1987. This average trend is confirmed when examining the case of the member states.

#### *1.4. Total income of agricultural households*

Total income of farmers is not well known at the level of member states as well as at the EC level. Nevertheless, scientific work on this issue is in progress and some general remarks can be done (Hill, 1992). First, agricultural households benefit from large off-farm incomes ; on the average, non-farm incomes account for one-third of the total income of farm households. Second, due to the disparities in fiscal and other compulsory charges between the member states, with a comparable total income the levels of disposable income can differ. Third, it seems that on the average agricultural households have larger disposable income than other households. Nevertheless, their relative position seems to have worsened during time. Fourth, the total income of agricultural households is more stable than their farm income.

### *1.5. Are there relevant lessons in a perspective of harmonization ?*

The analysis carried out above stresses the complexity of the income issue as far as harmonization of agricultural policies is concerned. It seems clear that a direct comparison of income situations between the EC and Poland is not possible. Nevertheless, lessons are to be drawn from the aforementioned developments.

First, in the EC, during the last ten years, there was a long run drop in the agricultural net value added at the aggregate level due to the imbalance between supply and demand. On the contrary, the figure per agricultural worker grew because of the decline in the agricultural labour force. It seems reasonable to suppose that Polish agriculture will face the same kind of difficulties as EC agriculture on commodities markets. Consequently, a long run increase of income per worker will depend on a substantial fall in labour force. Such a statement has obvious consequences on Polish structural and regional policies, given the high number of small holdings and the existence of productivity gaps between agricultural regions. Second, although an aim of equity had been stated by the CAP since its origin, the income per worker in the whole economy remains significantly higher than the same in agriculture and the trend is not in favour of agriculture (from twice in 1973 to three times in 1987). Otherwise, agricultural households in the EC benefit from large off-farm incomes which allow them to earn a higher total income than other households (Hill, 1992). Although this last result is still to confirm, it means that, on the average, in European market-oriented economies the income parity between farmers and other workers depends deeply on the availability of non-farm incomes for the farmer. As a result, if an income parity policy between farm households and other households is considered as desirable, it should be thought in the framework of global economic policy and regional policy measures.

## **SECTION 2. FINANCING POLICY IN EC AGRICULTURE**

### *2.1. An overview of intra-EC national specificities*

The financing of agriculture vary considerably from one EC country to another. Six of them : Denmark, France, Germany, Ireland, the Netherlands and United Kingdom are studied here.

Two distinct credit approaches are found in these countries. In Denmark, Ireland, the Netherlands and United Kingdom government intervention in the credit system is limited, i.e.,



credit management is essentially under banks responsibility, which implement an economic and commercial policy in agricultural financing. On the contrary, government's regulation is much heavier in France and Germany and banks act more as government agencies.

Some important features proceed from this fundamental distinction. First, let us examine the case of the Northern group of countries (Denmark, Ireland, the Netherlands and United Kingdom). There, farms are considered like the enterprises of other sectors and in principle do not deserve any specific treatment. More specifically, government interventions are limited as regards to lending policy. As a consequence this policy may be characterized by : (i) low or not subsidized loans, (ii) interest rates at the same level as in other industries. They depend on market, are often variable and to some extent may be fixed under mutual agreement, (iii) possibility of contracts adjustment before term of the loan exists. On the other hand, lending policy is generally based on a overall financial approach of the enterprise, i.e., the business's overall financing needs are considered, and there exists an actual partnership between the bank manager and the farmer.

The German situation is comparable to the current French one. Several banks are involved in agricultural lending programs granted with government funds. To be eligible to subsidized loans, the farmers have also to fulfil strict conditions, although soundness and liquidity of enterprise influence the loan characteristics. Unlike to France, subsidization leads to reduce the loan rate by a fixed proportion, i.e., the interest paid by farmers vary with the market interest rate.

The above analysis contrasting the national situations may be summarized using a financial risk approach. With the organization existing in Denmark, Ireland, the Netherlands and United Kingdom banks play in agriculture the same role as in other industries. They lend money to enterprises on economic and financial criteria. Profitability, solvency and liquidity of farms determine the kind of loan they can be eligible to. Government influence seems marginal unless the case of financial crisis and its policy is implemented essentially through direct subsidies to farmers and loan guarantee funds. In so doing, farmer is considered as a manager, whose job includes some economic risks. In those countries level of risk run both by bank and farmer can be high. On the contrary, the approach prevailing in France and Germany minimizes the financial risks taken both by banks and farmers at the expense of farmer's liberty of choice in matter of finance. In both countries government exerts more influence on farmers' decisions in counterpart of financial risk it takes, especially in France.

## *2.2. Adequation between credit policy and economic situation of agriculture*

The relevance of both approaches of credit policy that we have just presented depends largely on the development stage of the industry evaluated through economic results of farms

(Blogowski et al., 1992). If adequacy seems correct in United Kingdom and the Netherlands, serious difficulties appeared in Ireland and Denmark's agriculture during the 80's. In both countries, where farm structures and profitability do not provide as high incomes, farmers faced a severe financial crisis when interest rates grew considerably at the beginning of the decade.

In comparison, although French farms have on the average a profitability comparable to the Dutch farms, they benefit from a highly risk-protector credit system. Its current change to a more risky one should not actually jeopardize French agriculture (Figure 3). The picture appears different for Germany farms, the lower profitability and the higher financial burden of which may justify keeping the existing system to some extent.

Consequently, given the stage of development of Polish agriculture, a state-regulated financing policy seems desirable, at least in the mid-term period. Such a policy should mix various tools and particularly : (i) the stabilization of interest rates to minimize the financial risks run by farmers and banks ; (ii) a moderate subsidization of equipment loans ; (iii) eligibility rules directed towards viable farms.

### SECTION 3. SOME FEATURES OF INCOME TAX AND FARMS TRANSFER TAXATION

#### *3.1. Income tax in France, Germany, Italy, The Netherlands, United Kingdom*

As regards the income taxation regimes a distinction between two groups of countries should be made . In France, Germany and Italy, in which the majority of farms is small-sized from an economic point of view the predominant system is founded on a standard method of taxation, specific to agriculture. On the contrary, the prevailing system in the Netherlands and United Kingdom is based on the assessment of actual profit of enterprise, like in other industries.

In these two countries farmers are charged at a progressive rate ranging from 35 to 60 % of their actual profit (Netherlands) and 25 to 40 % (United Kingdom). Although the tax level seems lower in the latter country it is noteworthy that some reliefs tend to alleviate the burden of the Dutch farmers. They are eligible for various deductions in so far as self employed workers. Obviously, the British and Dutch regimes are well-adapted to large farms with detailed accounts. Accounts-keeping is mandatory for farmers in both countries.

This system of taxation contrasts with the ones which are in force in the other countries. Actually, the French, German and Italian regimes reflect an opposite conception of agriculture, the particularities of which deserve a specific treatment in matter of taxation. The major concern in organizing taxation regimes seems to have been alleviation and simplification. Alleviation comes from the underestimation of the taxation basis (assessment of the "taxable profit" in France, the "unit value" in Germany, the "agricultural return" in Italy) allowed by the absence of accounts-keeping obligation. Simplification is the consequence of using standard references, which do not reflect the actual economic results of the farms. German and Italian taxation systems give a good example of this conception with standard assessment bases even for large farms. Moreover, in Germany tax is related to an assessment of the farm value and not to its actual or even standard results. Situation is changing in France with the current development of the normal regime based on the taxation of actual profit at a progressive rate.

Although such systems aim at alleviating the tax burden of small farmers, it is by no means obvious that this is the case everytime. A detailed comparison between countries should be conducted to make this point clearer.

### *3.2. Patterns of taxation of farms transfer in the EC*

Taxation requirements vary considerably among member states as far as holdings transfers are concerned. Consequently, government's levies have different effects on management when transfer is prepared and completed. On the other hand, taxation disparities can be high according as farm is inherited or purchased (see Danish case).

On the whole the comparison of the various regimes shows :

(i) countries in which the levies are low : Germany, Netherlands and Italy. In Ireland the taxation is alleviated for small holdings,

(ii) countries in which the transfer of farms does not deserve any specificity. Levy is often heavy : the case of Belgium and France.

To give a picture of this conclusion one can consider the following comparison. It concerns a 300 000 ecus holding transferred in 1986 to two children in France, Germany and Italy under the standard taxation regimes existing in these countries. Taken into account the national specificities, the rate of taxation is 13,4 % in France, 8,5 % in Italy and 4.4 % in Germany. Consequently, the taxation burden is three times heavier in France than in Germany <sup>2</sup>.

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<sup>2</sup>. This example is detailed in Perrier-Cornet et al., 1991.

*3.3. Are there any prospects of harmonization within EC ?*

The harmonization of the fiscal policy (apart from the case of indirect taxes) is not yet on the agenda of the European Single Market. Consequently, it seems improbable that national taxation systems change in the near future. Nevertheless, the above description of both income and farm transfer taxation organisations shows that (i) a possibility of harmonization of income taxation exists, at least for several member states, (ii) the gap between the member states is likely to be difficult to reduce with regard to farms transfer taxation.

Concerning income tax, the accelerated adjustment of agriculture in EC may induce the development of the pattern of taxation encountered in United Kingdom and the Netherlands, i.e. the implementation of common law to agriculture. France is on this way. It is likely that such a change occurs slower in Southern member states as well as in Germany. However, the harmonization of Polish income taxation system could be thought on that basis.

The spectrum of taxation in the case of farms transfer in EC is particularly large and until now, no perspective of harmonization seems to be envisaged.

However, from an international competitiveness of farms perspective, the current reflections on farmland ownership in Poland should take into account the modes of transmission of farm and their taxation. Indeed, the above mentioned example shows that their consequences on financial position of farms are by no means negligible.

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Figure 1. Measures of income at EC level. Changes over the "1981" - "1990" period

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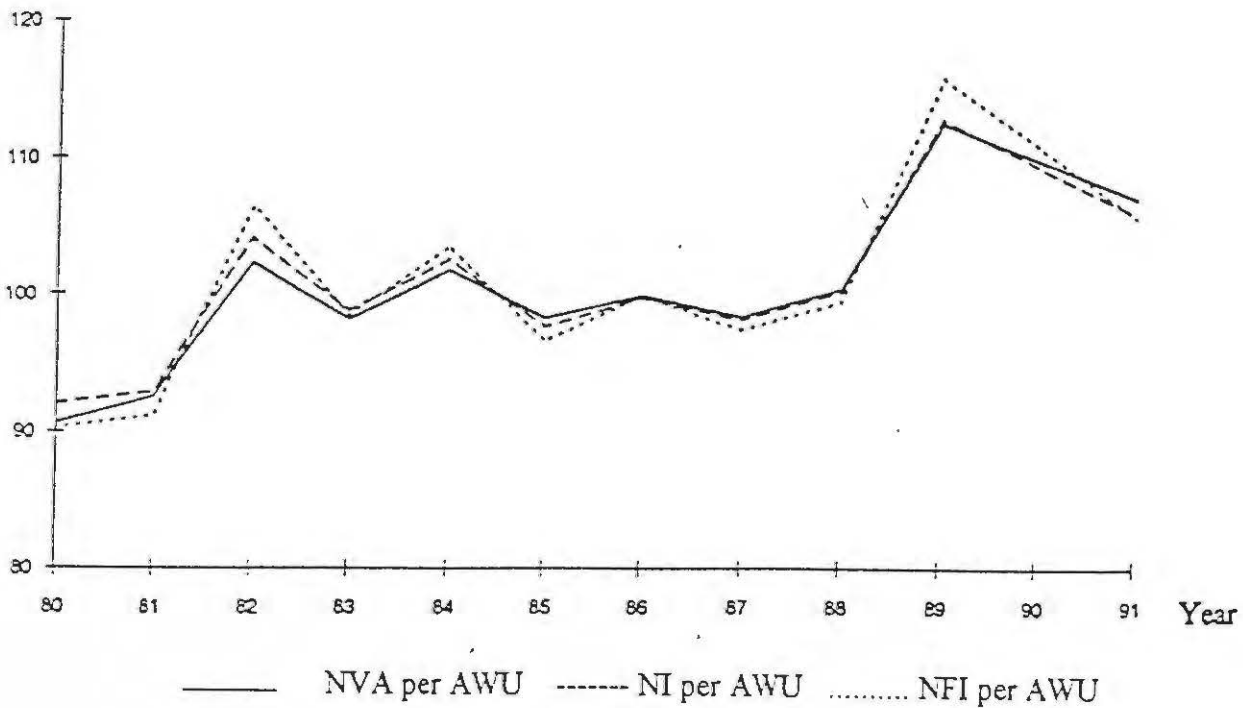
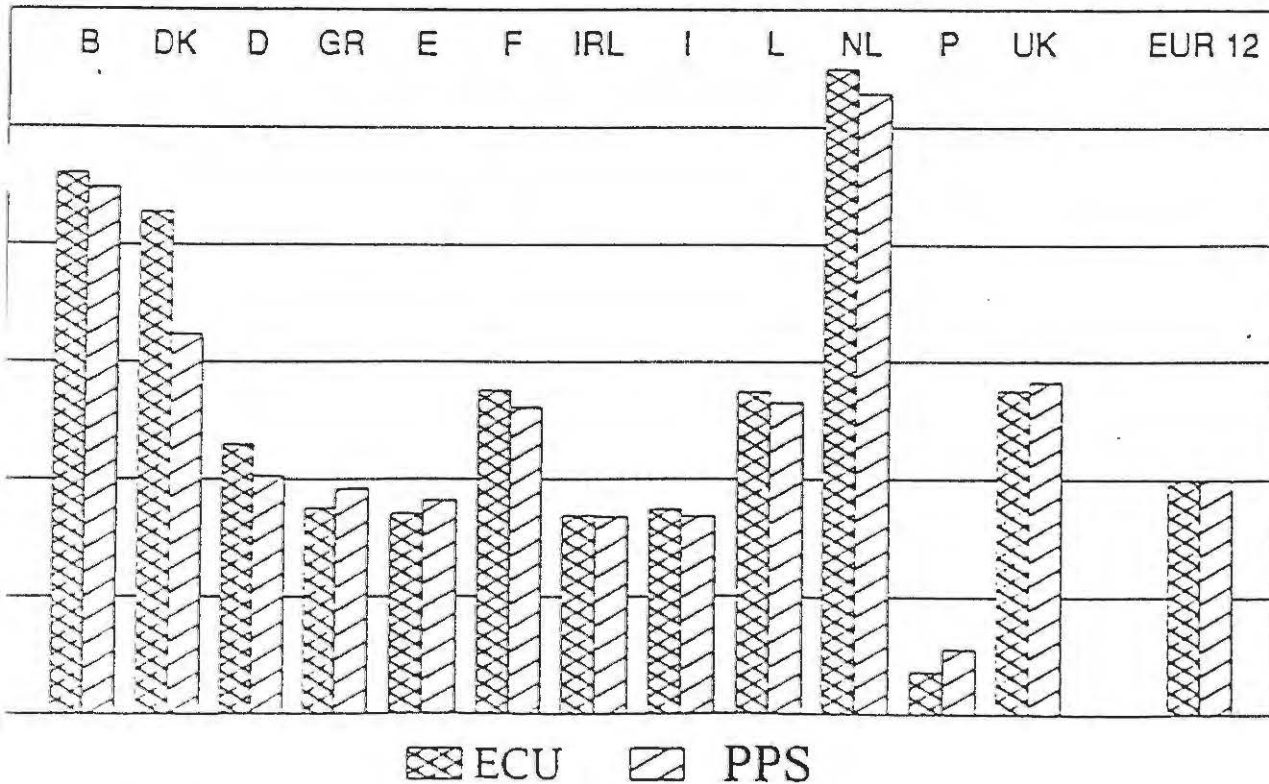


Figure 2. Indexes of NVA per AWU in "1990", in ECU and PPS (EUR 12 = 100)



Source : EUROSTAT, 1992.

Figure 3. Sensitivity of some European agricultures to financial burden (1986/87)

Financial burden		Sensitivity	Profitability
<u>Interests</u> NVA	Interest rate	<u>High</u>	<u>Economic return (1)</u> Total assets
38	9,8	DK	9,4
18	4,6	D	10,5
16	14,8	IRL	6,6
16	11,0	UK	8,5
14	6,5	NL	12,3
10	6,7	F	13,5
		<u>Low</u>	

(1) Economic return = NVA - Rent - Wages + Depreciation.

Source : Eurostat, 1992 and CEC, 1990.

## IV. Protectionism in Polish-EC Agricultural Trade

### 1. Introduction

The aim here is to examine the nature and level of EC agricultural protectionism in order to draw certain conclusions and policy prescriptions for Polish agriculture. Though the main emphasis is on trade policy, the very nature of CAP mechanisms renders a watertight separation of domestic and external implications impossible.

In discussing the level of EC protectionism, distinction should be made between policy measures aimed specifically at Poland, and those influencing agricultural trade with third countries in general. It is also necessary to distinguish between the policy implications for Poland in the short to medium term, before accession to the EC, and the longer run adjustment to EC membership, though the two overlap. The EC Commission is still considering Polish accession to the Community as an "end of century" question, and it seems probable that the process of enlargement will proceed simultaneously for the members of the Visegrad Group<sup>1</sup>. It also seems likely that, as in the case of the EFTA candidates for EC membership (Sweden, Austria and Finland, probably soon to be joined by Norway), the Community will insist that a large part of the adjustment to the CAP occurs before accession.

Following a brief discussion of the nature and level of EC protection, there will be an indication of likely developments in EC agricultural trade policy prior to Polish accession, and of certain consequences of EC enlargement for agriculture. Finally, attempt is made to draw policy prescriptions.

### 2. Agricultural Protectionism in EC-Polish Agricultural Trade

The basis of the claim to EC agricultural protectionism is that the Community:

- a) renders it more difficult for Polish products to compete on world markets, in particular because Poland cannot afford export restitutions on the scale practiced by the EC
- b) boosts Community exports to Poland, and
- c) restricts access to EC markets.

With regard to the claim that the CAP renders it more difficult for Polish products to compete on world markets, the longer Report here includes a survey of measures of EC agricultural protectionism, and of the results of models attempting to measure the impact of the CAP on the level and variability of world prices.

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<sup>1</sup>Poland, Hungary and the Czech Republic and Slovakia



One of the most widely accepted measures of agricultural protection is that of PSE's or producer subsidy equivalents. PSE's can be defined as the subsidy that would be necessary to replace all the agricultural policies used in a country and leave farm revenue unchanged. The measure can be expressed in direct money value, or as a percentage of value of production at farm gate. According to the OECD, the total PSE for the EC fell slightly from 68 billion ECU in 1990 to 67.6 billion in 1991, a figure which includes the former GDR. The percentage PSE remained unchanged at 49% over the same period.

Allowing for the difficulties, if not impossibility of making comparisons, the results of all the models attempting to estimate the impact of the CAP on world prices considered here indicate that CAP liberalisation would raise world prices and reduce their variability. The studies generally suggest that the greatest price increase would occur for dairy products (with estimates varying from 7.5%-10.5% (Matthews (1985) to 31.6% (Roningen and Dixit (1990)) for unilateral EC liberalisation. According to the studies, large price increases would also occur for beef and sheepmeat, sugar, wheat and coarse grains.

These studies therefore lend support to the claim that importing countries have been able to benefit from the lower prices on world markets as a result of the CAP, while exporting countries have suffered from a combination of lower prices and greater instability on world markets. The results also suggest that countries exporting meat and livestock, such as Poland (see Table 1), may have been able to benefit from lower prices and feedstuffs as a result of the CAP, but this advantage was generally more than offset by the even greater reduction in prices for meat products. It does however emerge<sup>2</sup> that EC protection of pigmeat, which is of particular importance to Poland, is less than for many other products.

Table 1: Polish Production and Trade of Principal Agricultural Products in 1991  
Thousand tonnes

	Production	Trade balance*
Wheat	9170	50
Coarse grains	18,395	-50
Oilseeds	1128	260
Beef & veal	726	6
Pork	1910	50
Sugar	1900	32

\*exports-imports

Source: USDA

Hamilton and Winters (1992) have used a modified version of the model developed by Tyres and Anderson to assess the consequences of the liberalisation of Central-East European trade; a successful conclusion to the GATT Round, and the integration of the smaller Central-East European countries into the Community. Central-East Europe is defined as Poland, Bulgaria, Czechoslovakia, Hungary, and Romania, and the reference scenario assumes a situation of no liberalisation in those countries. The two authors stress that the actual numbers should be treated with caution, though they believe "the basic message robust".

<sup>2</sup>See in particular the results of the OECD (1987) and Matthews (1985) studies

Assuming a "conservative" increase in agricultural productivity of some 15% and an increase in GDP of 10% in Central-East Europe, the two authors estimate that trade liberalisation of Central Europe in an unchanged world trade regime would lower the world prices for wheat (-5%), beef (-1) and pork (-1). In contrast there would be a 10% increase in world prices for dairy products.

According to Hamilton and Winters, the combined effect of a successful GATT Round and the liberalisation of Central-East European trade would lead to increases in world prices for wheat (16%), dairy products (80%), beef (48%) and pork (10%) in comparison with the reference scenario.

The third simulation considers the impact of integrating a liberalised Central-East Europe into the Community. This involves making the extremely restrictive assumption that to avoid bankrupting the EC budget, the combined net export volume of each commodity from Central-East Europe and the Community is the same as in the reference scenario, so that world prices remain constant. According to this scenario Central-East European farmers would enjoy price increases of 41% for wheat, 16% for dairy products, 85% for beef and 32% for pork. This would induce Central-East European farmers to increase their supply by between 26% (dairy products) and 78% (beef). As a result these countries would increase their export volumes (by between 15% and 85%, depending on the product), but consumption would decrease by 13% for pork, 23% for beef, 2% for wheat, and would remain unchanged for dairy products. The issue of integration into the EC will be taken up again below.

As the authors point out, the reasons for the assumed productivity increase varies according to the Central-East European country in question. In the case of Poland it would arise because inefficient distribution of inputs and outputs and the under-capitalisation of private agriculture kept yields low. Cochrane (1990) estimates that by 2000 productivity gains in Polish agriculture could close the gap with Western Europe by a half. However fragmentation is also a major factor contributing to low yields, and it is uncertain how quickly the structural shortcomings of Polish agriculture can be overcome.

According to Hamilton and Winters, consumers' demand is determined by long-run price and income elasticities of demand and by population growth. However, in the case of economies in transition it is essential to take into account the correction of distortions arising from the previous price system; and the reduction in both waste and the hoarding (also on the part of households) endemic to a shortage economy.

With regard to the claim that Poland cannot afford export restitutions on the scale practiced by the EC, both the May 1992 CAP reform, and an eventual successful GATT agreement would reduce EC spending on export subsidies. However the additional burden to national budgets implied by greater reliance on direct income supports is likely to be of concern to Poland on accession to the Community.

Turning to the question of EC agricultural exports to Poland, according to Eurostat data, these increased from 346 million ECU in 1988, to 784 million in 1989, and 628 million ECU in 1990. Over that period there was an increase in EC exports to Poland of fruit (43%), cereals (20%), but a reduction in EC exports of meat (-50%) dairy products (-40%) and sugar (-19%).

It seems probable that, at least initially, liberalisation of Polish trade caused an overreaction on the part of Polish consumers, convinced of the "inferior quality" of Polish products, and in particular of processed foods. It also seems likely that the quality gap can be narrowed relatively quickly for many agricultural products. Joint ventures with Western agribusiness firms could play a crucial role in this context.

As part of the PHARE Programme of aid to Central-East Europe, the Community granted food supplies to Poland worth 336 million ECU in 1989, and a further 200 million ECU in 1990. There has been criticism of this measure as causing market disruption and being more tailored to EC than Polish needs. The food aid came from EC intervention stocks or preventative withdrawals which would otherwise have been destroyed, as in the case of citrus fruit, and, for instance, the Polish Government announced that it had less need of olive oil in the second delivery. The aid also occurred at a time when reduced losses and the collapse in intra-CMEA trade led to the emergence of a Polish agricultural surplus.

During 1990 Poland introduced a very liberal trade policy, reducing tariffs and other import barriers. The impact of this liberalisation was compounded by the unintended consequences of the combination of a fixed nominal exchange rate and higher than expected inflation. In 1991 this policy was modified, and relatively high customs duties were introduced, in particular for many agricultural products. From August 1991 duties on imports of live animals, and meat ranged from 10-35%, on dairy products from 35-40% and on many processed products from 30-50%. From 1992 import licensing was introduced for dairy products<sup>3</sup>.

The introduction of such measures owes much to the Polish farm lobby. Moreover justification could be found in the rather controversial proposal of, the Polish/EC/World Bank Study (1990), which suggested that the Polish government should use "all types of border measures including quantitative restrictions", as well as a system of import taxes and subsidies to support the domestic prices of cereals.

