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## INCOME DIFFERENTIATION OF POLISH FARMERS

### Abstract

During the transition period Poland achieved rather a quick rate of economic growth, exceeding 4.9 per cent p.a. The inflation rate decreased significantly, dropping below the level of many EU countries. However, there were not only successes. Poland has reported a very high, growing unemployment rate, exceeding 18 per cent of the active labour force. The growth of unemployment, both in rural and urban areas is the main issue to be solved. Another important "hot" issue is income distribution. The period of economic transition in post-communist countries, including Poland brought about a considerable increase in income differentiation in society. This differentiation applied to a greater extent to agriculture and the rural population than to the non-agricultural and urban population. In 1984 the Gini coefficient for all households was 0.240, in 1998 it was 0.312 and for farmers: 0.362 and 0.449 respectively.

Keywords: parity, income, distribution, farmers.

### BACKGROUND

The current economic situation of Polish farmers is a derivative of the changes which took place after 1989, i.e. during the transformation period. The land usage structure underwent fundamental change although the landownership structure did not. Before the transformation, private farmers utilised approximately 75% of the land,<sup>1</sup> the remainder belonging to the public sector which was dominantly state-owned. Over 22% of the land was utilised by state farms and 3% by agricultural cooperatives. The agricultural property structure is of fundamental importance as regards shaping the population's income. Those who worked on state farms and most of those working for agricultural cooperatives were in fact hired workers.

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<sup>1</sup> The total agricultural land area covered 18.4 million ha, *Agriculture and Food Economy in Poland*, MAFE, Warszawa 1996, p. 7.

Their wages were guaranteed regardless of the farm's financial results. Private farmers were totally dependent on income they had themselves earned.

The withdrawal of land sale restrictions in 1990, the liquidation of 1660 state farms and substantial reduction of agricultural cooperatives favourably affected the size structure of individual farms and increased their importance in agricultural production. In 1996 they utilised about 82% of agricultural land. According to the 2002 agricultural census only 1,181,100 ha (7%) was utilised by the public sector and the majority of land (93%) was utilised by the private sector. Individual farms consisted of about 88.5% of the private agricultural sector.<sup>2</sup>

The period of economic transformation in post-communist countries, including Poland, brought about a considerable increase of income diversification in society. It is interesting that this diversification applied to a greater extent to agriculture and the rural population than to the non-agricultural and urban population (Klank, 2000). It brought about such phenomena as poverty and unemployment, which were not reported in official statistics in the pre-transformation period. Branko Milanovic from the World Bank in the preface to his book entitled: *Income, Inequality and Poverty during the Transition from Planned to Market Economy* writes: *This is indeed a period of turmoil, comparable with the period that followed both World Wars. It is the period of dramatic declines in income (in the first years of transformation – L. K.), reappearance of diseases long forgotten, growing poverty and unemployment, and great uncertainty. But it is also a period when great fortunes are being made...* (Milanovic, 1998, xi). He raised very important questions, such as:

- What was the influence of economic growth on socio-economic groups?
- Who benefited from the growth and who lost?

Why are answers to these questions so important? Although Milanovic's research refers to the initial stage of transformation (1989–1993) they are still up-to-date. The situation has worsened in some groups e.g. in rural society. There are other reasons to answer these questions. Generally, income and wealth distribution issues have a very long history. In Poland questions on fair distribution of wealth have been intensively discussed for a long time. They carry much economic and political weight. There is also another reason. Agriculture and rural society in Poland are still significant both in economic and political terms. Rural areas cover 93 per cent of Polish territory. About 14.7 million people still live there, which constitutes 38 per cent of the country's total population. About 2/3 of rural areas is involved in agricultural production and 50 per cent of rural families are farmers. At the same time, we face the fact that only 8 per cent of the

<sup>2</sup> According to Polish law a farmer is a person utilising at least 1 ha of farm land. The farmer's place of residence is irrelevant here. In 2002 out of a total number of 7,457,400 people connected with agriculture (in over 1 ha farms) 87% of people lived in the country and 13% in town. Source: *Powszechny Spis Rolny* (National Agricultural Register), GUS, Warszawa 2003.

population involved in agricultural production acquires income solely from agriculture. For the remaining 9.2 million people, agricultural activity is only an additional source of income. Pension transfers dominate in the income structure of the rural population, causing certain consequences for state agricultural policy.