The argument in favour of agricultural protectionism was that it is practised by everyone else, and Poland could not place itself at a disadvantage vis a vis other agricultural exporters such as the EC. In addition, infant and senescent industry arguments could be drawn on in favour of protection. Against this, however, Polish agriculture has an urgent need for structural reform and modernisation, and excessive protection could reduce the incentive for such changes. Furthermore, temporary protective measures tend to become permanent, and, as Section 4 below shows, farm lobbies are particularly effective in pursuing their interests, often at the expense of the general public.

Turning to the question of access to the EC market, EUROSTAT data indicate that EC agricultural imports from Poland increased from 801 million ECU in 1988 to 1003 million in 1989 and 1242 million in 1990. In particular there were increases in EC imports of dairy products (213%), live animals (33%), fruit (29%) and sugar, but a 25% fall in EC cereal imports from Poland. However, in absolute terms the trade was relatively low at the beginning of the period, and the Polish claim is that the increase should have been more rapid.

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<sup>3</sup>Gawlikowska-Hueckel and Zielinska-Glebocka (1992)

### 3. Likely Developments in EC-Polish Agricultural Trade

The main developments likely to influence access to the EC market before Poland joins the Community can be summarised as follows:

EC measures specifically aimed at Poland:

- i) *The Association Agreement and the possibility of obtaining further concessions in the context of the Association Council;*
- ii) *Triangular Arrangements;*
- iii) *the PHARE Programme.*

The implications of the CAP for trade with all third countries:

- i) *The consequences of the May 1992 reform;*
- ii) *the likely introduction of further CAP reform;*
- iii) *the implications of a possible successful outcome to the Uruguay Round;*
- iv) *the impact of the Single Market Programme from January 1993.,*
- v) *possible changes in EC policy as a result of the enlargement to include EFTA countries.*

Table 2 sets out some of the agricultural trade concessions granted to Poland under the Association Agreement. These concessions are frequently criticised as being inadequate in Polish quarters, and it should be pointed out that the beef quota for the first year amounted to only 7.3% of Polish exports, that of swine and pork to 11.4%, and that of butter to 10%. Moreover, Article 21 of the Agreement states that, despite the concessions, if imports cause serious disturbance of markets, there should be consultations between the two parties, and pending a solution "the Party concerned may take the measures it deems necessary".

However, it has to be recalled that negotiation of the Association Agreements temporarily broke down on the issue of agriculture in September 1991. This was ostensibly due to protests on the part of French farmers, but farmers in other EC countries, such as Denmark, Ireland and the UK were equally opposed. Moreover, EC producers maintain that in some cases, such as for certain types of soft fruit and live animals, increased imports from Central-East Europe have led to market disruption by depressing internal EC prices.

The Europe Agreement also stated that Poland and the Community should:

*"examine in a regular basis in the Association Council, product by product and on an orderly reciprocal basis, the possibilities of giving each other further concessions".*

Table 2: Selected Quotas for Polish exports to the EC under the Association Agreements subject to levy and duty reductions\*

	First year tonnes	Fifth year tonnes
Beef	4000	5.600
Swine and pork	8000	11,200
live sheep and goats	6600	9000
skimmed milk powder	3000	4100
Butter	1,000	14,00

\* These reductions amount to 20% in the first year, 40% in the second year and 60% in successive years

The "triangular arrangements" were a response to the collapse in intra-CMEA trade, but they were also conceived as a way round the impasse in negotiations of the Europe Agreements. They too are frequently criticised by EC farmers as running counter to Community interests. The triangular arrangements entail using EC export credits to help the former Soviet Republics buy foodstuffs from the smaller Central-East European countries, including Poland. In October 1991 a Community contribution of up to 750 million ECU was agreed for this purpose. The deliveries under triangular arrangements would reduce the import quotas granted by the EC.

In the context of the PHARE programme, GSP (General System of Preferences) treatment was extended to Poland in 1990. *Inter alia* this entails the reduction of EC import levies on fixed quotas (or in some cases total imports) of various agricultural products. However, the existence of seasonal restrictions and supplementary levies at times limits the effect of the concessions. Moreover, under pressure from EC producers, the final GSP concessions are generally less generous than the EC Commission's original proposals. In particular, a number of products of particular importance to Hungary and Poland were included in the 1989 list, but not that of 1990<sup>4</sup>.

The May 1992 reform introduced fundamental changes in certain CAP mechanisms, but left continuing overproduction, and excessive budgetary spending in the dairy, sugar, fruit, vegetable and wine sectors. There is also an urgent need to deal with the growing surplus of beef. Without further reform of the CAP, the provisions for agricultural spending set out in the Delors II package on EC financing will prove patently inadequate. In part the budgetary situation has deteriorated due to the operation of the agrimonetary system (and in particular, the switchover system) in a time of currency turmoil, but at a more fundamental level, effective CAP reform has to be extended to all sectors.

This is not the place for a detailed discussion of the implications of a successful conclusion to the Uruguay Round, particularly as the present French and Italian opposition to the November 1992 agreement between the US and EC Commission on agriculture does not augur well for the outcome of the GATT negotiations. However if agreement were reached, Polish agricultural exports would benefit from higher, and more stable agricultural prices on "world" markets, improved access to the EC and the greater transparency implied by tariffication.

On possible implications of the Single Market. Central-East European countries appeared particularly concerned with changes in standards and health regulations. Cooperation, exchange of information and joint ventures would seem the best means of addressing these questions. Moreover, as also mentioned in the Association Agreement, Poland may have an advantage in certain types of nature-friendly agriculture. Traditionally there has been much lower use of pesticides than in Western Europe, though this advantage may have been offset by industrial pollution in certain areas.

As a result of all these developments, when Poland finally joins the Community, it will find a very different CAP. Furthermore, it seems

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<sup>4</sup>For example, the conditions were rendered less favourable for jam, boar meat, honey and mushrooms.

unlikely that the CAP could survive unscathed from being extended to large agricultural exporters such as Poland and Hungary. The main pressure for reform of the CAP arises from its unacceptable burden on the EC Budget and from the protests of other agricultural exporters, in particular in the GATT Round. Pressure for change from both these sources will increase with an enlarged Community.

As mentioned above, in connection with the Hamilton and Winters study, the accession of certain Central-East European countries to the EC will alter production and consumption both in those countries, and existing EC members. If, as seems likely, EC prices remain above "world" levels, consumption could be discouraged to such an extent that it might even be necessary to install a system of social transfers to enable households in Central-East European countries to meet their food bill (as occurred in the case of East Germany).

The May 1992 CAP reform marked a step away from heavy reliance on price mechanisms and towards direct income supports in the Community, at the same time shifting part of the financial burden of agricultural policy back to the national budgets of EC member states. If this trend continues, the additional burden to national budgets could weigh heavily on the Central-East European countries likely to join the Community.

#### 4. The New Political Economy Approach to explaining protectionism

It is sometimes argued that the reluctance of the Community to grant agricultural trade concessions to Poland is the result of Poland's weak bargaining position. However, it must be pointed out that a similar reluctance is evident in, for instance, the EC stance towards the US, even when the outcome of the Uruguay Round is at stake. Repeatedly the discussion here has returned to the resistance of EC producers to agricultural trade concessions, and this question will now be taken up. The aim here is not to justify EC agricultural protectionism, but the New Political Economy provides a framework<sup>5</sup> which helps to explain the strength of the EC farm lobby and why the EC decision-making process attaches so much importance to farmers interests.

The basis of this approach is the application of economics to politics: voters, elected representatives and the bureaucracy (the so-called "iron triangle") are all assumed to act in the interests of rational self-interest, according to the behavioural postulate of *homo oeconomicus*. For instance, Mancur Olson (1965) has shown how the costs and benefits of membership and participation in the activities of pressure groups, may explain how farm groups may be more effective in exerting political pressure than larger, less organised groups such as consumers and taxpayers. The possibilities for "exit" are limited so farmers turn to "voice" or protest (Hirschman (1975). EC farmers are frustrated in terms of economic rent-seeking so may turn to political rent-seeking (Buchanan, Tollison and Tullock (1980), Krueger (1974)). Regulation theory and the economic theories of democracy, bureaucracy, constitutions and asymmetric information illustrate how costly information, and the self-interest of decision-makers

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<sup>5</sup>For more complete descriptions of this approach see, for example, Senior Nello (1984, 1989), Moyer and Josling (1989), Petit et al (1986), and Karp and Stefanou .

may lead to biases in political systems, causing decision-makers to favour the interests of a particular group, such as farmers.

In applying all these approaches, specific account also has to be taken of the EC decision-making process. Decisions on the CAP are generally taken by the Council of Agricultural Ministers, concerned to get a "good deal" for their farmers. The principle of financial solidarity of the CAP induces a "restaurant effect": there is an incentive to order the most expensive dishes, knowing that the bill will be shared. The complexity and lack of transparency in CAP decision-making creates opportunities for favouring special interests.

This type of approach may prove useful, not only in explaining what Poland is up against in negotiations of agricultural questions with the EC, but also in understanding Polish policy formation. The initial liberalisation of Polish trade during 1990 probably reflected an ideological commitment to free trade, but the rapid reintroduction of protectionist measures could reflect the strength of the agricultural lobby and a new awareness of the importance of the farm vote. This factor should not be underestimated, given that agriculture accounted for some 28% of employment in 1987, a figure rising to 31.4% if the food industry is also considered. The high proportion of household income spent on food is also likely to ensure special consideration of agricultural interests.

The Hirschman approach may also help to explain the form of protest chosen by Polish farmers: the opportunities for finding alternative employment limit the possibilities for "exit" so farmers turn to "voice" or protest, including hunger strikes.

Kornai (1980, 1986) has described "the relation between the paternalistic state and firm which is its client" in the context of the former non-market economies. Though the Polish farm sector was fragmented, and predominately private, this was not the case up- and downstream in the food-processing industry and the production of farm inputs. There is a certain amount of continuity, particularly of personnel, between the centrally planned and transitional economy, and old habits die hard. There may therefore be a risk of a network allowing privileged access in lobbying and rent-seeking activities remaining in place.

## 5. Conclusions

From the discussion here it is possible to formulate certain policy prescriptions for Polish agricultural trade policy. Though some of these are obvious, it is worth repeating them here in order to provide a more complete picture.

i) The New Political Economy approach helps to explain the strength of the farm lobby in resisting agricultural trade liberalisation, and a realistic approach to trade negotiations requires understanding of the internal EC factors which have so frequently limited the scope for granting concessions.

ii) Though the Polish/EC/World Bank Study was probably right in concluding that Poland could not pursue an extremely liberal trade stance in isolation, the danger that protection might slow the process of modernisation and structural change has to be constantly borne in mind.

iii) The Association Council and PHARE programme offer ongoing opportunities for discussion of trade problems and granting of new concessions.

iv) Great effort should be devoted to market research and targeting to capture particular market niches. In particular there may be scope for increased exports of environmentally-friendly products, and specialised products such as certain processed meats.

v) Consultation and cooperation with EC authorities on questions of standards and health regulations, and encouragement of joint ventures could help speed up the process of overcoming the quality gap.

vi) Poland stands to gain not only from EC accession, but also from a successful conclusion to the Uruguay Round, and should push for such an agreement in the GATT negotiations.

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## V. Structure of Polish agriculture, its adaption possibilities and their influence on profitability of production

The aim of this paper is to present the structure of Polish agriculture from the perspective of EEC member states and to indicate possibilities of harmonization of this structure with that of the EC countries taking into account the course of privatization processes. An attempt will also be made to simulate profitability of production of major farming produce assuming alternative adaptation scenarios. In order to reach the assumed objectives, the paper first discusses the structure of private farms and then examines the role and importance of large farms in EC countries and in Poland. This is followed by a prognosis of how to improve the structure of farms in Poland taking into consideration the effect of varying pace of the adaptation process of farms on the profitability of some selected major farm produce.

### 1. Farm acreage structure

Far reaching and substantial changes took place, after the Second World War, in the farm agrarian structure of the countries which now form the Common Market. Those changes had a significant impact on the current structure of agriculture in these countries. It is worth remembering that changes in the agrarian structure were correlated with diversifications in labour and capital resources encouraging permanent optimization of relationships between production resources at the level of a production unit (farmstead). Table I shows the present farm acreage structure in EEC countries and in Poland. Only private farms are compared. Mean area of an average farm in Poland, taking into consideration only farms above 1 ha of agriculturally utilized area (AUA), was 6.2 ha of AUA while in EEC it was over 2.5 times more and amounted to 16.5 ha. Smaller mean AUA of farms can only be found in Greece (5.3 ha), and similar, though bigger, in Italy (7.7 ha) and Portugal (8.5). In the remaining countries the mean AUA of farms was several times bigger than in Poland. It is true that the farm area alone does not prejudice its production potentials, it does, however, to a considerable degree, determine it. Moreover, the area has a decisive influence on the effectiveness of labour and capital utilization and on the magnitude of income. Consequently, small average area of farms in Poland, when, additionally, accompanied by the structure of production similar to that in North European EC countries where farms are much larger, puts our agriculture at a competitive disadvantage. Therefore, on the one hand, it will be necessary to strongly encourage concentration processes in Polish agriculture which would help develop a group of farms able to compete with EC agriculture. On the other hand, however, no efforts should be spared to expand and promote the alternative model of part-time farming.

Calculations also revealed that, in comparison with the majority of EEC countries, the structure of Polish farms is bad and that the structure of land utilization within individual area groups is even worse. Competitively speaking, the latter correlation seems to be more important because a large number of farms using a small proportion of land has a marginal influence on the average economical conditions of production in a given country. The situation, however, becomes dramatically different when, as is the case in Poland, the interdependences are different. If, on the basis of the average farm area in EEC countries, we accept as small farms of up to 10 ha AUA, then they constitute up to 66% of all farms in EEC countries but utilize only 14.1% of total AUA. In Poland such farms constitute

82.6% of all farms but utilize 57.3% of AUA owned by the private sector. On the other hand, large farms (over 20 ha in EEC and over 15 ha in Poland) make up 20.5% in EEC and 6.1% in Poland of all farms and utilize, respectively, 74.3% and 20.3% of land. The above comparison clearly shows that the majority of AUA in Poland, unlike in EEC, is owned by small and medium size farms providing a major cause of the low efficiency of labour and capital.

Some suggestions concerning the speed of concentration in Polish agriculture can be inferred from data in Table 2. It is evident from this table that the rate of structural transformations in Polish agriculture was definitely slower than in EEC countries. From 1960, the number of farms in EEC-9 decreased by about 40% and in Poland by about 27% (concerns farms above 1 ha AUA). The slower rate in the reduction of farm number in Poland, combined with the transfer of land to the state sector, contributed to the fact that, while the average area of farms in the Common Market in the discussed period increased by 54.4%, in Poland the corresponding increase was only 6.8%. In other words, the annual average increase of the farm area in EEC countries amounted to 1.62% corresponding to 0.25 ha AUA, while in Poland the rate of this increase was only 0.22% annually, corresponding merely to 0.01 ha AUA. It can be easily calculated that the mean annual increase of the area of the average farm was 25 times slower in Poland than in the countries of EEC-9. From the examined countries, only Italy showed a similar but still higher increase of the farm area.

Bearing in mind all the differences and peculiarities of the Polish agriculture as well as current economical problems of our country, the responsible, long term policies of the state should encourage and stimulate processes of concentration of the farm area, as this factor has a very significant influence on the production efficiency in agriculture and, consequently, may play an important role in the harmonization of Polish and EEC agricultures and affect competitiveness of Polish agriculture produce.

## 2. Recommended reconstruction procedures of state-owned agriculture

This part of the paper attempts to analyze the desirable directions of reconstruction of state run agriculture in Poland with the view of integrating our agriculture with the agriculture of the member states of EEC. It may well be assumed that the integration process (which, presumably, will be most painful in the agriculture sector) will be enhanced by structural similarities. Therefore, it is extremely important to ascertain even directional possibilities of improving the structure of Polish agriculture in order to reduce dangers of head-on collision later on.

In this paper the analysis has been performed in two steps - first, we discuss the role big farms play in the agriculture of the EEC countries; secondly, we attempt to recommend structural improvement of farms in Poland through the reconstruction of the state sector.

### 2.1. The role of large farms in the agriculture of EEC countries

One of the essential problems in this type of considerations is the adoption of an 'analytical cross-section' which will enable us to distinguish the group of "large farms". Bearing in mind the need to make frequent comparisons with Polish agriculture, we have

defined "large farms" as those whose agriculturally utilized area (AUA) exceeds 100 ha.<sup>1</sup> This area happens to coincide almost perfectly with the division of farms in Poland into 'private' and 'state' and so will make the entire analysis easier. It may be added here that farms larger than 100 ha AUA are considered as large in EEC countries.<sup>2</sup>

Table 3 presents basic information about farms in the EEC countries with the area larger than 100 ha and compares them with the state owned farms in Poland. There are 147.6 thousand farms of this type in EEC and they constitute 2.1% of all farms (with the area above 1 ha). However, they utilize over 29 million ha of land which makes up almost 23% of all agricultural land in the Common Market (this is almost the same area as of the state owned land in Poland). However, the importance of 'large farms' in individual EC member states varies. Their role is highest in British agriculture where they take up more than 57% of land, then in Spain, Portugal, France and Denmark. The role of large farms is smaller in Greece, Benelux countries and in Germany (they utilize from 5 - 7.5% AUA).<sup>3</sup> The average farm acreage in this group in EEC countries is 198 ha AUA. It is quite clear from these introductory remarks that there are numerous similarities between farms above 100 ha in EEC and state owned farms in Poland. The main difference, apart from the form of ownership, lies in the organizational structure of state administered agriculture. The form of farming complexes and multi-farm establishments results in an exceptionally big average acreage of such farms. But despite all these discrepancies, there are similarities with regard to the acreage structure between state administered agriculture complexes and large farms in EEC. On the basis of the performed analysis, it can be concluded that universal parcelling out of state farms would be more likely to move us further away rather than bring closer to the EEC agriculture. Likewise, total sale-out of the land administered by the state would not

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<sup>1</sup>On the basis of EEC statistics, it is possible to adopt a different way of farm classification taking into consideration the standard agricultural income per farm, or standard direct income (both are calculated as analytical sections for statistical purposes)

<sup>2</sup>see : Thiede G., Landwirtschaftliche Betriebe über 100 ha in der EG, Agrarwirtschaft Heft 7, Verlag Alfred Strothe, Frankfurt am Main 1991.

<sup>3</sup>Judging from the progress of privatization in former East Germany, it can be presumed that the role of these farms will surely increase in Germany. In 1992 the average acreage of farms and agricultural complexes obtaining state financial support, i.e. those which are either being restructured or where the process has already been completed (they comprise 83% AUA in the former DDR) was as follows (in ha of AUA):

- subsistence individual farms (less than 50% income from farming)	- 69.2
- farms where the income from farming exceeds 50%	- 134.6
- partnerships	- 397.7
- cooperatives (from 1.01.1991 they function on the basis of West German legislation from before unification)	- 1521.7
- limited liability companies	- 945.6
- joint-stock companies and limited partnerships	- 1481.2
- other legal persons	- 764.3

remedy the situation of individual farmers.<sup>4</sup> It follows that the best solution would be to re-structure the existing state farms. The existence of multi-farm establishments need not necessarily hinder the process: to the contrary, this should allow a certain amount of manoeuvre. Depending on specific conditions, such establishments could be left as they are, some parts could be separated from them, or they could be disengaged into separate, single farming units.

Additional suggestions as to the direction of transformations in the state administered agriculture can be gathered from the analysis of agricultural production (Table 4).<sup>5</sup> A large majority of farms above 100 ha AUA (about 90%) carries on their activities on arable land, and 90% of them have cereals in their cropping system. Those farms which do sow cereals, sow them on approximately 88 ha. Sugar beets are grown only by 17.5% of the discussed farms, but the cultivation of sugar beets seems to be very important for these farms because the average area of plantations amounts to 28 ha. Many of these large farms (21%) have permanent plantations and their average area is 37 ha. Permanent plantations are particularly popular in EEC countries in the south of Europe. They can be found in 47% of large farms in Italy, 78% in Greece, 42% in Spain and 47% in Portugal and the average area of such plantations is, respectively : 29, 5, 49 and 47 ha. Nearly three fourths of large farms (73.7%) raise farm animals. The most frequent types of animal production are sheep, slaughter cattle and poultry. Sheep breeding is most important in Great Britain and the Irish Republic as well as in the south of Europe (in Greece - goat production). The most important animal production in large farms of northern EC is slaughter cattle and poultry. Only about one fifth of farms over 100 ha in EEC countries are engaged in milk production and fattening of pigs. It is, however, worth noting that herds are very numerous and, in the case of dairy cows, they average 69 animals. On the basis of the available data it can be concluded that agricultural production in large farms is highly specialized and focuses on large scale production within specialization.

Large scale production and its specialized character allow for a much lower employment level in comparison with the average employment in EEC agriculture (Tab.5). When calculated per 100 ha AUA, it amounts to 1.8 fully employed persons and is almost three times lower than the average in the Common Market. Very high level of employment in Polish state run agriculture is worth noting in this context. It can, therefore, be concluded here that adaptation processes in Polish state owned agriculture must include simplification of production and significant reduction of employment.

## 2.2. Prognosis of improvement of the farm acreage structure in Poland taking into account privatization of the state run sector

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<sup>4</sup>W. Ziętara found that even if, theoretically, the total area of state farms were sold to individual farmers, this would not improve the relationship between labour and land - the AUA per 1 person employed in agriculture would only increase by 0.3 ha, from 4.2 to 4.5 ha; Ziętara W., Ownership transformations in state farms (prospects and restraints), *Wies i Państwo* 3/1992

<sup>5</sup>Because, for statistical purposes by Eurostat (EEC Statistical Office) farms are grouped differently than in this paper, the analysis of the size and structure of production must be limited.

All analyses of the structure of acreage in Polish agriculture have so far been limited to individual farms and have ignored state run agriculture. The process of restructuring of this sector of agriculture should result in the full integration of agriculture into one branch of national economy. Only then will it be possible to work out a consistent evaluation of the entire agriculture. This part of the paper will attempt to analyze possibilities of improving the acreage structure of farms in Poland. The analysis has been elaborated with the help of the prognosis prepared by Z. Grochowski.<sup>6</sup> However, important assumptions and modifications have been introduced:

1. The prognosis assumption that the AUA in the state owned sector will increase by 500 thousand ha by 2010 has been rejected

2. It has been assumed that in the wake of privatization processes in the state administered agriculture up to 700 thousand ha of AUA will move over to the private sector

3. It has further been assumed that almost the total of the 700 thousand ha will be taken over by farmers who own more than 15 ha AUA, and only a small fraction will find its way to farms of 10 - 15 ha of AUA. There should be no problem with reaching this target, provided that in the course of the privatization process market principles are applied.

4. It has been assumed that the transfer of land from agriculture to other sectors of national economy (including afforestation) will proceed along one of the following routes:

a) route I - (based on Grochowski's prognosis) predicts reduction of AUA in Poland by the year 2000 to the level of 18,350 thousand ha AUA;

b) route II - in which it has been assumed that, in the result of the action of market mechanisms, an additional 350 - 400 thousand ha of the poorest AUA will fall out of agricultural use and most of this area will come from the today's state held land.<sup>7</sup> The best solution would be if this land was used only for afforestation purposes because of its poor quality. Fallowing will probably also occur.

5. The number of farms in the year 2000 has been adopted after Z. Grochowski reducing it by approximately 100 thousand, mainly in the group of farms with the area over 10 ha. This was due to the fact that this paper applies AUA and not total area. Moreover, in route II a further decrease, by about 50 thousand, of the number of farms in the acreage group 2-10 ha has been predicted.

6. It has been assumed that by the year 2000 the current state agriculture will be replaced by the establishment of approximately 10 thousand farms of the size more than 100 ha AUA owned by both legal and natural persons.

Table 6 shows the prognosis of the distribution of land resources until the year 2000.

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<sup>6</sup>Grochowski Z., Prognosis of the development of agriculture (synthesis) in: Prognosis of the development of agriculture and food industry until the year 2010; collective publication edited by Z. Grochowski, PAN, Committee for Prognostication of the Development of the Country "Poland 2000", 1990.

<sup>7</sup> Expert opinions indicate that, because of low quality and pollution, respectively 1.5 and 0.5 ha of AUA in Poland should be abandoned from agricultural utilization; Woś A., Zegar J.S., Agricultural policy to the end of XX century, IERIGŻ, Warszawa 1991, and Haman J., Leopold A., Role of agricultural sciences and civilization challenges of the XXI century (selection of papers), vol. IV., Prognosis Commission Poland in the XXI century, PAN Warszawa 1991.

Depending on the choice of the route, the acreage should diminish to the level of 18.35 - 18.0 mil. ha AUA, of which 1 mil. ha would remain in the hands of small-holders with farms of up to 1 ha AUA or be utilized as allotments of different kinds. The remaining 17.0 to 17.3 mil. ha AUA would constitute farms bigger than 1 ha, of which 13.8 - 13.9 mil. ha would be owned by private farmers and 3.2 - 3.4 mil. ha AUA would be farmed by restructured 'public sector'.

On the basis of the above presented assumptions and forecasted changes in the AUA resources, it was possible to attempt a simulation of structural changes in farms above 1 ha AUA, including the privatized state run sector (Tab. 7). Depending on the adopted variant, the number of farms would decrease from 2,138 thousand in 1990 to 1.7 - 1.65 mil. There would be a significant decline in the number of small acreage farms so that in the groups 2-5 and 5-10 ha their number would drop by 45 and 25 %, respectively, while the number of 1-2 ha farms is predicted to fall by 15 %. On the other hand, the number of medium-sized farms would increase by approximately 11-12% in the group 10-15 ha and by 23% in the group of farms above 15 ha. Besides, an entirely new group of about 10 thousand farms is envisaged to appear formed from former state farms. Their share in the structure of farms would be no more than 0.6%, but they would utilize almost 20% of AUA in all types of farms. All in all, larger farms, i.e. in Polish conditions farms over 10 ha AUA, would utilize 70% of AUA. Assuming that the main land transfer from both the state sector and small farms would concern primarily farms from the group of 15 ha and more, it is obvious that this group of farms would ultimately utilize about 30% of AUA, and their average area would increase by about 50% from 20.9 ha AUA in 1990 to about 30 ha in the year 2000. These farms, together with the farms developed from today's state sector, might be fully competitive with the agriculture of EEC countries. They would, however, occupy only 50% of AUA of all farming land. Competitive perspectives of farms of 10-15 ha, which obtain their main income from agriculture, will depend on the development of economical and market situation on the domestic and world agriculture market. However, they seem to be doomed in long-term perspective. These gloomy forecasts concern agriculture farms. Judging from the size of the current highly intensive production (horticulture production, certain types of agriculture production, intensive animal production in farms with little or no agricultural land) as well as predictable possibilities of its intensification, it can be anticipated that about 200 thousand farms could, up to the year 2000, successfully compete on the market and earn the living of the farmer's family and ensure the growth of the farm.

All in all, in comparison with 1,358 thousand farms in 1988, in the year 2000 there would remain only about 650 thousand farms able to support themselves exclusively or mainly from agriculture (Tab. 8).

This means that the majority of today's 10 ha farms obtaining their income primarily from agriculture will either have to become part time, or cease to exist (as predicted in the prognosis).

Summing up, it can be concluded that the incorporation of state farms into market economy may significantly improve the economical condition and structure of agriculture. Large scale breaking up of the state farms or their bulk sale (especially, with the aim of upgrading the small-holders' farms) is not recommendable. What is needed is restructuring combined with privatization, and that need not necessarily entail bulk sale of assets, but

mainly land.<sup>8</sup> The existing relationship between land and labour in state agriculture, which is 100% better than in private farms, but which must still be improved, as well as relatively good capital resources constitute favourable conditions for successful and rational restructuring of the state sector. Furthermore, it is predicted that a significant improvement of labour-land relationships will be accomplished much faster in farms and farming establishments created from today's state farms than in private agriculture. It is, therefore, feasible to assume (provided restructurization of the state run sector will be achieved applying economical criteria) that state agriculture may give rise to a new segment of Polish agriculture which will be wholly competitive with its EEC counterparts.

### 3. Effect of simulated readjustments of farms

Since the beginning of 1990, i.e. when Polish economy entered its long and painful road of adaptation to market economy, a number of causes have emerged which led to a significant deterioration of the economical condition of agriculture. Worthwhileness of agricultural production was worst affected by quickly deteriorating price relations.<sup>9</sup> Simultaneously, Polish agriculture was faced with the income barrier on the domestic market and certain protectionist actions in international trade which made all attempts to relieve the domestic market or secure more favourable prices futile. On top of that, it is worth remembering that the entire price adjustment operation takes place in conditions of economical recession.<sup>10</sup> There is, however, no return to the price relationships from before 1990 for agriculture, so the only solution for Polish agriculture is to pursue active adaptation processes to adjust to the changing economical conditions. This part of the analysis attempts to determine the manufacture economics of main agricultural produce at different variants of price levels and adopting different variants of farm adaptation procedures. Model

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<sup>8</sup>The problem of privatization of the state sector in agriculture is inherently connected with an urgent and conclusive solution of re-privatization. Lack of settlement of this problem has a delaying influence on the entire process of restructuring of state agriculture. According to W. Ziętara, ownership claims are estimated to concern 1.4 mil. ha, which corresponds to about 40% of the total area of land in state hands (Ziętara W., Ownership transformations., op. cit.)

<sup>9</sup>In 1990 the index of price scissors of sold agriculture produce to prices of purchased goods and services decreased to 49.5, and in 1991 to 75.3 after adopting the appropriate figures from the previous year as 100; consequently, when we compare 1991 with 1989 this index was only 37.3; Statistical Yearbook GUS; Analysis of production and economical situation in agriculture and food industry in 1991, IERiGŻ Warsaw 1992.

<sup>10</sup>Mechanism of adaptation changes in the food sector in 1990-1991 and its future perspectives was presented by Woś A.: Agricultural policy in conditions of market liberalization (1990-91). Mechanism of adaptation changes, in : Analysis of production and economical situation in agriculture and food industry in 1991, IERiGŻ, Warsaw 1992.



calculation simulations were performed on the basis of empirical studies.<sup>11</sup> They comprised private, state and cooperative farms which achieved very good and good production and economical results. The main premise for selecting better than average farms was the assumption that they are better suited for integration conditions with EEC and world agriculture. The inclusion of state farms aimed at gathering information about possibilities of their restructurization during the process of privatization. Because the development of a model is easier and closer to reality if it refers to a specific object, we selected one private and one state farm which achieved production and economical results approaching average and, at the same time, were characterized by average, for the examined set, resources of production factors.

It seems that despite significant differences between the examined farms in comparison with the situation in agriculture in general, the results of the analysis allowed to arrive at certain conclusions which make it possible to come up with a number of recommendations concerning important adaptation procedures for Polish agriculture.

### 3.1. Model assumptions

The analysis of the current state of affairs and the elaboration of model simulations are based on data from a single farm in a state agricultural complex in Poznań voivodeship and one private farm in Leszno voivodeship.

The state farm selected for modelling worked on 787 ha AUA and employed 74.2 persons (after conversion into full time workers and adding an appropriate number of persons employed in administration). Out of the total number of employees, 39 persons worked in the plant production, 5 in the cattle barn and 8.3 in swine fattening. This calculation also takes into account persons who were involved in the activities of the above mentioned branches of production only indirectly as well as proportional share of technical and administration staff. The remaining employees worked in other fields not included in this analysis.

The farm had medium quality soil but achieved very good results in cereal and rape production and good in sugar beet production. The principal branch of animal production was swine fattening (3.500 stands with stand utilization coefficient - 2.2 pigs/stand/year). Milk production was of less importance - the average number of cows on the farm was 80, and their milk yield was about 5000 kg/cow.

The private farm cultivated 19 ha AUA of mostly good quality land and employed 2.2 full time persons. Like the state farm, it achieved very high yields in plant production. Its main animal production focused on milk (14 dairy cows with annual yield of 5730 kg) as well as swine fattening (130 stands with stand utilization coefficient - 1.8 pigs/stand/year).

Model considerations were based on the current situation (year 1991) and they comprised current structures of organization and production as well as resources of

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<sup>11</sup> Studies were carried out according to methods worked out in the Chair of Farm Organization at Hohenheim University, Germany in collaboration with the Chair of Economics and Organization of Agriculture at the Agricultural University in Poznań. The latter was involved in data collection from large private farms, state and cooperative farms in 1991 in Poznań, Leszno and Kalisz voivodeships. The results have already been published in Germany; Schüle H.: Struktur, Wirtschaftlichkeit und Entwicklungsmöglichkeiten der Landwirtschaft in Polen, Stuttgart- Hohenheim, 1992.

production factors, their expenditures, production results and prices. The model analysis takes into account two levels of prices - world and EEC.<sup>12</sup> The prices taken for analysis were from Germany and were reduced by 10-11%. Labour expenses adopted in this variant are similar to the levels found in southern EEC countries. These costs, apart from base pay, also include social security insurance and the value of farm products and, in the state farm, also social security benefits. They do not, however, contain the alternative income of the private farmer derived from living in his own house. Table 9 shows the essential information about prices of the analyzed farm produce, important expenses and value of fixed assets. In the world price variant, the value of machines and equipment was fixed on the basis of German prices reduced by 20%, and the value of buildings according to Polish prices; in the EEC price variant the value of both machines and buildings was fixed on the basis of German prices. All the analyzed scenarios adopt a 10% straight-line depreciation for machines and equipment and 2.5-10% depreciation for buildings (depending on their type). The interest on working and fixed capital was assumed at a realistic for stable economy rate of 8%, while the depreciation rate was assumed at 50%.

The next step in the construction of the model was the adoption of different adaptation scenarios. However, each variant also acknowledged options without any adaptation.

Two basic scenarios were adopted for plant production in the state farm:

- scenario I ("adaptation of labour resources and capital"). Within the framework of this scenario the present farm and production structures would remain intact, while the machine equipment and the level of employment would be adjusted to the essential production requirements of the farm. These requirements were determined on the basis of the current equipment and standard demand for labour as well as standard machine efficiency approved by appropriate German institutions (KTBL).<sup>13</sup> It is obvious from this analysis that, without affecting the size and structure of production, machine equipment can be reduced by 30% and the workforce by about 20.5% of fully employed (i.e. by almost 50%).

- scenario II ("change of the farm organization"). In this scenario the present farm organization is changed. A far-reaching specialization would be introduced and cropping system simplified (cereals, sugar beets and rape) resulting in a marked decrease of fixed costs. Labour expenses were calculated on the basis of standard demand for labour in conditions of modern manufacturing technologies in plant production (KTBL, 1991). In both these scenarios management and administration workforce has been included to calculate labour expenses. Machine equipment was restricted to the needs of intensive plant production.

This scenario has been expanded by a sub-scenario for the variant with world prices. Its main feature is a significant reduction of wheat and rape production. Current German

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<sup>12</sup> It may be assumed that from the point of view of possible integration of Poland with the EEC, the variant with world prices has a higher cognitive value. 1992/93 marks the beginning of important changes in the EEC pricing policies. The aim of the operation is to reduce purchasing prices of agricultural produce to the level of world prices (for example, cereal prices are to drop by 35%). Farmers are to get appropriate compensations. See: Poczta W.: Agricultural interventionism of the future, *Życie Gospodarcze* N° 17, 1992.

<sup>13</sup>KTBL (Kuratorium für Technik und Bauwesen in der Landwirtschaft), 12 Auflage, Münster-Hiltrup 1991. KTBL: Makost, EDV-Programm zur Maschinenkostenkalkulation, Darmstadt 1989.

studies have indicated that there is going to be a considerable cut in nitrogen fertilization - 66% in the case of wheat and 50% in the case of rape, additionally accompanied by the reduction in the number of plant protection applications. These measures would result in a 20 dt/ha decrease in the yield of wheat and 5 dt/ha decrease in the yield of rape.<sup>14</sup> Only one adaptation scenario was elaborated (adaptation of labour resources) for the animal production in the state farm. Using German standards (KTLB, 1991), it was predicted that the employment in the cattle barn would be reduced to 3 full time workers and in the pig house to 4.8 workers (i.e. by about 40%).

With regard to the private farm, one scenario ("adaptation of land resources") was adopted for plant and dairy production. According to this scenario, the acreage of the farm is to double (38 ha AUA) allowing the reduction of the charge of production by capital by about 40%. The analysis for swine fattening was confined to different price variants.

### 3.2. Methods and results of model calculations for some selected farm produce.

In order to improve calculation analyticity, all production costs were divided into three groups. By taking them into account in later calculation, it was possible to distinguish three different income categories which, in turn, allowed to estimate the degree of production profitability.

The first group of costs were proportional special costs. They comprised primarily variable costs. In plant production, for example, they included, among others, costs of seed material, mineral fertilizers, plant protection chemicals, variable costs of machine application and interest on working capital. Variable costs of machine utilization comprised costs of overhauls, fuels and lubricants. Costs of repairs were calculated on the basis of Polish norms<sup>15</sup> and price of machines in 1991. With regard to animal production (mainly swine fattening), the principal item on the list of proportional special costs were feedstuffs. Roughages used by dairy cattle were also included in this group. The difference between the value of production and proportional special costs constitutes an income category known as gross profit (direct income). The gross profit should be high enough to cover expenses of subsequent cost groups.<sup>16</sup>

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<sup>14</sup>Zeddies J.: Rapsanbau nach dem neuen Ölsaatenbeschluss, Hannoversche Land-und Forstwirtschaftliche Zeitung 1/1991; Fuchs C. and Schanzenbäcker B.: Produktion, Ökologie und Wirtschaftlichkeit ausgewählter Körnerfrüchte, Agrarwirtschaft, Heft 1, 1992. In these experiments, on the basis of empirical data, values of one factor function of production in different natural conditions and at varying levels of production intensity were estimated.

<sup>15</sup>The method employed was that worked out by M.A. Jerzak, Application of standard costing in agriculture economics and advisory services, doctor's dissertation, Main Library of AR in Poznań, Poznań 1988.

<sup>16</sup>Negative gross income denotes excessively low production profitability and, practically speaking, excludes its continuation. Studies of several farms revealed an average slight negative gross profit only in the case of rye production. In this analysis, however, rye production was left out as it occupied a marginal position in the examined farms and so could have a negative effect on profitability of this production.

The second group of costs were labour costs, depreciation costs and other overhead expenses including tax. The income category which remains after subtracting these costs from gross profit can be referred to as financial results achieved in a given activity. Negative value means that either labour could not be fully paid or depreciation was not subtracted and so a negative reproduction of the property assets took place.

The third group of costs were interests on fixed capital and land. Full costs of production, indicating the degree of utilization of all production factors, include all the three groups of costs. In other words, all the production factors are fully paid for only in the case when the value of production covers production costs calculated in this way. Possible surplus (net income) makes expanded reproduction of capital feasible. It is, however, common knowledge that it is almost impossible to obtain full interest on all resources in agriculture. It can, therefore, be assumed that development is already practicable if positive financial results are achieved (production value minus two first groups).

Results of model calculations according to the adopted assumptions and methods are presented in Tables 10-13. Since calculations for individual products were performed on the basis of the same method, detailed calculations are given only for winter wheat.

#### Production economics of winter wheat

Our calculations revealed that both the state farm and the private farm achieved positive gross profit of 100 ECU/ha and 80 ECU/ha, respectively (Tab. 10 and 11). In the state farm, the earned gross profit allowed to cover labour costs, taxes, overhead expenses and only about 20% of real depreciation costs  $[(100 - 58 - 31) : 52 \times 100]$ . Similar proportion of depreciation costs could be covered in the private farm. However, this unpaid depreciation sum was much higher in the case of the private than the state farm (- 215 ECU/ha against - 41 ECU/ha). Significant negative financial results in the private farm resulted from the fact that plant production was heavily charged with depreciation costs caused by machine over-equipment in relation to needs and size of production (the same problem appeared in the case of interest on fixed capital).<sup>17</sup> It would be a mistake, however, to say that good machine equipment interferes with proper functioning of the farm. In short and medium perspective of integration with EEC agriculture this will rather make the process easier. However, the results of our calculations demonstrate that, at current price relationships, restitution of machine capital resources will not be possible.

In conditions of world prices and with no adaptation processes in sight, despite significant increases in gross profit both in the state and private farms, the negative financial results even intensified primarily due to the increase in depreciation costs (in the result of new, higher valuation of machines and equipment). The implementation of the first stage of readjustments in the state farm, i.e. down-sizing of the labour and capital resources, would allow to obtain positive financial results in wheat production of the order of 52 ECU/ha. The second, more dramatic stage of adaptation involving changes in the organization of the farm and production intensification should almost double financial results to 100 ECU/ha and should also create favourable circumstances conducive, in conditions of world prices, to the net profit of 21 ECU/ha. This means that all the production factors involved in the

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<sup>17</sup>The problem of "machine over-equipment" occurred in all analyzed private farms. Judging from statistical data, it can be assumed that it concerns a considerable majority of big and good farms in Poland.

production process would be paid for. The implementation of adaptation procedures in the private farm (readjustment of land resources) would significantly reduce negative financial results from -266 to -74 ECU/ha. So such readjustments would not solve the problem, yet they would form foundations for subsequent stages of adaptation (further increase of land resources or farm reorientation which would allow its efficient operation at lower "machine saturation" thanks to mechanization services or by joining "machine communes" etc.).

In conditions of EEC prices positive financial results in the state farm would be achieved even without implementation of adaptation procedures, but their introduction would improve these results considerably. Without readjustments, net profit would not be reachable, while implementation of successive stages of adaptation would make it attainable. As to the private farm, positive financial results in conditions of EEC prices could be achieved only after implementation of the planned adaptations, though even then the farm would not achieve net profit. This means that even the adoption, for our considerations, of very high EEC purchase prices, would not allow to pay fully all resources of production factors gathered at the analyzed farm. It seems that this thesis applies to the majority of Polish farms.

#### Profitability of rape and sugar beet production

Evaluation of rape and sugar beet production profitability in the analyzed models reveals similar tendencies. However, general differences between the state farm and private farm, as described above when discussing wheat production, are maintained (Tab. 12). Both in Polish conditions and in conditions of world prices rape production in the state and private farm brings lower gross profit than wheat production. This production becomes competitive with wheat when high EEC purchase prices are adopted for analysis. Positive financial results in the state farm could only be achieved after introduction of the radical variant of adaptation, but even then it would not be possible to earn net profit. With reference to the private farm, as it was the case with wheat, and for the same reasons, it would not be possible to accomplish at world prices positive financial results, and even less so net profit. Conversely, high rape purchase prices in EEC<sup>18</sup> make it possible that even without introduction of any readjustments the state farm would achieve positive financial results and net profit in the analyzed model. It follows that the implementation of such readjustments would improve the achieved results very significantly. In the case of the private farm, positive financial results could only be reached after full implementation of the adaptation scenario. Our calculations show that, practically speaking, full payment of the land and fixed capital would be possible (the loss calculated in the model would amount to only 1 ECU/ha).

Similar profitability tendencies of sugar beet and rape cultivation (at the adopted calculation scenarios) result from similar relationships between Polish, world and EEC purchase prices between these crops. The main difference lies in the fact that in Poland (particularly in the case of the state farm) sugar beet production is charged with very heavy

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<sup>18</sup>1991 was the last year in which EEC farmers were paid such high prices for rape. An agreement was reached during GATT negotiations ("Oilseeds Panel") whereby EEC has consented to reorient its oilseeds market so that their prices will be comparable with world purchase prices and EEC producers will be paid appropriate compensations; *Mitteilungen der Kommission an der Rat und an das Europäische Parlament - Die künftige Entwicklung der gemeinsamen Agrarpolitik*, Brüssel 1991. also see: *Poczta W. Agricultural interventionism...* op.cit.

production costs. This explains why, in conditions of world prices, despite relatively high gross profit, losses in sugar beet cultivation in the state farm without introduction of adaptation procedures are higher in comparison with wheat. Reduction of the number of workers and their replacement by seasonal workforce (calculated in the model) markedly improved economics of sugar beet cultivation, but only total reorganization of the state farm and complete elimination of the hand labour would create conditions for achieving net profit.

In conditions of world prices, moderate labour costs of sugar beet cultivation in the private farm, in contrast with rape, created possibilities of achieving positive financial results after adaptation of land resources. However, heavy charge of capital eliminates any chance of net profit.

In conditions of very high purchase prices of sugar beets in EEC (the high price is paid only for part of the production)<sup>19</sup>, net profit would be achieved in all scenarios in both models. Naturally, readjustments would considerably improve the economic efficiency.

The performed analysis of plant production profitability revealed inappropriate relationships between resources of fixed capital and land and indirectly - and this is certainly more important - it brought to light low productivity of capital. In long term perspective, the problem will become particularly acute in Poland in farms which are now considered as large but which, in future, will be treated as medium sized. Bearing in mind the existing acreage structure of Polish agriculture, it would not be realistic to expect radical area increases of an average farm. It follows that perspectives for complete simple reproduction of property assets will remain bleak. This means that significant part of machine work in plant production will have to be done by machines from 'outside'. This predicted development of the economical situation in Polish agriculture, although unwelcome for many farms, is rational and will create conditions for reduction of production costs.

#### Profitability of milk and pork production

The analyzed types of animal production do not give much room for construction of theoretical adjustment simulations. As for the state farm, the adaptation scenario was restricted by employment (existing labour organization in the object adopted for modelling was already good). The adaptation scenario for the private farm adjusted land resources in milk production by reducing costs of roughage production. In the case of animal production, the calculation results were affected more markedly than plant production by the price variant adopted for predictions.

Milk production in the variant with 1991 prices was more profitable for the private farm. This was caused mainly by about 15% higher milk yield of cows and lower labour costs at only slightly higher level of other costs. The value of milk production in the private farm covered the proportional special costs, costs of roughages, labour and depreciation costs and there was even a small profit which, however, did not cover interest of the fixed capital. Milk production gave negative financial results in the state farm.

In conditions of world prices, without application of adaptation procedures, milk production profitability plunged in both types of farms. Implementation of adaptation programmes would, however, significantly improve profitability of its production - in the

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<sup>19</sup>There are strict quota regulations in EEC (A, B, and C). The price adopted for model calculation was that for A quota, i.e. the highest.

private farm, even a net profit should be earned (after interest on fixed capital), while in the state farm the loss would be negligible. High milk purchase prices in EEC would ensure net profit even without application of readjustments.<sup>20</sup> However, implementation of adaptation scenarios would markedly increase income, particularly in the state farm.

Simulated results of calculations for swine fattening profitability differ considerably when compared with models for other types of production. As regards the state farm, the highest profit was achieved at price relationships which occurred in Poland in 1991. In the case of the private farm, because of the slightly different structure of costs, the profit was a little higher in conditions of world and EEC prices. High profitability of this branch of animal production in Poland resulted directly from the relationship between the sale prices of slaughter animals and prices of feedstuffs (primarily cereals) which constitute the main component of production costs. This relationship was more favourable in Poland than in the world and EEC markets. Nevertheless, implementation of adaptation procedures in the state farm would reduce production costs by 1.5 ECU/animal in conditions of world prices, and by 3.5 ECU/animal at EEC prices. These are reserves which could be achieved through rationalization of employment. These calculations confirmed good profitability of swine fattening in Poland. However, these favourable relationships will deteriorate as Polish agriculture becomes closer integrated with the world and EEC agriculture.<sup>21</sup> Negative effects of the deteriorating relationships on swine fattening profitability will be felt much stronger than in the presented models because farms used for this study managed this type of production much better than average.

## Conclusions

The performed calculations show that, with the exception of swine fattening, at price relationships from 1991 and at the existing relationships between production factors, there was no possibility to achieve profit which would fully pay all the involved production factors (including interest on land and fixed capital). Leaving interest on land and property assets out of cost components (which allowed the establishment of financial results in the analyzed branches of production) allowed to achieve still a small profit in the case of milk production in the private farm. This means that the remaining branches of production led to decapitalization of property (depreciation was not fully realized). In conditions of world prices without implementation of adaptation procedures (with the exception of swine fattening in the private farm) economical results became markedly worse - losses increased irrespective of whether interests on land and material resources were left out or not. However, implementation of adaptation scenarios in conditions of world prices effectively improved economical results - losses were significantly reduced or even possibilities of earning a small surplus appeared. Economical results in the studied models were very good in the variant with EEC prices. But even here the results were much improved if readjustments were

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<sup>20</sup>Milk production in EEC is controlled by quotas. Restrictions of production would increase fixed costs and, in this way, reduce profitability. Moreover, milk prices in EEC will decrease following future reforms of market policies which will cut purchase prices on butter and milk powder.

<sup>21</sup>These relationships worsened in Poland already in the autumn of 1992 in the results of poor harvest caused by drought.

applied. Economical 'opening' of Polish economy means that the scenario referred to in this analysis as "economical activity in conditions of world prices" is becoming more and more realistic. On the other hand, from today's perspective, the variant with EEC prices does not seem relevant for Polish agriculture. Furthermore, it can be predicted that it will not be important for Polish agricultural producers even in future, after Poland has joined the EEC, since agriculture policies of the Common Market are clearly aiming at reaching the levels of world prices. Consequently, readjustment scenarios for Polish agriculture should be "world price oriented". This analysis showed that world price relationships are often less 'friendly' than those which occurred in Poland in 1991. It can, therefore, be concluded that without important changes in relationships between production factors, implementation of adaptation processes in Polish agriculture will be very limited leading to serious reduction of competitiveness of Polish agricultural produce on the world market. This means that there is an urgent need for an emergence of a group of efficient farms which will be strong enough to begin to play a dominant role in Polish agriculture and, at the same time, withstand international competition.<sup>22</sup> The performed analysis also showed that rational privatization and restructuring of the state agricultural sector may help this process.