Farms in Poland are characterised by a considerable diversification from the point of view of the production situation and incomes. About 13 per cent of 2 million farming families produce solely for their own needs. Only 37 per cent of farms sell their produce. The average value of those products amounted to 1200 zlotys (about 300 US dollars) annually, i.e. 100 zlotys monthly (25–30 US dollars), 2.5 per cent of farms do not produce at all. Therefore, more than half of the farms are so-called subsistence farms. It is therefore difficult to expect those farmers to see their future in the development of their farms. The dual character of Polish agriculture is also visible.

There is another question which has to be considered. All CEE countries have been changing in the spheres of economic, social and political life. There is no single theory, which satisfactorily explains how to adjust a “centrally planned society” to a modern, information and market society. After almost 15 years of transformation and growing political tensions we can say, that the existing development theories do not help much in solving the general issues such as growth, equality and justice.

This paper tries to answer one of those questions.

## METHODOLOGY

### Data Sources and Income Concept Used

Only one basic source of data was used; the Household Budget Surveys for selected years. This source of data is based on the sampling method, which allows for the generalisation of the results to the whole population of households. In Poland, before 1982 household budget surveys were carried out by the continuing method according to which the same sample households were under survey for a year or longer. Since 1993 the monthly rotation method has been used. Statistics offices conduct household budget surveys. Every year they collect data from approximately 32,000 dwellings.

The household's disposable income was used as a measure. It comprises, among others:

- Income from hired work,
- Income from one's own farm, measuring at least one hectare,
- Income from self-employment outside the farm,

- Income from free profession,
- Income from property,
- Social security benefits,
- Other social benefits,
- Other income.

In our study this category of income, calculated per capita, is used both for measuring income parity and income distribution (differentiation). In these calculations a significant role is played by the sources of farmers' incomes. The division of households into farmers and those utilising farms applied by GUS (Central Statistical Office) and used in this paper is determined by the amount of income earned from the farm and outside it. In other words, farm households were classified as those earning under half of their income outside the farm, whereas those utilising the farm with most of their income earned outside the farm in the general income. The latter were previously considered as part-time farmers. It should be emphasised that according to the National Agricultural Register in 2002 barely 18.6% of the agricultural population from households with over 1 ha of land earned their income only or mainly from farming. In other words less than one out of five farmers could be listed into the full-time farmer category. Almost 26.6% were part-time farmers, 15.8% made a living mainly from disability or retirement pensions and 38.9% (mainly children) were kept by farmers.

### Methodology of Income Distribution

The most common procedure for presenting income distribution data is by cumulative decile tables or their graphical counterpart, the Lorenz curves. Since the cumulative tables contain all the information provided by Lorenz curves the tables alone are used in the presentation. There are a number of statistics which measure income concentration or income inequality. The most popular one is the use of the Gini coefficient, which is used in this study. The Gini coefficients are calculated from the discrete (individual) data. It is well known that 0 and 1 bound the Gini-coefficient, implying, respectively: complete equality and inequality.

## DISCUSSION AND RESULTS

### Income Parity as an Agricultural Policy Goal

Agriculture was always a very sensitive political issue in all communist countries, including Poland. This issue was particularly important in Poland, the larg-

est private sector in all communist countries being in Polish agriculture. Farmers had real political power. All major political changes in Poland after World War II were connected, directly or indirectly, with food and agriculture. The problems which arose in feeding the nation in the years of crisis, forced subsequent governments to modify their agricultural policy goals.

Until 1980, Poland's principal agricultural policy goal was to achieve the highest possible rate of farm output growth. After 1980, this goal was changed to achieving self-sufficiency in farm and food products. After 1989, this main goal was changed yet again, this time to provide off-farm employment for farmers and rural people. During this entire period farmers' incomes were the most important issue for both farmers and decision makers. Both farmers and politicians believed that by solving the income issue, they could solve all other problems associated with this sector.