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<sup>22</sup>T. Hunek estimates that today approximately one third of farms in Poland may have economical and social premises which qualify them to become "resilient, economically aggressive sector of 'purely' agricultural, dynamic, highly efficient farms"; Hunek T., Long-term economical, social and cultural aspects of modernization of villages and agriculture; in Socio-economical changes in the process of modernization of villages and agriculture, PAN IRWiR, Warsaw 1991.



Tab 1 Agriculture farms and land utilization according to area - 1987 r.<sup>1/2</sup>

Countries	Farms a-number (thousands) b-area in thou sands	including acreage groups (%)						Aver. farm acreage above 1 ha AUA (ha AUA)	Plots below 1 ha a-number (thous.) b-acreage AUA (thous.ha)	Average farm acreage incl. 1 ha plots (ha AUA)	Percent of full sized farms to farms above 1 ha AUA <sup>3/4</sup> (%)
		1-5 ha	5-10 ha	10-20 ha	20-50 ha	50-100 ha	100 ha and more				
Germany	a 670,7 b 11826	29,4 4,3	17,7 7,3	22,1 18,3	24,8 43,3	5,2 19,4	0,8 7,4	17,6	34,4 18,0	16,8	53,2
France	a 911,8 b 28024	18,2 1,5	11,8 2,8	19,2 9,4	32,8 34,3	13,6 30,0	4,4 22,0	30,7	70,0 34,0	28,6	62,7
Italy	a 1974,0 b 15141	67,9 20,1	16,8 15,0	8,7 15,4	4,6 17,9	1,3 12,2	0,7 19,4	7,7	810,0 404,0	5,6	57,1
Holland	a 117,3 b 2017	24,9 3,8	18,4 7,8	25,0 21,1	27,3 47,7	4,0 14,6	0,4 5,0	17,2	14,8 7,0	14,9	80,5
Belgium/ Luxemburg	a 82,6 b 1489	27,3 4,0	17,7 7,4	23,9 20,2	24,4 41,7	5,7 19,5	1,0 7,2	18,0	14,3 7,0	15,4	66,3
Great Britain	a 242,9 b 16746	13,5 0,5	12,4 1,3	15,3 3,2	25,4 12,2	17,5 17,9	15,9 64,9	68,9	17,3 4,0	64,4	54,5
Ireland	a 216,9 b 4916	16,1 2,0	15,2 5,0	29,2 18,6	30,6 41,2	7,3 21,7	1,6 11,4	22,7	0,1 0,0	22,6	64,1
Denmark	a 86,0 b 2798	1,7 0,2	16,3 3,6	25,3 11,3	39,4 38,7	13,8 27,9	3,6 18,3	32,5	1,0 0,0	32,2	94,5
Greece	a 703,5 b 3722	69,4 32,0	20,0 25,5	7,6 19,0	2,5 13,1	0,4 5,4	0,1 5,0	5,3	249,8 121,0	4,0	70,8
Spain	a 1539,9 b 24681	53,3 7,9	19,0 8,1	12,3 10,6	9,4 18,0	3,6 15,4	2,4 40,0	16,0	251,9 115,0	13,8	39,1
Portugal	a 384,0 b 3202	72,5 19,6	15,0 12,3	7,2 11,6	3,4 12,0	0,9 7,5	1,0 37,0	8,3	251,4 128,0	5,2	115,6
EEC - 12	a 6929,6 b 114562	49,2 7,0	16,8 7,1	13,5 11,6	13,7 25,7	4,7 19,3	2,1 29,3	16,5	1715,0 839,0	13,4	59,2
Poland (1990) Private farms	a 2138,0 b 13400	52,8 23,1	29,8 34,2	10-15 ha 11,3	15-50 ha 6,0 <sup>v</sup>	0,1 <sup>v</sup>	0,0 <sup>v</sup>	6,3	1691,0 <sup>4/</sup> 874	3,7	50,0

1/The data used come from 1987 because it was the last year in which they carried out analysis of farm structure in EEC; 2/Included are farms obtaining more than 50% profit from agriculture production; 3/Estimate from data from 1987; 4/Including persons raising animals without agriculture land (46 thous. in 1988)

Source: Eurostat 5, 1990, Luxembourg, CECA-CRE-CEEA, Brüssel-Luxemburg 1991; Agriculture and food economy 1986-1990, GUS Warszawa 1992; Rocznik Statystyczny Województw, GUS Warszawa 1990; own calculations

Tab.13 Profitability of milk and pork production

Item	Units	Present situation (1991)	World prices		EEC prices	
			No adaptation	Adaptation of labour resources (land) <sup>1/</sup>	No adaptation	Adaptation of labour resources (land) <sup>1/</sup>
I. Milk production						
1. State farms						
-gross profit	ECU/cow/year	129	213	241	752	795
-financial results	"	-40	-108	20	139	374
-net profits	"	-70	-145	-17	52	287
2. Private farms						
-gross profit	"	138	253	329	936	1049
-financial results	"	3	0	76	437	523
-net profits	"	-37	-44	32	319	405
II. Pork production						
1. State farms						
-gross profit	ECU/fattener	25	19	19	33	33
-financial results	"	19	10,5	12	17	20,5
-net profits	"	17,5	8,5	10	12	15,5
2. Private farms						
-gross profit	"	28	32	x	48	x
-financial results	"	22	23,5	x	30	x
-net profits	"	19,5	20,5	x	22,5	x

1/Adaptation of labour resources in state farms and land resources in private farms

Source: Own calculations

Tab.12 Profitability of rape and sugar beet production (ECU/ha)

Item	Present situation (1991)	World prices			EEC prices		
		No adaptation	Adaptation of labour resources and capital (land) <sup>1/</sup>	Changes in farm organization	No adaptation	Adaptation of labour resources and capital (land) <sup>1/</sup>	Changes in farm organization
<b>I. Rape</b>							
1.State farms							
-gross profit	72	172	172	190	581	581	581
-financial results	-64	-119	-25	48	170	313	394
-net profits	-116	-217	-107	-31	39	197	282
2.Private farms							
-gross profit	55	148	148	x	551	551	x
-financial results	-238	-439	-161	x	-12	196	x
-net profits	-388	-585	-318		-306	-1	x
<b>II. Sugar beets</b>							
1.State farms							
-gross profit	166	346	346	346	1533	1533	1533
-financial results	-43	-105	66	180	826	1109	1310
-net profits	-95	-203	-16	101	695	993	1198
2.Private farms							
-gross profit	170	362	362	x	1514	1514	x
-financial results	-162	-232	5	x	759	1061	x
-net profits	-312	-486	-152	x	465	864	x

1/Adaptation of labour resources and capital in state farms and land resources in private farms

Source: Own calculations

Tab.2 Farms (above 1 ha AUA) - structural changes

Countries	Number of farms (thous.)		Number of farms in 1987 (1960=100)	Average annual reduction rate of farm number 1960-1987 (%)	Average farm acreage (ha AUA)		Acreage in 1987 (1960=100)	Rate of increase of farm acreage 1960-1987 (%)	Average annual increase of farm acreage (ha AUA)
	1960	1987			1960	1987			
Germany	1385,3	670,7	48,4	-2,65	9,3	17,6	189,2	2,39	0,31
France	1774,0	911,8	51,4	-2,43	15,7	30,7	195,5	2,51	0,56
Italy	2756,3	1974,0	71,6	-1,23	6,8	7,7	113,2	0,46	0,03
Holland	230,3	117,3	50,9	-2,47	9,9	17,2	173,7	2,07	0,27
Belgium/Luxemburg	209,1	82,6	39,5	-3,38	8,4	18,0	214,3	2,86	0,36
Great Britain	443,1	242,9	54,8	-2,20	32,0	68,9	215,3	2,88	1,37
Ireland	200,0	216,0	74,8	-1,07	17,1	22,7	132,7	1,05	0,21
Denmark	193,7	86,0	44,4	-2,96	20,7	32,5	157,0	1,68	0,44
EEC - 9	7281,8	4302,2	59,1	-1,93	12,5	19,3	154,4	1,62	0,25
Poland (private farms)	2937,3 <sup>1/</sup>	2138,0 <sup>2/</sup>	72,8	-1,17	5,9	6,3 <sup>2/</sup>	106,8	0,22	0,01
Relationship Poland and EEC - 9 (%)	40,3	49,7	X	60,6	49,6	32,6	X	13,6	4,0

1/ Including farms from 1 ha AUA;

2/ 1990

Źródło: Eurostat 5, 1990, CECA-CEE-CEEA, Brüssel-Luxemburg 1991;

Die Lage der Landwirtschaft in der Gemeinschaft, Bericht 1991, EGKS-EWG-EAG, Brüssel-Luxemburg 1992;

Statistisches Jahrbuch über Ernährung, Landwirtschaft und Forsten, Landwirtschaftsverlag, Münster-Hiltrup;

Agricultural Statistical Yearbook 1945-1965, GUS Warszawa 1965;

Own calculations

Tab.3 Farms above 100 ha AUA in EEC (1987) and state farms in Polish agriculture (1990)

Countries	Number of farms with over 100 ha AUA	Percent of total farms above 1 ha AUA (%)	AUA in farms bigger than 100 ha (thous. ha)	Percentage of total area of farms above 1 ha (%)	Average farm acreage (ha AUA)
Germany <sup>1/</sup>	5600	0.8	712.8	6.0	128
France	40300	4.4	5951.6	19.3	148
Italy	13200	0.7	1400.8	8.1	106
Holland	500	0.4	97.7	4.8	195
Belgium	700	0.9	95.7	7.0	137
Luxemburg	80	2.6	8.7	7.0	109
Great Britain	38600	15.9	10675.5	57.4	277
Ireland	3500	1.6	542.9	9.5	155
Denmark	3100	3.6	441.0	15.7	142
Greece	900	0.1	187.6	5.0	208
Spain	37100	2.4	8236.1	30.4	222
Portugal	3900	1.0	878.2	19.4	225
EEC - 12	147600	2.1	29228.6	22.8	198
Poland:					
State farms (MRiGŻ)	1112	x	3251.0	18.4	2924
including:					
state farm complexes	5000	0.23	3251.0	18.4	650
other state farms	1148	0.05	239.0	1.4	208
Cooperatives	2240	0.10	696.0	3.9	311
Agricultural circles	131	0.01	54.0	0.3	412
Total	5519 <sup>2/</sup>	0.40 <sup>2/</sup>	4240.0	24.0	498 <sup>2/</sup>

1/ Without farms East Germany;

2/ Including estimated 5000 farming complexes in state farms of MRiGŻ.

Source: Eurostat, Landwirtschaft SA, CECA-CEE-CEEA, Brüssel, Luxemburg 1991;

Thiede G.: Landwirtschaftliche Betriebe über 100 ha in der EG, Agrarwirtschaft, Heft 7,

V. Alfred Strothe, Frankfurt am Main 1991;

Statistical Yearbook GUS, Warszawa 1991.

Tab 5 Employment per 100 ha (calculated as fully employed) - 1990

Item	Germany	France	Italy	Holland	Belgium	Luxemburg	Great Britain	Ireland	Denmark	Greece	Spain	Portugal	EEC-12	Poland
Total agriculture	6,5	4,4	12,8	11,7	6,7	6,7	2,4	4,3	3,5	14,2	5,4	19,7	6,8	22,3 <sup>1/2</sup>
Farms above 100 ha AUA	2,2	2,0	2,2	2,3	1,8	2,5	1,5	1,9	2,0	1,2	1,6	3,1	1,8	12,1 <sup>1/2</sup>

1/ Without agriculture services;

2/ In state farms supervised by MRiGŻ and governors

Source: Die Lage der Landwirtschaft in der Gemeinschaft, Bericht 1991, EGKS - EWG, Brüssel-Luxemburg 1992;

Thiede G.: Landwirtschaftliche Betriebe über 100 ha in der EG, Agrarwirtschaft, Heft 7/1991;

Statistical Yearbook GUS, Warszawa 1991;

Own calculations

Tab. 4 Agricultural production in farms over 100 ha AUA

Item	Germany	France	Italy	Holland	Belgium	Luxembourg	Great Britain	Ireland	Denmark	Greece	Spain	Portugal	EEC-12
Number of farms (thous)	5,6	40,3	13,2	0,5	0,7	0,08	38,6	3,5	3,1	0,9	37,1	3,9	147,6
including farms with arable land (thous)	5,5	39,3	10,6	0,5	0,7	0,08	34,3	2,7	3,1	0,7	31,7	3,8	132,9
Percentage of farms specializing in plant or animal production (%):													
-cereals <sup>1/</sup>	96,4	96,4	84,9	80,0	100,0	100,0	81,7	74,1	96,8	57,1	93,1	89,5	90,6
-sugar beets <sup>2/</sup>	50,9	25,2	13,2	80,0	85,7	.	12,5	18,5	22,6	.	8,2	.	17,5
-livestock	78,6	76,7	60,6	40,0	85,7	100,0	85,7	97,1	71,0	88,9	58,2	89,7	73,7
-dairy cattle	25,0	24,1	21,2	20,0	28,6	75,0	24,3	31,4	25,8	11,1	8,9	20,5	20,3
-swine	35,7	17,1	25,0	.	14,3	25,0	7,5	2,9	38,7	11,1	23,7	43,6	18,4
Concentration of production <sup>2/</sup>													
-cereals (ha)	85	115	77	70	65	29	100	40	94	69	105	101	88
-sugar beets (ha)	26	25	34	27	30	.	35	18	26	.	25	.	28
-dairy cattle (heads)	62	42	65	160	76	73	116	78	81	24	22	26	69
-swine (heads)	474	88	283	.	163	183	919	1000	890	20	123	1100	283

1/ In relation to farms with arable land;

2/ Calculated per farms with a given production.

Source: Thiede G.: Landwirtschaftliche Betriebe über 100 ha in der EG, Agrarwirtschaft, Heft 7/1991;

Own calculations.

Tab.7 Prognosis of changes in the structure of farms above 1 AUA

Years	Variant	Acreage groups (ha AUA)						
		total	1 - 2	2 - 5	5 - 10	10 - 15	above 15 ha	above 100 ha from former state run
Number of farms (thous.)								
1990		2138	373	751	637	242	130	x
2000	I	1700	330	450	500	270	160	10
	II	1650	320	410	480	270	160	10
Farm structure (%)								
1990		100	17,7	35,1	29,8	11,3	6,1	x
2000	I	100	19,4	25,3	29,4	15,9	9,4	0,6
	II	100	19,4	24,8	29,1	16,4	9,7	0,6
Agricultural land (thous. ha)								
1990		13400	564	2536	4591	2996	2713	x
2000	I	17340	440	1450	3550	3500	4960	3440
	II	17000	440	1400	3500	3500	4960	3200
Structure of land utilization (%)								
1990		100	4,2	18,9	34,3	22,4	20,2	x
2000	I	100	2,5	8,4	20,5	20,2	28,6	19,8
	II	100	2,6	8,2	20,6	20,6	29,2	18,8
Average farm area (ha AUA)								
1990		6,3	1,5	3,4	7,2	12,4	20,9	x
2000	I	10,2	1,3	3,4	7,1	13,0	31,0	344,0
	II	10,3	1,4	3,4	7,3	13,0	31,0	320,0



Tab.6 Prognosis of agricultural land resources

Item	Acreage of AUA in 1990 (thous.ha)	Reduction of the acreage of AUA by 2000 in thous.ha		Inter sector transfer by year 2000 (thous.ha AUA)	Land resources in year 2000 in thous.ha AUA	
		Variant I	Variant II		Variant I	Variant II
State run sector	4240	-100	-340	-700	3440 <sup>1/</sup>	3200 <sup>1/</sup>
incl:						
state farms of MRIGZ	3251					
other state farms	239					
cooperatives	696					
agricultural circles	54					
Private farms ) 1 ha AUA	13400	}	}	+700	13900	13800
Private farms ( 1 ha AUA, allotments, other AUA	1080				1010	1000
Total reduction	x	-370	-720	x	x	x
Total AUA acreage	18720	18350	18000	x	18350	18000

1/ Formerly state run after privatization transformations

Tab. 8 Farms obtaining total or majority of income from agriculture production

Acreage groups (ha)	1988 <sup>1/</sup>		2000 (Forecast)
	Farms (thous)		Farms and mainly agricultural farms together (thous)
	agricultural	mainly agricultural	
0.5 - 2	27	59	} 200 <sup>2/</sup>
2 - 5	81	223	
5 - 10	174	343	
above 10	175	276	440
Total	1358		640

1/ Data from 1988 refer to total farm area, hence the significant difference despite the passage of only two years in comparison with Tab. 7;

2/ Above 1 ha AUA

Source: Data from the Census, after Frenkel I., Demographic situation and structure of employment of village population in Poland, *Więś i Rolnictwo* N° 3, 1991

Tab.9 Prices of some selected important farm products and means of production as well as the value of capital resources (in the discussed objects)<sup>1/</sup>

Item	Units	Present situation (1991)	Level of world prices	Level of EEC prices
Wheat	ECU/dt	5,65	10,10	15,00
Sugar beets	ECU/dt	1,18	2,00	4,83
Rape	ECU/dt	10,20	17,50	32,50
Milk	ECU/dt	0,09	0,15	0,20
Pork meat	ECU/dt	0,79	1,05	1,40
Mineral fertilizers (pure component)				
N	ECU/kg	0,40	0,45	0,53
P <sub>2</sub> O <sub>5</sub>	ECU/kg	0,35	0,50	0,58
K <sub>2</sub> O	ECU/kg	0,20	0,24	0,28
Monthly wages in a state farm (including insurance)				
- plant production	ECU	132	289	538
- animal production	ECU	152	331	638
Consumption income (labour payment) in a private farm	ECU/h	0,63	1,57	3,14
Interest on land	ECU/ha	27,5	37,5	51,00
Fixed assets:				
State farm:				
- plant production	ECU/ha	616,0	1526,5	2017,5
- milk production	ECU/place	749,0	910,0	2164,5
- swine production	ECU/place	94,0	104,5	272,0
Private farms:				
- plant production	ECU/ha	3682,5	4977,5	6092,5
- milk production	ECU/place	1009,5	1100,0	2937,5
- swine production	ECU/place	117,5	135,0	341,0

1/ Because the objective of the paper is to determine adaptation possibilities of Polish agriculture to EEC conditions, all the calculations, all the calculations are in ECU. When calculating from German sources, the rate of exchange was 1 ECU = 2.05 DM. At the time 1 ECU = 1.29 USD.

Source: Toepfer International, 1991;  
Agrarwirtschaft 12/1991;  
Own calculations

Tab.10 Profitability of winter wheat production - state farms (model)

Item	Units	Present situation (1991)	World prices			EEC prices		
			No adaptation	Adaptation of labour resources and capital	Changes in farm organization	No adaptation	Adaptation of labour resources and capital	Changes in farm organization
Yield	dt/ha	65	65			65		
Price	ECU/dt	5,65	10,0			15		
Value of production	ECU/dt	367	650			975		
Seed material	ECU/ha	20	33			45		
Fertilization	ECU/ha	113	139			163		
Plant protection	ECU/ha	38	100			101		
Variable costs	ECU/ha	59	83			82		
Interest of working capital and other variable costs	ECU/ha	37	42			42		
Proportional special costs - total	ECU/ha	267	397			433		
Gross profit	ECU/ha	100	253			542		
Labour costs	ECU/ha	58	126	66	18	234	123	48
Depreciation	ECU/ha	52	143	103	95	162	122	113
Remaining overhead expenses + tax	ECU/ha	31	32	32	32	32	32	32
Financial results	ECU/ha	-41	-48	52	100	114	265	349
Land interest	ECU/ha	27	37	37	37	51	51	51
Interest on the fixed capital	ECU/ha	25	61	45	42	80	65	61
Overhead expenses	ECU/ha	460	796	680	429	992	826	738
	ECU/dt	7,08	12,25	10,46	9,53	15,26	12,71	11,35
Net profit/loss	ECU/ha	-93	-146	-30	21	-17	149	237
	ECU/dt	-1,43	-2,52	-0,46	0,47	0,26	2,29	3,65

Source: Own calculations

Tab 11 Profitability of winter wheat production - private farms (model)

Item	Units	Present situation (1991)	World prices		EEC prices	
			No adaptation	Adaptation of land resources	No adaptation	Adaptation of land resources
Yield	dt/ha	65	65		65	
Price	ECU/dt	5,65	10,0		15,0	
Value of production	ECU/dt	367	650,0		975	
Seed material	ECU/ha	24	39		59	
Fertilization	ECU/ha	120	148		173	
Plant protection	ECU/ha	31	86		86	
Variable costs	ECU/ha	60	84		84	
Interest of working capital and other variable costs	ECU/ha	52	56		82	
Proportional special costs - total	ECU/ha	287	413		484	
Gross profit	ECU/ha	80	237		491	
Labour costs	ECU/ha	12	30	24	60	47
Depreciation	ECU/ha	273	463	277	503	302
Remaining overhead expenses + tax	ECU/ha	10	10	10	10	10
Financial results	ECU/ha	-215	-266	-74	-82	132
Land interest	ECU/ha	27	37	37	51	51
Interest on the fixed capital	ECU/ha	123	199	120	243	146
Overhead expenses	ECU/ha	732	1152	881	1351	1040
	ECU/dt	11,26	17,26	13,55	20,78	16,00
Net profit/loss	ECU/ha	-365	-365	-231	-376	-65
	ECU/dt	-5,62	-5,62	-3,55	-5,78	1,00

Source: Own calculations

## VI. EVALUATION OF THE POTENTIAL TO IMPLEMENT MARKET ORIENTED MEASURES INTO POLISH AGRICULTURAL POLICY

In the numerous available analyses of the condition of Polish agriculture, attention is as a rule concentrated on underlining recession phenomena, while the evaluation of the economic condition of the food sector is most often based on the so called extrapolation of trends, which comes down to a simple continuation of the situation recorded in the 1980's. Starting with the basic principle of the then agricultural policy - that is maximization of the rate of growth of farm production - very detailed calculations are made, to assess which part of farming output has dropped or what was the decline in the cattle or sheep numbers. All in all, a catastrophic vision of the condition of Polish agriculture dominates with warnings of "imminent danger of famine" in Poland not unusual.

One would like to make the following observations in relation to such evaluations of the present condition of Polish agriculture:

- firstly, it is not justifiable to affirmatively view as optimal the condition of Polish agriculture in the past half century. This would not be justified by the past efficiency of Polish farming or by its dynamism nor the fulfilment of the expectations of agricultural producers nor of consumers. Calculations by J. RAJTAR 1/ show that demand for food products as a rule exceeded supply by about 10 percent, but in some periods - for example the end 1970's and early 1980's - this figure was between 15 and 20 percent. The fact that a system of food rationing - through coupons, had to be introduced, indicates that the past situation can hardly be considered as a positive benchmark for the evaluation of the present state of Polish agriculture.

- secondly, an assessment of the state of Polish agriculture in the 1989-1991 period seen as a simple continuation of past trends, must be described as a misunderstanding. Agriculture finds itself today a part of a very specific stage of transformation from the past system of a centrally planned economy, towards a market oriented system, respectively from an autarchic economy to an open one, linked to international markets. This means for Polish agriculture a situation of transition conditions, thus premises related to the past system are no longer in force, while new ones are *in statu nascendi*. Clearly one observes that the new principles of agricultural policy, a new instrumentarium for support and regulation of the agricultural sector are yet to be fully refined, thus their recognition and acceptance by agricultural producers are very limited.

All in all, Polish agriculture finds itself in the course of a process of departing from an "old" towards a new philosophy of development, sector management and functioning, this concerning rather the whole food sector than agriculture alone. The market and its forces and their inter-actions constitute the basic determinant for the formulation of this new philosophy in the development of the agricultural and food sector. This new philosophy will be as well decisive for the success of Polish economic reforms in general, their capacity to resolve the country's principal social and economic problems. These issues are the subject of this paper.

### 1. The Theoretical Framework for the "Market" Category

In its everyday use the category of "market" appears to be understood in a most simplified manner. As a rule it is brought down to single sell-buy transactions. This simplified view of the market category gives ground to extreme attitudes - from traditional glorification of the "invisible hand of the market" (quoting Adam Smith) to total nonchalance and discarding the positive attributes of the market. Within the framework of the theorem of rational expectations <sup>2/</sup>, the understanding of the market at present in Poland is rather in terms of naive expectations than rational ones.

What in fact is the market ?

To use the most universal definition, the market may be described as a multi factor, many sided, multi subject PROCESS, with many premises and conditions. Let us accent the word "process", thus the continuous motion, fluctuations, superficial disorder and change, while in fact subordinated to clear logic and cause and effect relations. In the market process we see a place for the scaling of arguments, notions, both related to the subject in question and not related directly, of the conditions and expectations of the buyer and the supplier. In effect, the buying - selling price is an outcome of the filtration effect (confrontation) of particular positions, thus it becomes a parameter best expressing the costs on the one hand, the benefits on the other. In effect, the market is the best system for social verification of the social value of goods, services, and indirectly of producers and buyers, and further - of branches of the national economy, and in relation to the global system - the economy of a particular country. As the history of modern economy shows, outside the market system it has not been possible to construct another system of evaluation equally efficient.

The market process through its multi-plane confrontation of the notions of the buyers and of the sellers, through price

competition and also non-price competition is by its very nature of self-correcting character. One may indeed speak of market perfectionism. In turn, in technical and economic categories the optimization of market relations is perfect. This however brings forward the practical question whether in social categories it is possible to accept the "pure" market results? Or might "softening" actions be necessary, to make this pure market evaluation result more acceptable? If this is the case, then this opens up the road for specific actions, to intervention systems affecting the market.

In the sphere of social market consequences in general the tendency dominates to decrease the impact of the price, as dictated by the aforementioned market perfection, thus the specific intervention actions will "amend" the results of the market evaluation. This is supported and parallel to specific ideologies, such as that of a social market economy.

Another area of market imperfection is the difficult to resolve dilemma of the usefulness of the market or lack of it in the implementation of long-term development programs or of large scale investment projects. Thus the view dominates that the market as such is not capable of creating the required, long time horizon, development models, investment projects or educational undertakings preparing the public for the future.

All in all, the actions undertaken within the framework of economic policies, aimed at "softening" the impact of market perfection and the imperfections of the market, viewed as a tool for creating the long-term form of social and economic development, are frequently found at the very foundations of broadly conceived interventionism, principally state intervention. This concerns as well, perhaps first of all, the food sector.

When demonstrating the premises of this interventionism, one cannot but remark that an important premise is also shortage of knowledge - or to put more bluntly - ignorance of the part of decision makers in the realm of economic policy. This consists, on one hand, of yielding to pressure of often transitional public vocational interest groups, on the other - short skills in avoiding making decisions, not looking ahead to complete results of intervention actions, in particular in the long run.

No doubt as a classical example in this respect one may cite the intervention programmes of the Common Agricultural Policy of the European Communities. Broad price intervention on agricultural markets, subsidies to farm production, to supply of farm inputs, elimination of competition coming from international agricultural products markets - all these have indeed permitted to fulfil many demands on the part of farmers



in Western Europe but in effect have as well caused a very expensive and at the same time difficult to resolve problem of surpluses of farm products, coupled with relatively high social costs of food production, huge costs of financing the intervention policies in question. On the one hand, the problems of the agricultural sector which were the original reason to undertake the intervention - have remained unsolved, these being respectively the lower productivity of the agricultural sector in comparison with the balance of the national economy, excessive production potential involved in farming, too many farms, etc. The proposed programs of radical reforms for EC agriculture may be viewed as an essay to finally perform the execution, the "sentence" announced by the market years ago.

An important attribute of the market is uncertainty. In fact, this uncertainty, defined as the potential possibility to achieve different results as effect of particular undertakings - constitutes the principal factor of economic life in general.

When analysing the category of uncertainty on the market, one records two types of this uncertainty; first that arising from the morphology of the market as a process, second that induced by particular economic policies. Financial policies affecting agriculture, as well as structural policies, import and export policies etc., all exert upon the agricultural markets to greater degree uncertainty rather than stabilization, the latter however being as a rule given as the reason and justification for the introduction of particular policies. In fact policies affecting the size of the farm, the supply of agriculture with inputs, the income situation of agricultural producers, all these remain in conflict with parameters determined by the market, constituting in the final effect artificial systems, which - in particular in the long run - themselves become factors causing increased uncertainty, followed by destruction.

At this point it worth to relate to the very often resented demands presented by agricultural producers, supported by the farmer based political parties, that stabile rules should be established, thus a specific freeze of conditions for farm production or more broadly - for farm management. Such efforts aimed at stabilization of conditions of agricultural production, being contradictory to market logic, further, being in contradiction to the logic of development, cannot be efficient and thus in the long run must bring about negative results, of course in contrast to the original expectations, which were oriented at stabilization of farm production conditions.

The level of uncertainty in farm management, in addition and parallel to the still continuing strong impact of natural conditions, is a direct function of ignorance, lack of cognition of premises, conditions, both in macro and micro

scale, by agricultural producers and by politicians alike. Thus the most certain and efficient way to reduce this uncertainty is to work towards improving the knowledge and recognition of premises and conditions of farm management and of the very morphology of the farm markets functioning, of the market considered as a process.

## 2. The Market in the Process of Reforms

A foundation of the ambitious program of reforms and transformation of the past system of command allocation in the Polish economy is the opening up of the economy to international competition, this including the food sector.

The creation of the system of a market economy proved never to be a difficult process, generating many conflicts, making its way with difficulty, having to fight the almost half century tradition of discrediting market rules, facing social habits, adjusted to well practiced rules of behavior in the past, artificial economic system. To obtain an understanding of this process, to undertake specific actions to affect its course requires however recognition of the specifics of the very process of economic reforms, of its dynamics in particular.

One may say that always risky and socially costly reforms are first undertaken, later accelerated as result of two types of premises, conditions: social desperation and social hopes. The desperation resulting from the declining standard of living of the principal population groups, as result of the deteriorating situation in the national economy; further the declining technical and economic efficiency, the dwindling dynamics of the economy and the entry into the stage of recession, to put it in general terms - the "folding up" of the national economy, collapse of the organization of social life, discrediting of the dominating ideology, in effect, the dismantling of the former social and economic system. The social desperation is thus based on the experienced deterioration of the standard of living on one hand, on the other on the dim or none at all prospects for improvement of the situation of the families, of social groups. The hope, often of romantic character, is based on belief that the commencement of the process of reforms will serve to reverse the degressive trend in the economy, which should result in an immediate, rapidly noticeable improvement of the welfare of the society.

This state gives ground to public expectations and/or expectation to the necessity to introduce the important changes, transformations, thus reforms, so as to counteract the depression and to formulate the path of hopes for the future. An

imperative thus become such reforms of the economy that it will become competitive on international markets; that the national markets are balanced in terms of supply and demand; that the public is guaranteed a satisfactory level of social and economic security. In the post-socialist countries an additional, autonomous, goal of the reforms appears, this being the "dismantling" of the past system of the socialist economy and the construction, to replace it, of a new economic system, defined as capitalist, market oriented. In order to achieve these goals the reforms make use of a specific instrumentarium. The basic elements of this instrumentarium are as follows.

- Reduction of the state budget deficit, through blocking the outflow of empty money, as effect of strengthened fiscal discipline, a growth of state budget revenues from taxes and through privatization realized through sale of state enterprises.

- Achieving equilibrium on the market of consumption goods, this achieved through reduced control by the state or liberalization of prices, reduction or abandoning subsidies to prices, lastly through liberalization of imports and exports.

- Setting into motion mechanisms to eliminate inefficient enterprises, through bankruptcy, anti-monopoly action, recognition of unemployment as a natural consequence of the restructuring of the national economy, of re-organization of the national and of particular labor markets.

- Rationalization of the process of investment through organization of the market of investment goods, of capital and labor markets and through support of direct investment by foreign capital 3/.

In each concept of the strategy for reforming the economy the category of the social costs of the reforms play a major role. In general terms these may be defined as a decline of consumption levels (standard of living), inflation, unemployment, temporarily inefficient allocation of capital and of labor.

In the context of the social costs of reforms, the following issues appear to be of basic importance:

- is it indeed necessary to bear the social costs in the course of the reforming the economy or is there a real possibility to resolve this issue, following the path of the so called Czech velvet revolution. All recorded experience of reforms under way indicates that avoiding the social costs involved is not possible. As this has been indicated the reforms of the economy are undertaken as result of the downward curve of the level of social incomes and of the standard of living. nevertheless, the curve of destruction of the past system inefficiency, indebtedness, destruction of the natural

environment) takes a much more dramatic course. The introduction of reforms (liberalization of prices, reduction or elimination of subsidies, opening up to competition of external markets) - this becomes the literal hour of truth, coupled with bringing the social incomes and respectively consumption down to the level of actual social productivity in terms of creation of national income. As a rule this means further decline of consumption, of the standard of living levels, thus more acute social costs of the implementation of reforms;

- one asks thus whether the key target for the strategy of reforming the economy should perhaps be the minimalization of the social costs of the reforms. The experience so far, in particular of the reforms which ended in success, rather clearly indicates that the answer to such a question is negative. The optimum category for the reform strategy is not so much the minimalization of the social costs of reforms but rather achieving success of transformations of the economy since destructed, through equipping it with characteristics of dynamics and rationality, through creation of a new economic system. In the reform strategy one may distinguish three options:

1/ a radical shock therapy, resulting in high social costs, a rather acute decline of the social incomes as well as consumption but lasting a relatively short time, after which the reformed economy acquires dynamism and permits to rebuild the past level of consumption and further on, a "healthy" economic development. In this model the social costs are high but they are experienced in a short period of time. This model, strategy may however be implemented only when there is social and political support for it, while, parallel, the standard of living prior to the reforms permits its lowering without endangering the biological existence of major social groups;

2/ a strategy of gradual reforms, extended in time. This is a strategy characterized by comparatively higher social costs as the experience of Hungary and Czecho-Slovakia shows, more extended in time. Furthermore, this strategy has nowhere yet been crowned with success;

3/ a strategy of maintaining the *status quo* - abandoning the reforms of the economy or even a return to the past model of the economy. This strategy variant will entail the highest social costs and will constitute in the future a major barrier to undertaking reforms, thus adding to the already high social costs.

When analyzing the process of reforming the economy one should in particular stress the following apparently optimal sequence for implementation of reforms during the period of particular strategic options:

- radical, jump start and implementation of the first stage of reforms. This means that such decisions as liberalization of

prices, in whole or in part, elimination and radical reduction of subsidies to particular sectors of the economy, real interest rates charged on credits, convertibility of the national currency - all these ought to be implemented at once and should apply to all sectors, to all entities in the national economy. During this period there is no room or opportunity for special treatment of any of the sectors, e.g. agriculture;

- transfer from the period of shock reforms to a period of gradual actions, spread out in time in such domains as creation of market structures and institutions, privatization and commercialization of the former state sector, creation of new legal systems. It is in this period that the possibility appears, or even the necessity to differentiate the approach towards particular sectors, for example agriculture. The first stage had in fact permitted to set into motion the market mechanisms, which further on may be supported or corrected through state intervention.

If one was to essay definition of the logic of processes of reforming the economy, then this could be attempted as follows: one should set into motion in the national economy on the broadest possible scale spontaneous market processes, natural economic forces at play - thus permitting the objective processes to materialize, to gain public acceptance, then, following the defined model of the new system, the state may undertake in proper time and form corrective actions, as well as actions supporting spontaneous market processes. As experience has shown, at the basis of success of the undertaken reforms lies the collaboration of the state with the spontaneous market based economic processes, rather than attempting their majorization or replacement with non-market regulations.

### 3. The Agricultural Sector within the Polish Economy Reforming towards the Market System

The reforming of Polish agriculture in the direction of giving it a market orientation started on a marked scale in 1988. The market economy principles introduced assumed allowing self-regulatory mechanisms, starting with free (not controlled) prices for farm products, nevertheless guaranteeing to farmers minimum prices, further prices for farming inputs to be negotiated and free prices for food products, although for some products prices remained controlled by the state.

The introduction of market mechanisms into the food producing sector as a whole assumed the extension of the market based philosophy of management in agriculture, in the particular farms and in their environment, this composed of the farming inputs industry, food and farm products processing etc. This assumption proved to be not a realistic one in the practice inherited from the socialist economy.

The cause for this was the result of the weaknesses demonstrated by the agricultural sector when confronted with the other components of the food economy and with the non-agricultural parts of the national economy. The economic bargaining power of agriculture, the organization of farm producers, the effectiveness of the agricultural lobby - all these failed to face the challenge of market competition or the dictate of the monopolistic organizations ruling the respective markets.

The experiment with introduction of market mechanisms to the food economy did not last long. In 1990 the Solidarity based Government introduced the comprehensive program of reforms in the national economy, to replace the former command allocation system by market principles and regulations, the past socialist mono-centre society by a democratic system.

The above resulted in new premises and conditions but also new challenges for the agricultural sector. The priority targets in the process of economic reforms were moved from the agricultural sector to the national economy as a whole; success in reforming the national economy became the main goals, to which the goals of particular sectors were to be subordinated. This was the reason why in the strategy of reforms, in particular in the period of stabilization of the economy, there was no possibility to offer special, preferential treatment for agriculture.

The implemented program of reforms assumed that after 2-3 years of the stabilization period the principal components of the new economic system in three key areas will be formed:

- property relations, through privatization, commercialization (through the creation of communal property, cooperative, workers participation programmes) of the basic part of the so far state production assets;
- market mechanisms and institutions, through their extension and expansion and their recognition as the basic regulation instrument of economic processes, both in the sphere of production and in the sphere of distribution;
- taxation regulations, the financial system as well as banking and convertibility of the Polish currency and constrained import and export opening of the Polish economy to international markets.

The introduction into life of the aforementioned system created a diametrically different situation for the agricultural sector - both at the level of the farms, as well as in the sector's external relations. Agriculture faced the necessity to adapt to the new philosophy of the country's economic life, to

adjust to the new external parameters for agricultural management. The principal determinants of this new situation appear to be as follows:

- Extension and expansion of market based determination of prices for farm products and for farming inputs, which meant in effect that the factor actually defining the levels of prices became the relation between supply and demand but at the same time, for the time being, a role of importance was to be of intermediaries, the latter often with a monopolistic position. The bargaining position of agricultural producers was clearly weakened - prices were no longer the subject of negotiations in the former understanding of the word (since the guaranteed minimum prices for farm products were eliminated) but were determined by the results of commercial bargaining alone.

- Reduction of elimination of subsidies to food products and to farming inputs has resulted, in the opinion of consumers, in food products becoming expensive, which in turn caused a lower level of demand. This has resulted in the principal complex component of the situation of agriculture in the course of the transformation process. The clearly unfavorable proportions, determined historically, in the distribution of national income into individual incomes and accumulation and public consumption, have resulted in traditionally low wages and high share of expenditure on food in the average family household budget. This resulted in a low income elasticity of the demand for food. The growth of wages was in turn slowed down by the slow improvement of economic productivity of the outside agriculture sectors and by fears to "fuel" the inflation.

- Reduction of the past preferential credit and taxation schemes for agriculture, which brought about particular difficulties for those wishing to start a new farm or to increase the production potential of an existing farm.

- Convertibility of the Polish currency, opening up of the Polish economy to global markets meant in effect for the Polish farmer the necessity to compete with American, West European or Soviet farmers.

All in all, at the very threshold of the undertaken reforms of the national economic system Polish agriculture faced the numerous dilemmas of the transformation.

The three years passed of reforming the economy permit an essay at evaluation of the behavior of the agricultural sector in the course of reforms. In categories of agricultural policy this was a far from uniform period: the years 1989 to 1990 were period of rather consequent introduction of market principles, both in the domestic agriculture sector and in the sense of its opening up to international competition; the years 1991 to 1992 in turn were a period of domination of the policy of state interventionism and of autarchic content in foreign relations,

as witnessed for example by the very concept of "blocking tariffs on imports". Further in this evaluation one may distinguish clearly two dimensions; in the real sphere, the technical and economic results of agriculture during recent years (1990 to 1991) and in the sphere of social reflections, in the evaluating opinions of agricultural producers and by farmer political organizations.

If one will relate the principal technical and economic criteria of the production situation of Polish agriculture in the years 1989 to 1991 to the longer term development trend of the 1980-1990 decade, then we see that the situation is as illustrated in figures

**F a r m p r o d u c t i o n**; Farm production in its principal categories (final production sold, production sold and net production) were maintained at the high level of the 1986 to 1988 period.

**I n p u t s f o r f a r m p r o d u c t i o n**; A drop was clearly recorded of the material outlays for production and for services. Use of labor and amortization of fixed assets were maintained at the same level. In total the outlays for farm production were markedly decreased by about 10 percent.

**E f f e c t i v e n e s s o f f a r m p r o d u c t i o n**; Full efficiency of of farm management, measured as the ratio of final production to the input of production factors, has been characterized by important growth. It is a matter of dispute to what extent this improvement was caused by system changes and what part was of an incidental nature (short financial resources for purchase of production inputs), nevertheless this is indication and measure of the fact that the agricultural sector in the new economic conditions functioned relatively better compared to the outside agriculture sectors. One takes into account the conditions and starting point of Polish agriculture, as dominated by the private farms sector, in particular the functioning of the mechanism of the farmer household, then in fact in the appearing new market principles this situation could not be different. Furthermore, one may voluntarily formulate the thesis that in the years 1990-1991, agriculture and the food sector as a whole were an important factor for the rationalization of the whole economy. This may be attested by the following indicators:

- the return to a relatively high level of farm production permitted to rebuild already in the first half of 1991 the level of food consumption to its volume prior to the reforms;

- a high rate of growth of food and farm products exports and a positive exports and imports balance became an important source of accumulation of financial means for the national economy;



- the relatively lower in the period under discussion rate of growth of prices of farm and food products in comparison to the growth of prices of non-food products constituted an important factor to dampen inflation.

All of the above may be recognized as unquestionable impact of the market mechanisms set into motion, oriented at the process of reforms and transformation of the national economy.

At the same time in the sphere of public opinion the situation in agriculture is described - to use the results of research by Professor D. Gałaj - as catastrophic 4/. This is a phenomenon well known throughout the world. In Polish conditions two additional factors exert an influence.

- The great expectations found among farm producers of the positive results already to appear in the very first stages of introduction of market mechanisms into the food economy. These expectations, as we have tried to show, could not be fulfilled.

- The "heating up" of the alarmist opinions on the situation in agriculture by the farmer, peasant political organizations. A review of the programmes of these organizations permits to understand the premises and reasons for such attitudes. The peasant/farmer political organizations are still oriented at the "peasant getto". Such an orientation, even if regarded in the light of the incorporation of agriculture into the national economy as a whole, must lead to incorrect valuations and misguided programs for development of agriculture and countryside. What more, the fragmentation and great number of peasant/farmer political organizations leads to a particular form of bidding as to who better represents the interests of farmers - the starting point in this respect is the negative assessment of the existing state of things. Finally, the farmer political organizations are dominated by political projects, which in fact may be of benefit only for their political leaders and related groups.

Starting with 1992, agricultural policy gradually is coming dominated not so much by the real sphere, by the market logic of the state and development of agriculture but rather by the optics of "social" reflection of the market of politics.

The considerable dynamics of the 1990 to 1991 period of adjustment processes, in reaction to the new external economic conditions, have diminished. We observe a marked change in the orientations and attitudes of agricultural producers, from an attitude aimed at improving productivity and better management, achieving higher incomes while using the available production factors, this to improve or at least maintain the present income situation, towards an orientation concentrating on demands to raise farm products prices, expectations of intervention government actions, such as those concerning preferential terms

of credits, minimum (but profit bringing) guaranteed prices, "blocking import tariffs" for food products, etc.

As result the dynamics of growth of prices of food and farm products are slowly beginning to run ahead of the growth of households' incomes, which means that the food sector is becoming an inflation generating factor, in fact destroying the whole system of the national economy.

#### 4. Market Determinants of the Food Consumption Model

The level of food consumption was always a central issue of social and economic policy in the period of the centrally planned economy, this both for Poland and for the other countries of Central and Eastern Europe. The matters related to feeding the nation always remained in the center of the state's interest. This interest in the sphere of the strategy of development of the national economy was at first transmitted into the principle of food self-sufficiency, later food security, to be realized on the particular countries' scale. In effect, a complex syndrome of making the country's economy dependant on food requirements evolved. Its effect was the expansion of the food sector, to constitute up to 30-40 percent of the country's whole economic potential. This resulted in a high level of supply of food products and their consumption, when related to the overall level of the country's social and economic development. The supply with food products, when reckoned in such basic parameters as daily intake of calories, protein intake, fats etc. was in Poland in the period prior to reforms comparable with the level in West European countries.

At the same time other indicators, characterizing the standard of living, demonstrated a drastic discrepancy between Poland and the aforementioned group of countries, which not only continued in time but as a matter increased. It is reasonable to ask for the justification of such a state of things. As the principal premises one may assume the following:

- the long term demand trend for food which in its graphic form represents a shape close to the letter "S". This means that in the early stages of economic development the demand for food increases at a moderate rate, while in the intermediate stage of development the demand for food products increases dramatically, then in the stage of advanced development the dynamics of growth of the demand for food start to decline, finally in the stage of advanced economic development the dynamics of demand for food approach zero. Poland is at present in the intermediate stage of economic development, thus with characteristic high dynamics of growth of the demand for food; the food products market always was in Poland a "hot political issue". It was the condition of the food products market which would be decisive for the social acceptance for the political regime and would

dictate social peace or tensions;

- the public in the socialist system, "liberated" from the investment outlays for production inputs, construction of housing, costs of schools, medical care - since all this was guaranteed by the State, could earmark the principal part of its incomes (50 to 60 percent) for spendings on the food products market. The level of food consumption was an important parameter of the standard of living, determined not only by the incomes of the particular family (food was relatively inexpensive) but rather by the ability to "procure" food;

- Poland, same as the other countries of post-socialist Europe was implementing the model of an egalitarian society. The spread of incomes, measured by the relation of the level of incomes of the 5 percent of the households with the lowest incomes to that of the 5 percent of the households with the highest incomes, amounted in Poland to approximately 1:3, while in Latin America this was about 1:20. The egalitarian tendencies are an important factor serving to increase the demand for food products;

- the Polish society is in the course of the process of urbanization. This transition process from a rural to an urban society, manifests itself through a high rate of consumption of food products. The process of profound transformations of the economy in the course of reforms could not remain without impact, neutral as concerned the level of nutrition of the society. To present this in the form of conclusions, the principal determinants for the consumption of food products in the process of reforms, are as follows:

1. In the period of introduction of the basic rule of market economic reforms, i.e. the release of prices, the elimination or radical limitation of subsidies in the economy, the commercialisation of credit, national currency convertibility - a marked decline is recorded as concerns purchase of food products, a smaller drop in food consumption, is made possible as effect of using up stocks. This is however periodical collapse of the level of consumption, lasting about six months, followed by a relatively rapid reconstruction of the level of consumption.

2. The phenomenon of defending the past relatively high level of consumption has manifested itself in full extent. This is taking place at the expense of limiting the non-food components of consumption and earmarking the principal part of the incomes of the family household for purchase of food. About 70 percent of the households total number would in the years 1990 and 1991 earmark 70 percent and more of their incomes for purchase of food.

3. After the short term fluctuations, the level of food consumption returns to the general tendencies and regularities, these being a declining share of expenditure on food in the overall spendings of the households, further upgrading and

sophistication of the model of food consumption; a growing differentiation of the food consumption models in, respectively, less and more affluent families and households.

4. The reconstruction of the level of food consumption was first a constraint, later served to eliminate the demand barrier for products offered by domestic agriculture and food industry, which appeared in the first stage of reforms, mainly in the year 1990.

5. The reconstruction of the level of consumption, the differentiation of the diet into the "poor" and the "rich" caused a strong pressure on imports of food. This is rather understandable if one considers that the affluence of the West European grocery and table as concerning the varieties of products, brands etc. was on the average two- threefold greater than in Poland.

6. The model of food consumption to a large extent was subject to "Westernization", which may be recognized within the economic development strategy, in particular in the process of integration of Poland with the European Economic Community, as an important factor favoring this integration.

The broad impact of the market mechanisms in the sphere of the food sector in the course of the process of reforms resulted in a short period in marked, not to say, basic changes in the market based model of food consumption.

First of all, the economization of the food products market was effected. The elimination of the system of subsidies, both for producers and for consumers of food, made the market transparent. The category of so called empty demand for food ceased to exist. The food products market became an important source of parameters (signals) for specific behaviors, both on the part of food consumers as well as producers.

Secondly, as result of the market evaluation of the food products, as effect of shaping of real relations between the prices of food products and the incomes of the particular groups of households, further as effect of elimination of the uncertainty in the supply with food - a broadly understood rationalization of the food consumption model had place. This means an important premise for the overall improvement of the rationalization of the social and economic functioning of the country as such.

Thirdly, the process of privatization and in principle the full introduction of market mechanisms and institutions in the food sector, markedly decreased (i.e. through the elimination of rationing, queues etc.) the social costs of the functioning of this sector.

Fourthly, the process of introduction of market mechanisms into the food sector, as well as the food consumption model, caused an unusually favorable phenomenon, consisting of destroying the myth of the food products market category - food products have ceased to be a special, an extraordinary group of goods. The ease and continuity of supply with food products, the potential possibility to compensate through imports the lack of stability of the domestic production of food, made food products a standard, normal category of market products, completely comparable as concerns rank with the other than food products and services.