### Principles of Income Policies

For many decades farmers and politicians, acting as their representatives, have called for farmers' incomes to be equal to those of other social groups. The demand for equal incomes is based on the concept of equal opportunities for all social and occupational groups and was heard before World War II. In Poland it had a very strong religious and ideological background. The concept was referred to as parity. This concept became the foundation of one of the most fundamental principles of agricultural income policy. It was first defined in the USA in 1933 legislation as a way of measuring prices that would provide farmers with a 'fair' income. In fact, it was not income parity but parity prices measure.

Leaving aside the issue of achieving the goal of parity prices, in fact meant that the goal became one of having farmers' and non-farmers' incomes<sup>3</sup> increase at the same rate. It was a major contribution to the process of defining income principles for agriculture in many advanced industrial countries, including Poland. Over the years there was an evolution from the principle of parity prices to the principle of equal living conditions for farmers and non-farmers. Thus, the history of agricultural income policy in advanced industrial countries saw three goals of income policy, namely:

1. The goal of stable price ratios for farm products fixed at some historical period;
2. The goal of parity incomes, i.e. an equal level of income;

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<sup>3</sup> The division of societies into farmers and non-farmers is very common for technical reasons, i.e. the ease of applied comparisons. Of course, it assumes the homogeneity of both compared groups which is a considerable simplification. It is, however, a good way of analysing income differentiation.

3. The goal of parity living conditions, i.e. of equal living standards for different social and occupational groups.

However, there is a possible fourth option, i.e. no income policy.

Most developed, industrial countries, as well as Poland, tried to implement their income policies for agriculture using the changing objectives. Poland, for instance, adopted two principles of income policy for agriculture, especially towards private farmers (on state farms and later in co-operatives the principles of income policy were similar to those in industrial state enterprises). In 1956, a so-called new agricultural policy introduced the principle of equal rate of growth of incomes for farm and non-farm households. At that time the relation between a farmer's income and that of a full-time employee in other sectors of the economy amounted to 75 per cent. It is obvious that that principle would maintain relative differences in income and lead to increases in absolute differences in income. Farmers would be at a disadvantage from the beginning. But, in fact, their incomes increased much faster than non-farmers' incomes. Until 1981, when the principle of equal rate of growth of incomes was replaced by another concept, the relation between incomes of the two groups was much higher than at the beginning. Even in 1980, which was a very bad year for Polish agriculture due to bad crops, the relation of farm to non-farm income was equal to 84.2 per cent, and in 1978-79 it amounted to 90 and 93 per cent, respectively. Between 1981 and 1984, relative incomes of the farm population were near parity, i.e. the relation between farmers' and non-farmers' incomes was almost equal to one. It should be remembered that in these calculations only incomes derived from agricultural production were taken into account, not off-farm incomes.

By introducing the parity income formula for agriculture, Polish politicians believed that:

- This would be the best measure of the income situation of farm households.
- Food shortage issues would be solved. As a result, political tensions would be eliminated.

The early 1980s brought essential changes in income policy in Poland towards private farms. The principle of equal rate of income growth was replaced by the principle of parity incomes, which meant equal incomes for farmers and non-farmers. This principle was similar to the one followed by the EEC. The adoption of parity income policy in 1981 in Poland was unsuccessful. It was introduced together with a policy of increasing prices at a time of severe decline in the production of agricultural products and chaos on the market. The decision to implement the principle was both economic and political. With this move politicians hoped to bring about an increase in the scope and volume of agricultural production. However, at that time and in 1982, there was no longer any connection between prices and goods on the market. The purchase price of agricultural products increased 67 per cent, whereas the price of consumer goods for farmers increased

only 28 per cent. This caused farmers' incomes to rise above parity. The relation of income for consumption in a farm household to that of a full-time employee in a non-farm household was 90 per cent in 1981. The following year it increased to 106 per cent, and in 1983 it amounted to 99 per cent. Since 1983, the difference between incomes of farmers and non-farmers has been decreasing. In 1989, it was around 84 per cent. In August 1989, the government formally stopped following the principle of parity incomes. The introduction of market prices, as demanded by farmers, resulted in a rise in incomes for a short period.