The general conclusion which appears when analysing the market determinants of the model of food consumption, may be phrased as follows: a fully real demand for food products has been created; its reality is determined both on the domestic market as well on international markets scale through the convertibility of the Polish currency. Real demand, which constitutes a stable and at the same time hard parameter for food producers, constitutes at the same time a strong motivation, incentive to satisfy the demand, this being an incentive both for domestic and for external producers. In this sense the traditional concern of the State to cover the real demand for food is practically no longer relevant. The real demand will always result in the required production. It remains - in an open economy - a matter of competitiveness, efficiency, quality and range of food products offered, this including farm management, as well as the extent to which the real demand for food products will be covered by domestic producers and the extent to which external suppliers will participate. In this way the introduction of market determinants into the food sector in the process of reforms of the Polish economy permitted to define the basic premise (principle) of permanent validity for the development and modernization of Polish agriculture.

##### 5. Market Intervention Policy in Polish Agriculture

In the agricultural policy implemented in Poland in the years 1990 to 1992 two clearly counteracting tendencies were apparent:

- actions in favor of liberalization of markets; these were characteristic for the 1989 to 1990 period;

- actions in favor of subsidizing agriculture and protecting domestic farm production; these were recorded mainly in the years 1991 to 1992 5/.

The year 1992 one may recognize as being dominated by tendencies for increasing intervention by the state. The practice of subsidies and protection of Polish agriculture were implemented in the following ways:

Determination of farm products prices

True enough in accordance with the accepted system principles, the State gave up direct determination of the prices of farm products but it did keep in its power the mechanisms for such an indirect influence, this mainly through the intervention activities of the Agricultural Market Agency (in Polish: Agencja Rynku Rolnego).

This Agency announces for public notice the foreseen intervention prices and this very fact by itself exerts a certain influence on the actions of particular subjects on the market, this including also an influence on prices. The activities of the Agency are oriented at stabilization of prices. They are of course not as effective as the farmers had expected them to be. In this sense the effectiveness of the agency activities was low but one cannot negate the impact completely. It is very probable that without these stabilization schemes by the ARR Agency, the price and income effects of the market transformations would be even greater.

In 1991 the aggregate index of prices received by farmers for their products was 130. If one considers that the index of inflation was in the same period 170.3, then one must observe that the real level of farm products prices dropped by 34 percent. This was one of the major factors affecting the weak business conditions in agriculture. This statement is in fact valid for all farm products, though obviously in a differing extent.

The price indexes for the major farm products in comparison with 1990 were as follows:

total grains	- 96.0	cattle	- 136.8
wheat	- 97.2	swine	- 123.0
rye	- 79.3	milk	- 165.0
potatoes	- 197.9		

Minimum prices

The issues related to prices creation did not in 1991 go beyond discussions and political conflicts. The broadly understood agricultural lobby clearly opted for the establishment of minimum prices, in particular for grains and milk. The Government decision in this respect was made in '92. The minimum prices for grains and for milk are seen never only as the bottom line for the intervention prices (directional), which are established every year by the Agricultural Market Agency. When prices drop below this prescribed level, intervention actions by the Agency are set in motion. Thus the Government was not inclined to offer price

guarantees or to guarantee procurement of farm products at pre-determined prices. This divergence of positions was of a rather fundamental nature. In 1991 this conflict was not possible to resolve or to overcome and the issue remains open. In beginning of 1992 this conflict went into a stage of final decisions, this being an obligation imposed upon the Government by a decision of the Polish Parliament - Sejm of 3 October 1991.

While there is no doubt that State intervention is necessary in the direction of stabilization of agricultural markets, farm prices and farmer incomes, then it is little probable that these actions would lead to guarantees of farm products procurement. The minimum prices for the principal products (grains, milk) are established on the basis of the current market situation, not on the level of incomes, which might be guaranteed to farmers in advance. In this concept the minimum price is the directional price determined by the Agricultural Market Agency and the approach of current prices (market) to its level sets into motion obligatory intervention activities by the Agency. Thus, in practice the market price should never reach the level of the minimum price, although theoretically this is possible. The heart of the matter is not so much the determination of the minimum price but also, perhaps first of all, the choice of such a strategy of the Agency which would stabilize the market and not permit the market prices to drop below the threshold price (minimum).

The mechanism of minimum prices cannot operate alone and automatically. The principal decision, which in fact determines the scale of intervention, is made in fact by the Parliament - the Sejm in the course of the procedure of accepting and voting the State budget. It is in fact a decision on the re-transfer of incomes and it is only repeated on the market and determines the scale of intervention of the ARR Agency, thus also the level of prices offered to farmers. The level of minimum prices depends on the State budget decisions, not on the *a priori* established rules for the establishment of minimum prices. Even if these minimum prices would be established, it would remain doubtful if they could bring about greater effects than the present activities of the Agency, provided that there is no further re-transfer of incomes from the budget to agriculture.

#### Credits and Interest Charged

The crediting of the food sector has been demonopolized to a large extent. The Bank for Food Economy (in Polish: Bank Gospodarki Żywnościowej) lost its former monopolistic position, this is true as well of the cooperative banks, which nevertheless control 85 percent of the loans offered to the food sector. New banks have made their appearance, offering more or less attractive conditions of credits and deposits. The domestic market has also received some foreign credits, with a number of banks from Western Europe and USA starting operations.

The domain of state intervention were credits offered on preferential terms, to be used for the financing of: (1) procurement of agricultural raw materials and stocks from the 1990 and 1991 crops; (2) biological progress in agriculture /purchase of seed and breeding material/; (3) purchase of farmland; (4) purchase of mineral fertilizers; (5) adapting of the farms to requirements of ecological farming methods and (6) purchase of wheelchairs for the handicapped. The engagement of the State budget in the financing of development of agriculture and of food industry in 1991 was as follows:

	PLZ	ECU
	million	
	-----	-----
- credits for purchase of mineral fertilizers and crop protection chemicals	850,000	53
- credits for investment related to modernization and restructuring of agriculture	295,000	18
- credits related to investment in restructuring the food processing industry, feed industry and rendering	16,000	1
- credits for procurement of farm farm products and their storage	200,000	12

If one was to relate the scale of the credits granted to the value of the agricultural commercial production in 1991, then one has to recognize the intervention activities through these credits as relatively small, both as concerns the process of farm production, as well as the structural transformations of Polish agriculture.

#### Intervention Procurement

A number of companies are involved with procurement of farm products but intervention activities of the market are conducted only by the Agency of Agricultural Markets. Its mandate foresees: (1) procurement of surpluses of products in periods of low prices, (2) stocking of reserves and sales of surpluses including exports/ in periods of high prices, (3) imports of farm and food products, depending on the needs, (4) offering guarantees and collateral for loans, (5) performing current analyses of the market situation and elaboration of forecasts. The Agency conducts a policy of indirectly exerting an impact on agriculture. The scale and effectiveness of this impact to a decisive degree depend on the budget of the Agency. The sources of the Agency are composed of revenues from its current operations and of a State budget subsidy. In 1991 this subsidy was 1,865 thousand million PLZ (i.e. 116 million ECU),



while the revenues of the Agency obtained as result of previously purchased and stored farm products - amounted to 1,500 thousand million PLZ (94 million ECU); the latter were mainly used in 1992.

The Agency purchased from the 1991 crop some 1,736 thousand tons of grains (which represented 51.8 percent of the total procurement of the grain crop), of which 790 thousand tons was wheat. In addition to this credit guarantees and collateral were offered for the total amount of some 600 thousand million PLZ (i.e. 37 million ECU), these loans being used by the PZZ State Granary to buy some 900 thousand tons of grains. The Agency's share in the grains market in the year 1991/92 is assessed at 65 percent, thus a weighing one.

In 1991 some 37.5 thousand tons of meat were purchased by the Agency, of which 28.9 thousand tons was pork and 8.6 thousand tons beef. This however represented only 1.1 percent of the overall production of meat, which in 1991 totalled 3,350 thousand tons (in unchilled post-slaughter weight, including fats). For these activities the Agency engaged financial resources amounting to 485 thousand million PLZ (30 million ECU). The presence of the Agency on the meat markets was marginal, if one would measure it by the share of intervention procurement in total production.

In all of 1991 the Agency purchased 7.9 thousand tons of butter, this representing 4 percent of the annual output, spending for this purpose about 100 thousand million PLZ (6 million ECU). All of the butter procured was moved to increase state reserves.

### Protectionist Practice on Agricultural Markets

The most important protectionist steps were taken in the import policy. As result of the pressure of agricultural groups in May and August 1991 important changes were introduced, increasing the level of tariffs imposed on imported food products, which is illustrated by the diagram below.

The increased tariffs are meant to counteract the imports of these product groups which are produced in Poland and which, in addition, benefit from subsidies in the exporter countries. It was recognized that this is a form of unfair competition with Polish agriculture. The increases of tariffs were high - and as it appears - on some markets they resulted in a drop of imports. A particular and far reaching decline of imports of meat products was recorded; in the January to August 1991 period on the average some 5,223 tons of meat were imported per month,

while in the September to November 1991 period these imports went down to 1,842 tons per month, to increase to 3,737 tons in December 1991.

In the final effect the import tariffs imposed on farm and food products were increased to a very high level. The intention of such action was to arrest the flooding of the domestic market

Level and changes of import tariffs for food and farm products in 1991, tariffs as percent of the product value

	State as of 1 January 1991	As of 1 May 1991	As of 1 August 1991
Beef with bone	5		
Beef without bone	10	20	30
Pork (carcasses and half-carcasses)	5	20	
Pork elements:			30
- ham and shoulders	10	25	
- other elements	5	20	
Butter	10	30	40
Cottage cheese	20	25	35
Condensed milk	0	30	40
Sugar	10	30	40

With imported food products, the latter being subsidized by the West European exporters. It was also a target to expand the market for sale of domestic products. From such a perspective we cannot state that this target has been achieved. True enough, the import tariffs are high and are of a blocking character but it has not been observed that the demand would as a result be moved to domestically produced products, despite the fact that indeed imports have declined. In fact, the whole exercise was paid for by the consumers, since the higher import tariffs were incorporated into retail prices of food products. From the point of view of agriculture the effects of the tariffs operation discussed, at least for the time being, are not too

visible. One must stress here that at present Polish import tariffs are high and there are in fact no further possibilities to increase them more, this both in view of the EEC regulations as well taking into account the interests of the Polish food sector which should not be artificially isolated from foreign competition. In the future one may rather expect the necessity to lower the import tariffs.

### Exchange rates

During all of 1990 a fixed exchange rate of the Polish currency was maintained, with 1 USD = 9,500 PLZ. This policy was continued until May of 1991.

This exchange rate, as this was correctly believed, was very favorable for importers but at the same time not very favorable for the exporters of food and farm products. With the relatively low import tariffs, such an exchange rate preferred the import of food and created difficult conditions for the Polish exporters. To prove this one may indicate that in the period January - September 1991 the exports of farm products declined by 30 percent, while imports of farm products went up by 156 percent, while imports of products of the food industry increased by 135 percent in comparison with the respective period of the preceding year.

In May 1991 the process of changing of the national currency exchange rate policy was started. On 17 May a "basket" of currencies was introduced and it was in relation to this structure of 5 principal currencies, corresponding to the composition of Polish foreign trade, that the Polish zloty was devalued by 16.8 percent. The value of the basket was established at 11,000 PLZ. On 14 October 1991 a further step was made, thus the decision to change the mechanism of devaluation of the Polish currency. It has been decided that the value of the 5 currencies mix will be increased from its established starting point at a rate of 9 PLZ per day, with the per month devaluation not exceeding 1.8 percent.

It is not however yet possible to respond in a univocal manner whether the modifications of the currency exchange rate have exerted an impact on exports and imports of food and agricultural products, since - in addition to the exchange rates - an important role is played by numerous other factors, in particular the terms of trade being favorable for Poland - tariffs, compensatory payments and taxes.

All in all, in the years 1990 to 1992, despite periodical fluctuations, the volume of food and farm products exports exceeded the imports of food and agricultural raw materials. In this sense Poland in the period of transformation not only

remains a country self-sufficient in food products but, further, the surplus in foreign trade in food and farm products constituted an important factor in the stabilization of the economy.

### Taxation Policy

The taxation policy, same as in the preceding period, was passive and did not play a role of importance in the regulation of farm production. An exception was the dividend (special tax to the State Budget) paid by state enterprises - taxation of fixed assets, which was a fiscal measure. In the State farms it proved to be a very strong instrument, negatively affecting the incomes of this group of farms.

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## VII. CONDITIONALITIES OF HARMONIZATION

### 1. Introductory Remarks

Poland as well as the other Central and East Europe countries (CEE) for three years now are undergoing a complex process of reforms and system transformations, from real socialism and a centrally planned economy to a system of parliamentary democracy and a market based economy. This process of reforms and transformations is taking place in many fields and dimensions. The principal ones are:

- the political sphere, this consisting of reversal of the Communist ideology, discarding the doctrine of monopoly of power of the Communist party, these to be replaced by a system of parliamentary democracy and pluralistic political power of many parties;

- the economic sphere, which comes down to replacing the past central planning system, the isolated from the rest of the world "economy of shortage" with a markets oriented economy, open to international trade;

- the social sphere, this comprising the effort to replace the simplified understanding of the doctrine of equality and social justice, which created in effect "homo sovieticus", that is a member of the society deprived of all production inputs, totally dependent on the state, *inter alia*, expecting the state to cover his needs, his life aspirations; this state is to be replaced by a citizen's society, where each member is individually responsible for his own fortune, his family, the local community and lastly, the country.

The process of reforms and transformations has its own dynamics, a specific course to run. It includes components which support reforms but also brings about social tensions, conflicts of interests of particular public groups etc. 1/.

The three years - 1989 to 1991 - of the process of reforms and transformations of the CEE countries demonstrate clearly both the apparent progress in many areas as well as the numerous conflicts and in some cases reversals of the reforms. All in all, if one was to evaluate the progress of the transformation process in the political, economic and social spheres, then one would be correct to observe that in none of the CEE countries the progress of reforms has so far passed the point of no return, beyond which the changes taking place would become irreversible. This is not a threat of a return to the former system of "real socialism" but rather the possibility, at times

quite probable, of creation of a "nasty hybrid" - something in between socialism and capitalism and stopping the reforms midway.

The discussed transformations taking place presently in the countries of Europe in questions have a point of reference, a pattern they refer to; this being the model of the national economy, the model of the political system as well as the model of organization of public life typical for the countries of Western Europe 2/. This model is the final outcome of the processes of change, it constitutes the foundations of the transformations and incorporates the rules and instruments of social and economic life, characteristic for Western Europe, which are to be implemented in Poland and the other countries of Eastern and Central Europe. In the starting period of the transformations discussed, essays were attempted at finding a, so called, third way, something in between socialism and capitalism but these were given up in favor of full acceptance of the model of Western Europe.

As a consequence of the above, the expectations of the reforming countries of the CEE region, in relation to Western Europe, in particular to the European Communities, are great, at times bordering on Utopia. This may be comprehended if the following assumptions are taken into account:

- the course of reforms and the transformations so far have clearly shown in the CEE countries that without multi-lateral external support, the success of the reforms undertaken will not be possible - at least in the foreseeable time horizon. This may bring about the appearance in this part of Europe of the "nasty hybrid" mentioned earlier:

- in the CEE countries we find a very high level of identification of the public with "being European". An expression of this may be a specific over-reaction of the public in Poland, Hungary or the Baltic countries to the slogans of "returning to Europe" - the counter-argument was as a matter of fact presented, that "we never left Europe, have been a part of it always";

- the evident closeness in terms of culture and civilization of Eastern and Western Europe; the universality of a renaissance of the European system of values. All in all, after a half a century of division of the continent and as a consequence the isolation of the CEE countries, nevertheless this region has remained in the Mediterranean sphere of culture and civilization;

- the period after World War Two has supplied enough evidence of univocal and consequent support by Western Europe of resistance against the Communist system; this support became

in particular evident in the 1989-1990 revolutions in the CEE countries;

- the bringing down and the fall of the socialist system in the CEE countries took place at very little "cost" to Europe and the world. Evidence of this may be the Czecho-Slovak velvet revolution or the "disappearance" of the super power, which the Soviet Union no doubt was. One may view this as wonderful presents which humanity received on the way to progress. At the same time one cannot completely disregard such voices which point out that if the bringing down of socialism had cost thousands, millions perhaps, of victims, great material losses, then certainly the world as well as the societies of the CEE countries would more value the transformations taking place in this part of Europe;

- one must lastly note that, when applying in the process of reforms in the CEE region the models of Western Europe, this is taking place with full awareness of the great economic and social success of the latter part of the continent. The fact that the EEC is the world's biggest trading block (or was prior to the NAFTA trade association of the United States, Canada and Mexico) brings about expectations of specific responsibility of Western Europe as regards the success of the processes of reforms and transformations and to a particular extent the whole future of the CEE countries.

The aforementioned premises, which could easily be expanded and more could be found, lead to the conclusion that the broadly conceived relations between the reforming countries of the CEE region and Western Europe are and for a long time will remain the fundamental determinant both of the European scene and in the global developments.

This relation may also be presented in categories of opportunity. We see now a chance to build a new economic, political and social order for the continent of Europe. This is as well a chance to resolve and eliminate the premises for European conflicts; a chance for new dynamism in making Europe the center and leader in global development and giving it new impetus to become more competitive when facing the other regions of the World. All the phenomena discussed however are only a potential chance, which will bear fruits in the future; the present period of reforms calls first of all and mainly for specific costs and efforts, as well as giving up things taken for granted. Thus we witness a dilemma of importance, the ordeal which the "European spirit" is to face.

In such circumstances the political classes instinctively search for support of the great economic block of the EEC. The association, to be followed by membership in the EEC are thus the key targets of the leading political forces in each of the CEE countries.

The race to associate with the EEC is run individually by the particular countries. Only Poland, Hungary and Czecho-Slovakia were able to establish a joint position in the negotiations of association status with the EEC; nevertheless the documents stating the association agreements were initialled separately by each country.

One should mention at this point that, first the association, further the integration with the European Communities are understood in this part of Europe in a quite "romantic" manner. For decades the downfall of socialism was awaited and the "rejoining" of Western Europe in order to achieve the latter's standard of living, its social and economic model. In practice, it has been found that this process of integration brings with it a challenge which large segments of the public find difficult to face. The European Community is an integration group formed on the basis of priority of pragmatic economic reason and firm political will to remove barriers hampering market exchange of goods, services and capital as well as labor. The application of these principles in the economic practice of the post-socialist countries is taking place slowly and encountering considerable resistance. What is lacking in the process is public consent, over time, to experience acute social costs when restructuring the principal sectors of the economy, i.e., industry, farming as well as whole regions of the country. There is also lack of agreement whether market pressures should yield to state intervention, lastly to what extent beyond this state decisions and regulations will be acceptable. In this part of the continent the traditional concept of sovereignty of particular countries commands a great value.

Despite the aforementioned reservations, the new challenges are gradually gaining social acceptance and the will to face them is to be found. But at the same time, as a veritable "by-product" of this process, in particular segments of the society most pessimistic attitudes, resentment and the characteristic "justified special cases" which would permit to maintain the so far jobs, life styles, habits - but at the same time would permit a better standard of living - are sought after. What is required is time and constructive action, supported by evidence of successes of the new order, which would permit the public to ascertain which part of its expectations is myth and which may become true.

The discussed social attitudes, which at times become of significance, are prime ground for the creation of Utopian concepts, an illustrative example may be the recent idea of the EC-bis model in Central and Eastern Europe 3/.

On the other hand the position of the European Communities on issues of its integration with Eastern and Central Europe may be described as careful. It appears that the overruling



guideline which the EEC follows in this field is that "in order to expand the Community, you must first of all integrate it in its present form".

As justification for such statement, the following premises are presented:

- it is recognized that the Community which would group twenty or more countries could in no way be managed with the present organization and administration structures. This would entail the need to change a whole series of rules and institutions of the Community; an example might be the need to change the voting procedures from unanimous vote to a majority vote; changed rules for Presidency of the Community; increased prerogatives of the European Parliament; a reduction of the number of languages used for formulation of official documents, etc.;

- it is stressed that financial problems could become a serious issue for the Community. At present already the payments required for running the institutions of the Community constitute 1.2 percent of the Gross Domestic Product of the member countries. After the inclusion of the poorer countries, these payments would have to increase considerably, which would no doubt result in resistance of the richer countries;

- it is foreseen that the planned association of the EFTA countries with the European Communities after 1995 will require time for the integration process involved, thus the Community in the near future will be occupied mainly with the "dealing with" the EFTA countries;

- there is rather wide spread opinion that the issues of agriculture in the Community will become a growing problem; the issues of surpluses of farm products, the high costs of the Common Agricultural Policy, lastly "the need to end the unsensical protectionist race in the world's agriculture", in which race EC agriculture is a leader for years, will become more acute. The joining of the EFTA countries, to be followed by the CEE countries would make the resolving of the problems of EC agriculture much more difficult.

As result of the delineated assumptions of the process of integration of both parts of Europe, defined on one side by the reforming CEE countries, on the other by the EEC countries, one may essay to clarify two principal options:

- on the side of the CEE countries the dominating part of the political class represents a position oriented at multi-facet association with the EEC, this association to be implemented in the shortest possible time. This option, clearly supported by the majority, is nevertheless accompanied by

orientations directed at the Community-bis concept or at a rather slower process of association and integration with the EEC;

- on the EEC side one may observe that signals dominate which might be interpreted as reserve both as concerns the scale and the rapidity of the integration with the CEE countries. If integration is mentioned, then its time horizon is distant and vague. What further, recently more and more popular is a option coming down to the concept that the CEE countries in the process of their integration with the EEC should first of all create something of a joint policy in their region, develop their own economic cooperation and only then integrate with the EEC, thus as an economically and institutionally developed (integrated) segment of Europe.

Thus on the one hand, the dynamic forces, on the other the blocking forces, determine the present level of integration between the East and the West of Europe, despite all, speaking with considerable reserve, one may state that the beginnings of East-West integration have been laid out. This process is progressing and appears to become more and more dynamic. One may thus speak of three aspects of the progressing integration process:

- the conceptual framework of the integration process has been formulated 4/;

- the political will to support the process of integration has been on a number of occasions declared by the Governments of both parts of Europe, as well as by such organizations as the EEC, OECD, FAO;

- an important step forward has been made in the direction of practical realization of European integration, this through the initialling of the Association Agreements between the Czech and the Slovak Republic, Hungary and Poland and the European Communities.

For the integration processes to take a dynamic course the political will of both sides is required, hence very important is the assessment of the discussed documents by the Western side. We present below the opinions by two senior experts on the subject; A. Mayhew: Fact Sheet on Agreements, incorporating Elements of Evaluation and A. Winters: Conclusion of Briefing Note for the Association.

Fact Sheet on the Association (European) Agreements  
between the Czech and Slovak Federal Republic, Hungary  
and Poland and the European Community 6/

These Agreements were negotiated during 1991 and were initialled in Brussels in December 1991. The trade part of the agreements enters into force on March 1 1992, though there must be some question about the legality of this in one or other of the Central European countries. The full agreements must await ratification in the 15 national Parliaments concerned, before they can enter into force. These agreements follow the treaties on trade and commercial and economic cooperation which were signed with the three Republics in 1990.

The Preamble of the Association Agreements is important for two main points:

- it introduces a sort of conditionality for the Agreements by re-affirming commitments to pluralistic democracy, based on the rule of law and to the market economy; it says that Hungary's and Poland's objective is to become members of the Community;
- it does not say that the Community recognizes this or any right on the part of the Central European countries to join at a later stage.

The Political Dialogue. The European Agreements introduce for the first time a structured political dialogue between the countries concerned and the European Community.

This dialogue was established within the Association Council, which meets at Ministerial level and the Parliamentary Association Committee for the Parliaments. The significance of this political dialogue will depend essentially on the activeness of the Central Europe countries in putting political dialogue high on the agenda of their relations with the Community.

The Stages of Association. The process of association is divided into two stages, each of five years, the first stage starting when the Agreements enter into force. Passage from the first stage to the second involves further conditionality, based on progress to a market economy. The stage approach does not apply to the free movement of goods.

Free Movement of Goods. A free trade area will be created within 10 years of the entry into force of the Agreements. Tariff reductions will be applied to the tariff rates in force the day before the date of entry of the agreements discussed

into life. Customs duties on most industrial goods originating from the three countries will be abolished over a period varying between two and five years. Quantitative restrictions (QRs) on the products will be abolished on the entry into force of the Agreements. The three countries will abolish customs duties on industrial products over a period ranging from four to ten years. QRs will be abolished in ten years at the latest. These changes do not affect the sensitive sectors of textiles, clothing, iron and steel or agricultural products, where special rules apply. In textiles import duties will be eliminated over a period of between 5 years and half the period agreed in the Uruguay Round for phasing out the MFA, if the latter is longer. Safeguard Clauses are included but there is a guarantee that after 10 years these products will not be given different treatment in comparison to the balance of industrial products. For iron and steel improved VETs have been arranged and all QRs will be removed from March 1992 (for Hungary and Poland). In agricultural products previous concessions will be consolidated and there will be reciprocal concessions for specific products.

In general, no new customs duties or quantitative restrictions can be introduced after the signing of the Agreements. There is an exception under strict limitations for the Central European countries in the case of infant industries and sectors undergoing restructuring.

Anti-dumping protection and a general clause in the case of domestic industry being seriously injured are included. These cases will be discussed in the Association Council; action against the offending imports can however be taken unilaterally before a decision has been reached.

Movement of Workers, Establishment and Services. The three countries and the Community will provide treatment for the other countries' workers legally resident in their territory roughly equivalent to the treatment each gives its own workers (insurance, pensions, family allowances etc.).

The Community will not guarantee any access to workers from the three countries to its labor market beyond that what is guaranteed bilaterally by its member states.

On establishment there are some important differences between the three Agreements, depending on the concerns of the individual countries. However, in general the two parties agree to give the others' enterprises the same treatment as its own companies or nationals. Exceptions to this rule of temporary nature permit Poland for instance to delay giving the right to purchase land automatically to foreign enterprises for a period of ten years. Freedom of establishment can be limited if it

affects restructuring efforts, infant industries or could create social problems in the three countries.

Freedom of establishment is however limited by the restriction on the Community side, placed on free movement of labour, e.g., a Hungarian transport firm may be established in the Community but must employ, with only a few exceptions staff recruited within the Community.

Competition Policy. The Treaty of Rome legislation on competition will be introduced into the three countries within three years of the entry into force of the Agreements. The basis of judgements on competition will be the practice of the Community competition and legal instances, since the Treaty of Rome was signed. Over the first three years GATT rules will apply. For the first five year period the three countries will be regarded as an area identical to those areas described in Article 92.3/a/ of the Treaty of Rome, i.e., backward areas where some relaxation of competition rules is allowed. The Association Council can prolong this period for a further five years. Competition or state aid disputes will be submitted to the Association Council but protective measures can be taken unilaterally within one month of the notification to the Council.

Technical Cooperation. Technical cooperation is agreed for a very long list of subjects. This is only relevant in the sense that if the three countries carefully and systematically demand that all of the promised cooperation is realized, the Community may need far more resources than are available in PHARE to meet the demands.

Financial Cooperation. The Community refused to include a financial protocol as is usual in Association or Cooperation Agreements. All that is promised is temporary financial assistance which will be covered until the end of 1992 by PHARE and access to the EIB. In addition, the Community agrees to consider further assistance, if necessary, for the support of convertibility or for economic restructuring and the balance of payments.

Briefing Note for "The Association Process; Making It Work for Europe" 7/

The year 1991 offered the EC the chance to make a major and imaginative contribution to the emergence of the transitional economies from their years of economic twilight. Having been in the forefront of the supporters of the revolutions in 1989, but

having taken upon itself the leading role in coordinating the E-24 response to those events, being geographically and culturally the closest major economic block to Eastern Europe and being the world's largest trading block, the EC had perhaps the greatest responsibilities in this regard. These have been recognized in detail and the formality of the Europe Agreements, but not unfortunately, in their content.

Throughout the Europe Agreements one finds the stamp of the EC's powerful internal enemies of change. Despite the parlous state of the Czecho-Slovak, Hungarian and Polish (CHP) economies, the EC will maintain agricultural protection, keep quantitative import restrictions on textiles and clothing for six years, leave chemical and iron and steel producers free to harass the suppliers in question through anti-dumping laws, keep tariffs on sensitive labor-intensive products for five years and discourage the CHP suppliers processing inputs from other countries. In the meantime it will impose its competition and intellectual property laws on CHP and encourage explicitly and implicitly (through technical assistance programmes) the CHP to adopt all the rest of the EC's commercial infrastructure. It will ensure its rights to establish firms and provide services in CHP; it will permit highly skilled residents of CHP to move westwards, if only temporarily but will equally effectively ensure that CHP's currently abundant factor - labor can neither be efficiently utilized in producing exports to the EC nor improve its productivity by moving directly to the EC. The restrictions in the EAs threaten the recovery of the CHP economies and ultimately even their reform programmes. They also however penalize EC citizens; new generations of workers will be drawn into low-tech dead-end jobs, exporters will face weaker markets, investors will miss profitable opportunities, and, above all, EC consumers will be denied cheap supplies from CHP. The Eas are indeed a missed opportunity for doing well out of being good but in fairness we must recognize that great, though not unique responsibilities are towards Eastern Europe, they are not unique. In particular the USA has considerable commercial opportunities in that region; both it and Japan should aim to reach cooperation agreements with the transitional economies quickly. One hopes that such agreements will be more liberal than the Europe Agreements, for it would be a double tragedy if the Europe Agreements supported other countries' conservatism and timidity.

#### The Polish food and agro sector in the process of integration

The process of harmonization and later integration of the Polish food and agro sector with the European Communities is played" at two levels:

- in the sphere of political will or, to put it another way, the determination of the political class both on the part of the European Communities and of Poland, to dynamize the integration processes and their "hardening" as well as setting into order;

- in the sphere of efficiency to manage the economic potential for the complementarity and also competitiveness of the Polish food and agro sector in the integration process.

Let us develop the first group of issues, i.e., concerning the political will.

An important benchmark will be the Agreement between Poland and the European Communities, initialled on 15 November and signed on 15 December 1991. This Agreement has been ratified by the Polish Parliament on 4 July 1992.

In the economic part the Agreement presents three targets:

- supporting the development of trade and harmonization of the economic relations between the sides, for the purpose of favoring the dynamic development and welfare in Poland;

- creation of foundations for financial support and technical assistance by the European Communities for Poland;

- creation of proper framework for the gradual integration of Poland with the Communities.

The Agreement is a provisional period regulation, by convention assumed for ten years, divided into two quinquennium periods.

The Agreement in its part on trade is aimed at liberalization of the trade in goods and services, performed asymmetrically - in favor of Poland, thus in effect to create a free trade zone.

As concerns the food and farm products the Agreement foresees the following forms of liberalization of trade:

1. Reduction of quantitative restrictions and increasing limits for imports from Poland into the Communities;

2. Reduction of the level of compensatory payments used by the Communities;

3. Lowering or giving up the collections of tariffs fees.

All in all, the compensatory payments for goods imported from Poland into the EEC will decrease by one third. There will

be a marked increase of the profitability of food and farm products exports. All these reductions will permit Polish farm exports to increase by about 100 to 150 million USD per year. In particular possibilities for exports of pork, poultry, fruits and vegetables will increase.

The Agreement as it concerns agriculture and the food and farm products processing sector and cooperation between Poland and the EEC in this area, has as its purpose improvement of the productivity of these sectors, that is:

- development of private farms as well as market infrastructure;

- modernization of the rural infrastructure (transport, water supply, telecommunication);

- spatial planning in the countryside, this including construction and urban planning;

- improvement of efficiency and technological progress in manufacture of products;

- development and modernization of the processing plants and marketing techniques;

- better harmonization of agricultural policies;

- support for cooperation in industry and in agriculture and exchange of know-how in order to improve the sanitary conditions of production, gradual rapprochement in the field of normalization and quality standards.

For the purpose of implementing the above targets the Community will offer to Poland technical assistance.

It is an obvious matter that an undertaking of such a scale as the association and later the integration of Poland with the EC brings with it chances but also dangers. The presentation clearly speaks in favor of the chances. This is expressed by the report of the Polish Government Plenipotentiary for European integration. Starting with the year 2000 Poland will achieve the following benefits; gradual reduction of tariffs, decrease of compensatory payments, gradual elimination of quantitative restrictions in trade, reduction of barriers in access to EEC markets, unification of technical standards and increased financial assistance by the Communities for Poland. In case of resignation from the association, one may expect a decline of the Gross Domestic product by about 4.6 percent, an increase of unemployment by about 600 thousand persons, a growth of inflation by about 2.5 percent, decreasing revenues from foreign trade by some 500 million USD and an increased budget deficit by about 1.6 percent of the National Product.



One should however very clearly stress that the Association Agreement between Poland and the European Communities represents an opportunity for Poland, for Polish agriculture but only in a potential sphere so far. The translation of these potential possibilities into real benefits may take place as result of adjustment processes in Poland's food and farm sector and improvement of its competition potential.

An expression of very serious approach to the matter of integration of Poland with the European Communities is the Program elaborated by the Polish Government of adjustment actions, corresponding to the requirements of the European Agreement. The principal assumptions of this Program may be characterized as follows 5/:

The decisions in the European Agreement do not constitute any constraint of importance on the shaping of Polish macro-economic policy, in the national interest. Both sides of the Agreement are declaring that they will cooperate for the purpose of securing for Poland permanent economic growth (Article 71). The decisions of the Agreement create an opportunity to accelerate the growth of the Polish Gross National Product. They also create a framework for conduct of economic policy which will lead to accelerated integration of Poland with the European Communities, and in perspective full membership.

The Agreement creates many chances for Poland, this including improved access to the markets of the EEC countries, facilitating the flows of modern technologies, incentives for foreign investors, possibilities to benefit from the financial support of the EC and improved vision of the Polish economy throughout the world. This may constitute a tool for support in the short run of the process of economic reforms as well as a framework for a policy of economic advancement and civilization progress for Poland.

The Agreement foresees a period for the conduct of the key structural changes in the economy. This is not an unlimited period of time. The restructuring policy must thus be conducted quickly, efficiently and in a consequent manner. The Agreement is at the same time the first step to secure for Poland and the Communities the four economic freedoms on which the Communities are based: unrestricted flow of goods, services, people and capital.

In the period of Poland's association it will be obliged to secure freedom of currency flows as concerns capital (I.e. only direct investment - Article 60). This is a necessary condition to encourage foreign capital to invest in Poland. These obligations will be in force however only in the second stage of the association, that is five years from the date of entry of

the Agreement into life.

The Agreement leaves the freedom for Poland to conduct a national agricultural policy, equipping it with the proper tools (Article 25). Thus it is necessary to develop and implement such a policy, a comprehensive and logical entity. This agricultural policy will serve the implementation of precisely determined economic and social targets of farm and rural development as well as the restructuring and modernization of agriculture, with a minimum burden for the other sectors of the national economy. The introduction of such a policy should be consulted with the EC (Article 20).

In the field of macro-economic policies the adjustment of the Polish economy to the requirements of association will be implemented through the continuation of the process of privatization of the economy, intensive support (with participation of external financing) for the small and medium sized enterprises, improving the management of the public sector enterprises and further development and improvement of the market institutions.

The perspective of full membership of Poland in the European Communities (which in accordance with the Preamble the association it is to serve) requires the establishment of priorities in macro-economic policy in the long run. The tasks necessary for this may well go beyond those which directly result from the Agreement.

The rules of evaluation of the development of the Polish economy, proposed by the Polish Government to the European Communities (in the context of applying for full membership) may be brought down to four parts:

- stability of macro-economic policy and control of the rate of inflation;
- macro-economic liberalization;
- liberalization of external relations, including the convertibility of the Polish currency;
- privatization and structural changes in the economy.

The philosophy of such an approach may be brought down to whether the economy of the country applying for membership in the Communities is a healthy one, rather than a rich one.

The macro-economic policy to be conducted by Poland in order to achieve in the year 2000 perspective full membership

should be based on the following six principles:

- need to gradually reduce inflation (through continuation of the policy of money control, a safe budget deficit and a careful policy of public debt);

- need to enter a path of balanced growth (through restructuring of production, development of infrastructure, favorable conditions for domestic and external investors, gradual reduction of interest rates, control of labor costs and division of accumulation, respecting the principles of ecological growth);

- necessity to maintain external equilibrium (through the exchange rate policy, a safe level of foreign currency reserves, reduction of the debt with the Paris and the London Clubs, efficient service of the remaining debt and improved creditworthiness);

- necessity to change the ownership structure (through continuation of the process of privatization with parallel increase of the efficiency of the public sector);

- need to build market institutions (more efficient operations on the stock market, improvement of the financial sector, better legislation on markets, a policy supporting competition and counteracting monopolistic practice);

- need for continuing actions to improve the portrait of Poland as a candidate for member of the Communities (stability of macro-economic policy, a careful policy of gradual appreciation of the Polish currency, an agricultural policy serving the reduction of the gap between Polish agriculture and that of Western Europe, a policy increasing the engagement of foreign investors in Poland, proper use of the high quality human resources available, access to foreign markets).

Tasks for the Minister of Agriculture and Food Economy

The Agreement regulates trade in farms products which will be subject to selective liberalization (some articles are included) as well as limited in scope (trade barriers will be used in a different extent for particular products). As concerns the particular products, other market regulation tools may be used, such as for example minimum prices, or corresponding tools for regulation of foreign trade.

The Agreement at the same time permits Poland to introduce an autonomous agricultural policy in consultation with the Communities. This policy is to permit the restructuring and improved productivity of Polish agriculture.

The tasks of the Ministry of Agriculture, arising from the introduction of the Agreement are as follows:

- promotion of exports of Polish farm products, in particular the processed groups, permitting full utilization of the concessions granted by the EC;
- harmonization of quality standards for farm products;
- an active policy for increasing exports through finding so called export niches;
- improved functioning of the market of farm products;
- monitoring of the impact of liberalization of the imports of farm products on the domestic market;
- elaborating a long term strategy for modernization, restructuring and development of Polish agriculture.

The program of actions by the Ministry for the implementation of the decisions of the Agreement includes:

- regular information and many sided promotion of exports of Polish farm products;
- promotion of ecological farm products (healthy food);
- legislation action aimed at harmonizing Polish quality standards with those of the EC;
- support for development of infrastructure and services sector for agriculture and countryside;
- support for the creation of an institutional system for the farm products market and the creation of the food economy, support for cooperatives, commodity markets, credit system;
- concluding the process of restructuring of state ownership on agriculture;
- current protection of the interests of Polish farm producers against unfair competition;
- developing strategic goals for Polish agriculture in the medium and in the long run;
- selection of tasks, instruments and principles of a national agricultural policy, securing a desired structure and level of the farmer population incomes and improved productivity;
- introduction of a national agricultural policy, the target of which would be achieving a high level of harmonization with the Common Agricultural Policy.

### 3. Productivity of Polish Agriculture

The process of development of agriculture, its transformations have their general tendencies, an "iron clad path" of convergence, uniformization of the production systems. The basic factor tracing this typical path of development, indicating similar directions of development of agriculture is the criterion of productivity. The maximization of productivity (effectiveness) of all production factors, thus the minimalization of their use per unit of production, constitutes the essence of rational management and at the same time a source of dynamism of agriculture. Thus the observation of this rule is the basic social requirement formulated in relation to the farmers, and more broadly towards the food sector.

This concerns as well, or in particular, the case of Poland. The other principal criteria according to which the efficiency of Polish agriculture might be evaluated, such as food security, a satisfactory standard of living of the agricultural producers, profitability of farm production, development dynamism, all these cannot be fulfilled without the marked improvement of the productivity of agriculture. Thus this improvement represents the key to the success of the process of reforms and transformations of Polish agriculture and the positioning in the new, emerging economic system, in particular in the integration with the European Communities.

Thus when analysing the criteria of productivity of Polish agriculture, we relate this productivity to that of the agriculture of the countries in the European Economic Community.

In the historical aspect this means a comparison of the productivity of agriculture operating in the market economy system (this despite the developed protectionism) with the productivity of agriculture operating in a command allocation, artificial economic system 8/, in which all of the parameters of farm management (demand, supply, prices, interest rates charged on credits as well as extensive doctrine based regulations) were arbitrarily determined by the Center, excluding market determinants.

In the aspect of integration of Poland with the EEC the sense of such a type of comparisons consists of showing the distance (the delay) in the levels of productivity, which - as one may believe - will constitute a basic premise also for the integration processes of Polish agriculture with that of the EC.

The results of analyses discussed in this part of the paper originate from the Mid-term Progress Report - Polish Contribution, Part II.

Productivity of the principal production factors in the agriculture of Poland and the EEC

Countries	Overall rate of growth of the sum of agricultural production factors	Rate of growth of agricultural net final production	Rate of progress (improvement of productivity)
----- in percent -----			
FRG	- 0.29	1.44	1.73
France	1.51	2.14	0.63
Italy	1.44	1.56	0.12
Holland	1.78	3.66	1.88
Belgium	0.24	1.42	1.18
Great Britain	0.00	1.44	1.44
Ireland	2.23	2.65	0.42
Denmark	0.32	2.01	1.69
Poland	1.91	1.15	-0.76

Note: The category of "Sum of production factors", as a measure of the production potential of agriculture, includes: farmland, farm employment, livestock numbers, mineral fertilizers, draft power.

The data presented may be interpreted on one hand as an indicator of the scale of delay, lagging behind of Polish agriculture, the dimensions of lost benefits but at the same time this may mean important potential for accelerated growth of production in the future - the latter should be in particular stressed in the context of Poland's integration with the EEC. The introduction into agriculture of modern production techniques and intensive forms of organizations of farm production with the available resources of production factors, may yield in effect considerable acceleration in the sphere of improvement of productivity in farm production.

When relating the increasing distance during the past quarter of a century between the productivity of Polish agriculture and West European agriculture, one cannot avoid the question, whether the increase of this distance would be possible in a situation when the market determinants in development of Polish agriculture would be effective and the economic isolation would not have place.

With a substantial dose of obviousness the answer to such a query is negative. The increasing distance between Polish and West European agriculture was the result of an artificial system, in which the sector functioned and the absence of market based determinants, both in the agricultural sector as such and more broadly in the food producing sector.

In particular the following factors and premises were of importance:

- continuing pressure on agriculture to maximize the growth of farm production, regardless of the costs involved;
- adjustment of the behavior of the agricultural environment to the petrified, low efficiency farming, instead of forcing an improvement of its efficiency;
- the domination in agricultural policy of ideological criteria or the doctrinal type of superiority and preferences for the socialized farming sector, with incomes parity for the private farms sector;
- autarchic concepts of the understanding of the country's self-sufficiency.

All in all, assuming that if Polish agriculture had been operating in the market sphere philosophy and regulations, open to international markets, then we would have at present a more or less balanced level of productivity of agricultural activities in Poland in comparison with the agriculture of Western Europe.

The issue of the level of productivity of Polish agriculture in relation to the agriculture of Western Europe has also its perspective aspect. This will be the basic barrier in the process of integration of Polish agriculture with the European Economic Community. It is specifically this distance which brings about the lack of system coherence of Polish agriculture and West European, which constitutes an important remise (barrier) for the integration process. This is becoming clearly apparent when comparing the relations of the parameters which are the condition for development of agriculture; the resources of the principal production factors, agricultural production, productivity of the sum of production factors in Poland and the EEC countries.

When analysing the shaping of the basic parameters of agriculture in the EEC countries after World War Two, we note the following categories of tendencies.

The tendencies in change of the resources of the basic production factors (I):

- a/ a growth tendency, when the sum of production factors is subject to growth;
- b/ a static tendency, when the sum of factors remains unchanged with modification of its structure;
- c/ a decreasing tendency, when the sum of production factors is subject to decrease.

The tendencies in change of volume of agricultural production (II):

- a/ growth tendency;
- b/ static tendency;
- c/ decrease tendency.

The tendencies of the rate of improvement of the productivity of the total sum of inputs of the principal production factors (III):

- a/ a regressive rate, meaning on the average a growth of inputs per unit of production;
- b/ a rate of moderate improvement, meaning decreasing inputs per unit of production;
- c/ a rate of marked improvement of productivity, based on non-tangible "free" progress, based on knowledge and scientific and technical information, improved technologies and organization of production.

For specifically defined time periods the relations of these tendencies for the agriculture of Poland and the EEC-9 countries were as follows:

until the end of the 1960's:

- EEC-9: Ia ---> IIa ---> IIIa - resources are increasing, production is increasing; regressive productivity;
- Poland: Ia ---> IIa ---> IIIa - resources are increasing, production is increasing; regressive productivity;

the 1970's and 1980's period

- EEC-9: Ib ---> IIa ---> IIIb - stagnation of resources, production increases, moderate rate of productivity increase;
- Poland: Ia ---> IIa ---> IIIb - resources are increasing, production increases, regressive productivity;



the 1990's and the assumptions of the plan of CAP reforms

- EEC-12: Ic ---> IIb/IIc - /McSharry Plan/ ---> IIIc - resources are decreasing, production is stagnating, a marked rate of the improvement of productivity;
- Poland: /1990-1991/: Ic ---> IIb ---> IIIb - resources are decreasing, production stagnates, a moderate rate of productivity growth.

In the context of the positive impact of agriculture on the growth of the national economy and the integration of Polish agriculture with the EEC, the desired relations should be shaped as follows in the coming years:

Ib ---> IIa ---> IIIc - production resources should manifest a declining tendency; agricultural production should increase; the rate of growth of productivity should be clearly marked, constituting the principal moving force of the development of Polish agriculture and its rationalization.

Such a scenario in the specific conditions of Polish conditions and its international environment includes considerable realism but its indispensable condition is the basing of the development of agriculture, of the food sector on market determinants and in a broad extent the setting into motion of the processes of integration of Polish agriculture with the EEC.

4. The Consequences of Adjustment of Polish Farms to Principal Parameters of European Communities Agriculture and International Markets  
Micro - Economic Approach - Simulation calculations x/

The simulation of model calculations was performed on the basis of empirical research 9/. In the research private, state and cooperative farms were considered, achieving very good and good production and economic results. When including in the research project farms better than average, it was basis the assumption that they better correspond to the conditions of integration of Polish agriculture with that of the EEC and with global agriculture.

The inclusion of state farms in the research was aimed additionally at obtaining information on the possibilities of

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x/ Research within the ACE Research Project was conducted by: Walenty Poczta and Heinrich Schule.

their restructuring within the process of privatization. In view of the fact that the construction of a model is simpler and better corresponds to reality when it concerns a specific object, from among the farms analysed, one private and one state farm were selected, which achieved production and economic results representative for the average figure typical for the sample researched and had at their disposal production factors as well average for the sample.

It appears that despite the important differences which characterized the researched farms in relation to the situation of the average farms in the agricultural sector, the obtained results of analyses permit to formulate some general propositions as to the scope of the necessary adjustments in Polish agriculture.

#### Assumptions of the Model

The foundation for the analysis of the current situation and for the elaboration of the model simulations were the data from a single plant, constituting a part of one of the state farm combines in the Poznań region and from one private farm in the Leszno region.

The state farm used in the construction of the model had an agricultural area of 787 hectares, it employed 74.2 persons when converted to fully employed (this figure including an estimate of the staff employed at the combine administration level). Of the total employment figure some 39 persons were employed in crop production, in cow barns five persons, in fattening of swine 8.3 persons full time. This calculation takes into account also the persons indirectly working for the particular production sections and a proportional share of the technical and engineer workers and of the administration staff. The balance of the employed were working in other sections, not included in the analysis.

In crop production, with soils of medium quality very high yields of grains and rapeseed were achieved and a good yield of sugar beets. In livestock production the principal role was that of swine fattening (3,500 pens with 2.2 heads per year).

Of lesser importance was milk production - the average number of cows was about 80 head, with the milk yield of about 5000 kilograms.

The private farm had an area of 19 hectares of as a rule good quality, employing 2.2 persons full time.

Like as the state farm it achieved very high yields in crop production. Livestock production was composed of milk production

with 14 cows with annual milk yield of 5,730 kilograms per year and swine fattening, with 130 pens breeding 1.8 head per year.

As the basis for the model considerations the current situation, that is 1991 data were assumed. Thus the current production and organizational structure was assumed; this concerned both the resources of production factors, their use, production results and prices. In the analysis of a model character two levels of prices were taken into account - international markets and EEC prices 10/. In the case of EEC prices the actual prices used were some 10 to 20 percent lower than those recorded in the FRG. The costs of labor were considered in the variant corresponding to their level in the southern countries of the Community. In the labor costs in addition to the basic wage also the social security system payments were considered and payments in kind, while in the state farm also the social services offered to workers, while no alternative income was considered in the private farm as effect of living in the farmer's own house. The basic information on the development of prices of the analysed products and the major inputs and the value of fixed assets are presented in Table 1. In the variant of international prices the value of farm machines and equipment were valued according to German prices, decreased by 20 percent, while the value of the buildings was taken in Polish prices; in the EEC prices variant both the value of machines and of buildings was assessed on the base of FRG prices. In all scenarios analysed we have assumed linear amortization amounting to 10 percent for machines and equipment and 2.5 to 10 percent for buildings, depending on the type of buildings.

The interest rate charged on circulating (working) capital and fixed capital was assumed at a level real for a stabilized economy of 8 percent. At this point a 50 percent recapitalization of the fixed assets was assumed.

The next stage in the construction of the model was the assumption of various adjustment scenarios. However in each variant it was also assumed that no adjustment at all may take place in one extreme case.

In crop production in the state farm two basic adjustment scenarios were distinguished:

- Scenario I /"adjustment of labor and capital resources"/.

This scenario foresees maintaining the so far structure of the farm and composition of production. The equipment with machines and equipment and the number of staff employed would however be subject to adjustment, to levels necessary for the production requirements of the farm.

These needs were defined starting with the actual equipment and standard requirement for work and the standard performance of machines, as determined by specialist German institutions (KTBL/ 11/. These figures have shown that it is possible without any impact on the size and structure of production to reduce the number of machines by about 30 percent and the labor to land ratio down to 20.5 persons fully employed per 100 hectares.

- Scenario II /"change of farm organization"/  
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In this scenario a change of the so far organization of the farm is foreseen. It was assumed that far reaching specialization would be introduced and a simplified composition of the plantings (reduced to grains, rapeseed and sugar beet), which would result in a marked decrease of the fixed costs of production. The input of labor was determined on the basis of the standard demand for labor with modern technologies in crop production (KTBL, 1991). Nevertheless in this scenario of adjustment, same as in the preceding one, in the calculation of labor inputs, also the share of management and administrative work taken into account. The machine park was reduced to the needs of commercial crop production.

In this scenario a sub-scenario was also considered for the variant of international markets prices. This consisted of decreasing the intensiveness of cultivation of wheat and of rapeseed. On the basis of results of research by J. Zeddies and by C. Fuchs and B. Schunzenbacher (12/ it was foreseen than in comparison to the present situation fertilizer use under wheat could be reduced by about 66 percent, under rapeseed by 50 percent, with the use of crop protection chemicals being reduced as well, the effect of which would be a reduction of the yields of wheat by about 20 dt per hectare and of rapeseed by 5 dt per hectare.

In livestock production in the state farm only one adjustment scenario was assumed (adjustment of labor resources). On the basis of German standards (KTBL, 1991) it was foreseen that the sources of labor would be reduced to 3 fully employed persons in the cow barns and 4.8 persons in the fattening of the swine.

In the private farm for crop production and in milk production one adjustment scenario was assumed ("adjustment of armland resources"). Under this scenario it was assumed that the area of the private farm would double to 38 hectares, which would permit to decrease the burden of capital on the production about 40 percent. In swine breeding the analysis was limited only to various price variants.

## Method and Results of Model Calculations for Selected Products

In order to improve the analysis of the calculations, all costs of production, following the practice used in this type of calculations so far, were divided into three groups. Considering the particular production costs in the calculations of the successive groups of permitted to define three incomes categories, allowing to assess the level of profitability of production.

The first group of production costs were the proportional special costs. These included mainly the variable costs. For example in crop production these included, i.a., costs of the seed material, of mineral fertilizer, crop protection chemicals, variable costs of machines use and interest on working capital. The variable costs related to use of machines were composed of repairs and of fuels and of oils and lubricants. The costs of repairs were calculated on the basis of standards, as defined for Polish conditions 13/ and the prices of machines of 1991. In the case of livestock production (mainly swine fattening) the principal item of the proportional special costs was the cost of feeds. In this same group of costs the roughage feeds for milk production were included. The income category constituting the difference between the value of production and the proportional special costs is the gross profit (direct income). The achieved gross profit should be big enough in order to permit to cover the successive groups of costs 14/.

The second group of costs were the costs of labor, the costs of amortization and the balance general costs, together with taxes. The income category remaining after subtracting these costs from the gross profit may be defined as the financial result achieved from the particular activity. A negative value of this result indicates that either the labor had not receive the full due remuneration or the amortization of the fixed assets could not be written off, which meant negative reproduction of the fixed assets.

The third group of costs was the interest on fixed capital and land. Only all three groups of costs may be considered only as the full costs of production, which show the use of all production factors. This means that only in case when the value of production covers the costs of production, calculated in the described manner, then one may speak of complete remuneration of all production factors. The potential surplus (net income) only creates the basis for expanded reproduction of the capital. The problems of agriculture in achieving full interest on all engaged production factors, in particular farmland are well known and recognized. One may thus assume that in practice possibilities of development appear only in case of a positive financial result (value of production minus the first two groups

of costs). And this is in most cases the situation in agriculture.

This does not change the fact that from the point of view of classic economy we face here a faulty allocation of capital - part of the capital does not bear interest. Another problem, of a typically practical nature, is as a rule frequently lack of possibility to sell the assets in possession and the transfer of capital to economic activities with a higher rate of profit. In another way one may state that agriculture is often forced to operate in conditions of not full revenue accruing to all production factors. Thus in our considerations we may assume that a situation satisfactory from the economic point of view will have place in case when a positive financial result is achieved in the particular activity, while not performing evaluation of its dimensions from the point of view of securing the development potential of the farm. The situation will be good and desirable when the net income will be earned.

The results of model calculations on the basis of assumptions made and the methods used are presented in Tables 2 to 5.

#### Economic competitiveness of winter wheat production

The calculations performed show that both the state farm and the private farm have achieved a positive gross profit, amounting in the first case to 100 ECU per hectare, in the second to 80 ECU per hectare (see Tables 2 and 3). The achieved gross profit permitted to cover on the state farm the costs of labor, taxes, general costs and only about 20 percent of the cost of factual amortization ( $(100 - 58 - 31) / 52 \times 100$ ). A similar share of amortization could be covered in the analysed private farm. However the unpaid figure for amortization, as which the negative financial result may be considered, was in the private farm much greater than in the state farm (respectively - 15 ECU/hectare, compared to - 41 ECU/per hectare). Such a considerable negative financial result in the state farm may also be the result of considerable burden on crop production of amortization costs, which was in turn the result of the out of proportion big number of machines in relation to the needs and size of production (the same problem appeared in the case of interest due on fixed capital 15/).

Good equipment with agricultural machines cannot however be viewed as an element making difficult the functioning of the farm. In the context of the future integration with the EEC countries agriculture in the short and the medium run this will be an element facilitating adjustment. The results of calculations show however that with the present price relations it will not be possible to replace the stocks of machine capital.

In conditions of international markets prices without any adjustment, both on the state farm and the private farm, despite the considerable increase of the gross profit, the negative financial result underwent further deterioration, first of all as result of the costs of amortization (as effect of the new - much higher than before valuation of machines and equipment). The introduction of the I stage of adjustment in the state farm, that is reduction of the resources of labor and capital would permit to achieve a positive financial result in wheat production, amounting to about 52 ECU per hectare. The second, drastic stage of adjustment, consisting of changes in the organization of the state farm and the extensification of production would in turn lead to almost doubling of the financial result to 100 ECU/ha, and would additionally create the possibility to achieve, in conditions of international markets prices, a net profit amounting to 21 ECU/ha. In such a situation all of the engaged production factors would be remunerated.

The performed adjustment in the private farm (adjustment of the resource of farmland) would lead to a marked reduction of the negative financial result, thus from - 266 to - 74 ECU. In effect the adjustment processes would not wholly resolve the problem but would create an opportunity for the successive adjustment stages (further increase of the resource of farmland) or a re-organization of the farm permitting its operations with fewer machines, use of the machine services available locally, joining an agricultural circle, etc.

In conditions of EEC prices in the state farm in turn we could find a positive financial result in wheat production even with no adjustment processes but the introduction of the latter would clearly improve the financial result. Lack of adjustment would however exclude the possibility to obtain a net profit, which would nevertheless be achievable after the successive stages of adjustment. In the private farm it would be possible to achieve a positive financial result in conditions of EEC prices only after the performing of the assumed adjustment. It could not however be possible to achieve a net income. This means that even when taking in the calculations the very high procurement prices of the EEC, it would not be possible to fully remunerate all resources of production factors accumulated in the farm analysed. It appears that this thesis could be generalized for a major part of the farms in Poland.

#### Economic competitiveness of rapeseed and sugar beet production

In the case of evaluation of the profitability of cultivation of rapeseed and sugar beet in the models analysed, similar tendencies appear, while in general maintained are the differences between the state farm and the private farm, as

described in the part concerning wheat production (Tables 4 to 7). Both in Polish conditions, as well as international markets prices the production of rapeseed in the state and in the private farm yields a lower gross profit than the production of wheat. Only when basing the analysis on the high prices of rapeseed in the EEC, it becomes a competitive crop in relation to wheat. Achieving a positive financial result in the state farm in conditions of international markets prices would be possible only after conducting the radical variant of adjustments, this would not however permit to manage a net income.

In the private farm, identically as with the cultivation of wheat, for the same reasons it would not be possible to achieve a positive financial result, when assuming international markets prices as well, what is obvious, net income.

In contrast to this situation the high procurement prices of rapeseed in the EEC 16/ result in the state farm achieving a positive financial result and net income, in the model analysed, even without introduction of any adjustments. Of course after the adjustment the surplus to be achieved would be multiplied.

In the private farm to obtain a positive financial result would be possible only after the implementation of the proposed adjustment scenario, at the same time it would in principle be possible to fully compensate the use of farmland and fixed capital (the loss calculated in the model would be only - 1 ZCU).

Similar tendencies in profitability of sugar beet cultivation in relation to rapeseed (under the assumed calculation scenarios) are the result of similar proportions between Polish, international markets and EEC procurement prices for these products. An important difference is found only in the heavy cost of labor with the sugar beets (mainly in the state farm). This causes in the conditions of international prices, despite the relatively high gross profit, losses in the cultivation of sugar beet in the state farm, when adjustment is not performed, higher than those in wheat production. The reduction of the number of workers employed and replacing them by seasonal hired labor (as considered in the model) leads to a decisive improvement of the economic of sugar beet production but this is possible only after a basic re-organization of the state farm and total elimination of labor, which opens the possibility to achieve a net income.

In the private farm the limited labor costs in cultivation of sugar beet result, in contrast to rapeseed cultivation, in potential positive financial result in conditions of international prices, after adjustment of farmland resources. However the high burden of capital would exclude the achievement of net income.



after using in the calculations the very high procurement prices of sugar beet in the EEC (obviously possible to obtain only for a part of the production) 17/ in each of the scenarios in the model net income is possible to achieve, which would mean full compensation of all production factors. Of course the implementation of adjustment in each case would affect the size of the economic surplus.

The performed analysis of the profitability of crop production indicates the incorrect proportions between the resources of fixed capital and farmland resources, while indirectly - what more important - the low productivity of capital. This problem in a longer time horizon will be acutely felt in the farms presently considered in Poland as too big and which in the future at the very most may be recognized as medium sized. Taking into account the present area structure of Polish farming it is difficult to expect a radical growth of the average area of a farm and one should rather expect short possibilities of full, even simple reproduction of fixed assets.

This means in effect that a large part of the machine work in crop production will have to be performed using machines and equipment from outside the farm. Such a foreseen development of the economic situation in Polish agriculture, despite the fact that it will be painful for many farms, has the traits of rationality and will create conditions for lowering the costs of production.

#### ----- Economic competitiveness of milk and pork production -----

In the analysed directions of livestock production one finds only a limited possibility to build theoretical adjustment simulations. In the state farm the possibility of adjustment scenario was exhausted by the proposed reduction of employment. This was relatively small, since in the farm which was the basis for the construction of the model the work organization was already good. The adjustment scenario in the private farm was limited to indirect impact of the "adjustment of farmland resources" on milk production, this through decreasing own costs in production of roughage fodder. Thus greater impact than in the case of crop production was exerted on the model calculations by the assumed prices variant.

The production of milk when assuming the prices variant of 1991 was characterized by higher profitability in the private farm. This was caused mainly by the some 15 percent higher productivity of the cows and lower labor costs, with a slightly higher level of the other costs. The value of milk production in the private farm covered the proportional special costs, the costs of roughage feeds, costs of labor and amortization of fixed assets, with a small profit remaining, which however did

not cover the interest on fixed capital. In the state farm in this line of production, a negative financial result was recorded.

In conditions of international markets prices, with no adjustment taking place, in both types of farms the profitability of milk production would undergo serious deterioration. The conduct of adjustment actions would however rather seriously affect the improvement of profitability of milk production - in the private farm a net income should be achieved including the interest of fixed capital, while the losses in the state farm would be minimal. The high prices of milk in the EEC would guarantee achieving net income even without the implementation of the adjustment program 18/. However the introduction of the adjustment program would lead to substantial increase of incomes, in particular in the state farm.

The simulated results of calculations concerning swine breeding differ basically from those obtained in the models for the other products. Namely, in the state farms the highest incomes were obtained with price relations recorded in Poland in 1991; in the private farm as effect of a somewhat different structure of the costs, the income was slightly modified in conditions of international markets prices and EEC prices. The high profitability of swine fattening in Poland is a direct derivative of the relation between the price of slaughter animals and the price of feeds (first of all grains), which constitute the principal element of the production costs. This relation is in Poland much more favorable in comparison with the international markets and the EEC market (see Table 1). Nevertheless, the implementation of adjustment in the state farm could result in the conditions of international prices in a drop of the costs of production per head of about 1.5 ECU, and in conditions of EEC prices by 3.5 ECU respectively. These are the reserves which could be achieved as result of the rationalization of employment.

The performed calculation of the profitability of swine fattening has confirmed the opinion about the high profitability of this line of farm production in Poland. However as the integration of Polish agriculture with international markets and agriculture and with EEC agriculture increases, one may expect a deterioration of these relations. A negative impact of these relations for the profitability of swine breeding in Poland will be much more marked than it is apparent in the presented models, since the swine breeding in farms which were the basis for the simulation was performed better than the average.

## Conclusions

The performed calculations indicate that excluding fattening of pigs, with the price relations of 1991 and with the existing proportions between production factors, there was no possibility to achieve an income, which would fully compensate the engagement of all production factors (including interest on farmland and fixed capital). If one omits from the costs components the interest due on farmland and fixed assets (which would permit the determination of the financial result for the analysed production lines) proves that aside from the aforementioned fattening of swine, a small income could be achieved only in milk production in the private farm. This means that economic activities in the case of the other products were actually leading to decapitalization of the fixed assets (since amortization was not fully realized). The assumption of international markets prices, without introduction of adjustment processes, would lead, again with the exception of fattening of swine in the private farm, to a clear deterioration of the achieved economic results - the losses were greater both when taking into account and when not taking into account in the calculations the interest due on farmland and fixed assets. However, if the adjustment processes assumed in the model would be introduced, in conditions of prices of international markets, this would lead to a clear improvement of the financial results - the losses would be subject to considerable decrease or even and economic surplus could be managed.

Decisive improvement may be expected in the variant using EEC prices for the model calculations. However also in this case the realization of the adjustment actions foreseen in the model would lead to a marked improvement. The economic opening of the Polish economy results in the scenario described in the presented model calculations as "management in conditions of international markets prices" becoming more and more relevant. In contrast the scenario using EEC prices from the present point of view is for Polish agriculture of little relevance.

One may also expect that it will not be of significance for the Polish agricultural producers in the future, after Poland's access to the EEC, since the agricultural policy of the Community clearly is orienting itself at moving the principal farm products prices to the level of international markets. Thus the adjustment of Polish agriculture should orient itself first of all at international prices.

The performed analysis indicates that the price relations of international markets are frequently less favorable than those to be found in Poland in 1991. One may thus conclude that without important changes in the proportions between the factors of production, the adjustment processes in Polish agriculture will be taking place at a very limited pace and extent, which will result in decreasing competitiveness of Polish

products on international markets. What further, the performed analysis indicates that rational privatization and restructuring of the state farms sector may represent an opportunity to create a large group of farms which will be able to well face the international competition.

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9. The research was conducted by the Authors on the basis of methods developed in the Department of Organization of Farms in the Hohenheim University in FRG, with the participation of the Department of Economics and Organization of the Agricultural University in Poznań on the sample of bigger private farms, state farms and RSP cooperatives in 1991 in the Poznań, Leszno and Kalisz regions. The results were in part published: Schule H.: Struktur Wirtschaftlichkeit und Entwicklungsmöglichkeiten der Landwirtschaft in Polen, Stuttgart-Hohenheim, 1992.

10. One may expect that in the context of the possible integration of Poland with the European Communities of greater cognition value will be the variant of international prices. Since 1992/93 the EEC has started a gradual process of reform of the farm prices policy, which as effect should lead to a lowering of the level of procurement prices for farm products on the Community markets to a level closer to that of the international markets (e.g. the prices of grains will decrease by 35 percent).

Compensation is foreseen for the losses the farmers will suffer.

See: Poczta W.: Interwencjonizm rolny przyszłości (Agricultural interventionism of the Future), Zycie Gospodarcze no. 17, 1992.

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3. The methods developed by H.A. Jerzak were used, as in: zastosowanie rachunku kosztów normatywnych w ekonomice rolnictwa doradztwie rolniczym, praca doktorska, (Standard costs calculations in farm economics and advising; Ph.D. dissertation); Biblioteka Główna AT w Poznaniu, 1988.

4. Negative gross income means extremely low profitability of production and in principal excludes its conduct in any conditions. In the twenty or so farms researched such negative income was found in some cases in rye production. We have

however ignored this since rye was a crop of marginal importance and could not affect the overall economic performance.

5. The problem of excessive mechanization appeared in all of the private farms researched. On the basis of available statistical data one may assume it concerns the majority of bigger and better farms in Poland.

6. 1991 was the last year in which the EEC farmers have obtained such high prices for their rapeseed. The EEC had given agreement during the work of the special GATT Oilseeds Panel to re-orient the oilcrops market and have their prices approach the level of international markets, in exchange for direct compensation for the producers.

Mitteilungen der Kommissionen an der Rat und an das Europäische Parlament - Die künftige Entwicklung der gemeinsamen Agrarpolitik, Brüssel, 1991. See also Poczta W.: Interwencjonizm ..., op. cit..

7. Production of sugar in the EEC is subject to quotas (A, B and C). In this model we have used prices for sugar beet under quota A, i.e., the highest.

8 In the EEC quotas for milk production are in force which limit its volume. Possible reduction of production volume would result in growing fixed costs, in effect reduced profitability. Further within the framework of the EEC market policy it is proposed to decrease the institutional prices for butter and powdered milk, which will also cause a decline of milk prices.

Tab.1. Prices of some selected important farm products and means of production as well as the value of capital resources (in the discussed objects)<sup>1)</sup>

Item	Units	Present situation (1991)	Level of world prices	Level of EEC prices
Wheat	ECU/dt	5,65	10,10	15,00
Sugar beets	ECU/dt	1,18	2,00	4,83
Rape	ECU/dt	10,20	17,50	32,50
Milk	ECU/dt	0,09	0,15	0,30
Pork meat	ECU/dt	0,79	1,05	1,40
Mineral fertilizers (pure component)				
N	ECU/kg	0,40	0,45	0,53
P <sub>2</sub> O <sub>5</sub>	ECU/kg	0,35	0,50	0,58
K <sub>2</sub> O	ECU/kg	0,20	0,24	0,28
Monthly wages in a state farm (including insurance)				
- plant production	ECU	132	289	538
- animal production	ECU	152	331	638
Consumption income (labour payment) in a private farm	ECU/h	0,63	1,57	3,14
Interest on land	ECU/ha	27,5	37,5	51,00
Fixed assets:				
State farm:				
- plant production	ECU/ha	616,0	1526,5	2017,5
- milk production	ECU/place	749,0	910,0	2164,5
- swine production	ECU/place	94,0	104,5	272,0
Private farms:				
- plant production	ECU/ha	3082,5	4977,5	6092,5
- milk production	ECU/place	1009,5	1100,0	2937,5
- swine production	ECU/place	117,5	135,0	341,0

<sup>1)</sup> Because the objective of the paper is to determine adaptation possibilities of Polish agriculture to EEC conditions, all calculations, all the calculations are in ECU. When calculating from German sources, the rate of exchange was 1 ECU = 2.05 DM. At the time 1 ECU = 1.29 USD.

Source: Toepfer International, 1991;  
Agrarwirtschaft 12/1991;  
Own calculations

Item	Units	Present situation (1991)	World prices			EEC prices		
			No adaptation	Adaptation of labour resources and capital	Changes in farm organization	No adaptation	Adaptation of labour resources and capital	Changes in farm organization
Yield	dt/ha	65	65			65		
Price	ECU/dt	5,65	10,0			15		
Value of production	ECU/dt	367	650			975		
Seed material	ECU/ha	20	33			45		
Fertilization	ECU/ha	113	139			163		
Plant protection	ECU/ha	38	100			101		
Variable costs	ECU/ha	59	83			82		
Interest of working capital and other variable costs	ECU/ha	37	42			42		
Proportional special costs - total	ECU/ha	267	397			433		
Gross profit	ECU/ha	100	253			542		
Labour costs	ECU/ha	58	126	66	18	234	123	48
Depreciation	ECU/ha	52	143	103	95	162	122	113
Remaining overhead expenses + tax	ECU/ha	31	32	32	32	32	32	32
Financial results	ECU/ha	-41	-48	52	100	114	265	349
Land interest	ECU/ha	27	37	37	37	51	51	51
Interest on the fixed capital	ECU/ha	25	61	45	42	80	65	61
Overhead expenses	ECU/ha	460	796	680	429	992	826	738
	ECU/dt	7,08	12,25	10,46	9,53	15,26	12,71	11,35
Net profit/loss	ECU/ha	-93	-146	-30	21	-17	149	237
	ECU/dt	-1,43	-2,52	-0,46	0,47	0,26	2,29	3,65

Source: Own calculations



Tab. 3. Profitability of winter wheat production - private farms (model)

Item	Units	Present situation (1991)	World prices		EEC prices	
			No adaptation	Adaptation of land resources	No adaptation	Adaptation of land resources
Yield	d/ha	65	65		65	
Price	ECU/dt	5,65	10,0		15,0	
Value of production	ECU/dt	367	650,0		975	
Seed material	ECU/ha	24	39		59	
Fertilization	ECU/ha	120	148		173	
Plant protection	ECU/ha	31	86		86	
Variable costs	ECU/ha	60	84		84	
Interest of working capital and other variable costs	ECU/ha	52	56		82	
Proportional special costs - total	ECU/ha	287	413		484	
Gross profit	ECU/ha	80	237		491	
Labour costs	ECU/ha	12	30	24	60	47
Depreciation	ECU/ha	273	463	277	503	302
Remaining overhead expenses + tax	ECU/ha	10	10	10	10	10
Financial results	ECU/ha	-215	-266	-74	-82	132
Land interest	ECU/ha	27	37	37	51	51
Interest on the fixed capital	ECU/ha	123	199	120	243	146
Overhead expenses	ECU/ha	732	1152	881	1351	1040
	ECU/dt	11,26	17,26	13,55	20,78	16,00
Net profit/loss	ECU/ha	-365	-365	-231	-376	-65
	ECU/dt	-5,62	-5,62	-3,55	-5,78	1,00

Source: Own calculations

Tab. 4. Profitability of rape and sugar beet production (ECU/ha)

Item	Present situation (1991)	World prices			EEC prices		
		No adaptation	Adaptation of labour resources and capital (land) <sup>1/</sup>	Changes in farm organization	No adaptation	Adaptation of labour resources and capital (land) <sup>1/</sup>	Changes in farm organization
<b>I. Rape</b>							
1. State farms							
-gross profit	72	172	172	190	581	581	581
-financial results	-64	-119	-25	48	170	313	394
-net profits	-116	-217	-107	-31	39	197	282
2. Private farms							
-gross profit	55	148	148	x	551	551	x
-financial results	-238	-439	-161	x	-12	196	x
-net profits	-388	-585	-318		-306	-1	x
<b>II. Sugar beets</b>							
1. State farms							
-gross profit	166	346	346	346	1533	1533	1533
-financial results	-43	-105	66	180	826	1109	1310
-net profits	-95	-203	-16	101	695	993	1198
2. Private farms							
-gross profit	170	362	362	x	1514	1514	x
-financial results	-162	-232	5	x	759	1061	x
-net profits	-312	-486	-152	x	465	864	x

<sup>1/</sup>Adaptation of labour resources and capital in state farms and land resources in private farms

Source: Own calculations

Tab. 5. Profitability of milk and pork production

Item	Units	Present situation (1991)	World prices		EEC prices	
			No adaptation	Adaptation of labour resources (land) <sup>1/</sup>	No adaptation	Adaptation of labour resources (land) <sup>1/</sup>
I. Milk production						
1. State farms						
-gross profit	ECU/cow/year	129	213	241	752	795
-financial results	"	-40	-108	20	139	374
-net profits	"	-70	-145	-17	52	287
2. Private farms						
-gross profit	"	138	253	329	936	1049
-financial results	"	3	0	76	437	523
-net profits	"	-37	-44	32	319	405
II. Pork production						
1. State farms						
-gross profit	ECU/fattener	25	19	19	33	33
-financial results	"	19	10,5	12	17	20,5
-net profits	"	17,5	8,5	10	12	15,5
2. Private farms						
-gross profit	"	28	32	x	48	x
-financial results	"	22	23,5	x	30	x
-net profits	"	19,5	20,5	x	22,5	x

1/Adaptation of labour resources in state farms and land resources in private farms

Source: Own calculations