In the last quarter of 1989 the nominal income per head of population in a farm household was 33 per cent higher than in non-farm households. This situation did not last long, and in the second quarter of 1991, farmers' incomes were far behind other social and occupational groups in Poland. In 1994 and 1995, the ratio of farmers' to non-farmers' incomes was 87.6 and 91.3 per cent, respectively. On the whole, the new economic policy did not provide any income policy for agriculture. Agricultural policy was based on market economy principles.

### Parity and Economic Development

The previous discussion shows that income parity may be defined in a number of different ways; moreover it can be measured using various methods. J. R. Bellerby was one of the pioneers who did research in that area. (Bellerby, 1956). Before World War II he measured relations between incomes in twenty countries using the concept of the ratio of the farmers' incentive income. According to his definition, the income ratio is the relation between the incentive income per man equivalent of a person employed in agriculture and the incentive income per man in other sectors of the economy. Incentive income meant the return for the worker's effort and his undertaking. In agriculture this was defined as the total factor income after the deduction of the net rent, interest costs and wages paid to agricultural workers.

However, Bellerby's research on the incentive income ratios in the agriculture of Great Britain during the periods between 1867–1869 and 1911–1914 and between 1923–1929 and 1936–1938 showed a big difference in this ratio in the periods considered. In fact, the income incentive ratio was up from 35.5 per cent in 1892–1896 to 81.1 per cent in 1933–1935. In 1938, Bellerby reported his next international research using 28 countries. On the basis of his research, he claimed that there was no positive correlation between the level of economic development and relative incomes of farm households.

Bellerby's research refers to the first half of the 20<sup>th</sup> century. We follow it by using FAO data and its formula, which is the relationship between the share of the agricultural GDP and the GDP of other economic sectors divided by the share of

agricultural to non-agricultural population. Analysing the data we could conclude that the income parity was incidental and was the result of some specific social, economic and political conditions (Klank, 1997, p. 55). Thus, instead of using the term "parity" we suggest the term "relative incomes".

The correlation coefficients between the per capita GDP and the relative incomes has been calculated for 1961 and 1980 and were 0.663 and 0.464 respectively. They turned out to be statistically significant with a very high probability level:  $p = 0.999$ . These results demonstrate that the relative incomes and the economic growth are not highly correlated.

The next analysis based on FAO data for all countries examined the correlation between economic growth and the changes in farmers' relative incomes. In other words, does economic growth produce income parity between farm and non-farm households? Based on the same FAO statistical data source for 1961 and 1980, a correlation was calculated between two variables: a) the rate of economic growth, measured as increase in per capita GDP; and b) the increase in relative incomes, defined as the point difference between the periods analysed. We have to remember that we have taken into account only agricultural incomes, i.e. derived from agricultural activity (production).

The coefficient of correlation between the two factors amounted to  $r = -0.103$  and turned out to be not statistically significant. In other words, there is a very weak correlation between economic growth and the increase in relative income of farm households. Many scientists, among them E. O. Heady, claim that economic growth even worsens the relative economic position of farm households (Heady, Whiting, 1975).

This assertion may be correct, but it is relative income that declines and not absolute income level. Economic growth produces income increase for all social groups, but not at the same rate. Farmers' income derived from agricultural production may grow slower than the income of other social and occupational groups. Our analysis shows this as a general tendency all over the world. However, the opposite tendency can be observed in some countries. So, what was the situation in the Polish case? In the transformation period and especially in the years 1992–2000, Poland experienced very quick economic development. At that time average GDP per capita rose at a rate of 4.9 per cent p.a. It was even quicker in the second half of the 1990's than in the first. The impact of such quick economic development on farmers' incomes is presented in table 1. Based on table 1 we can conclude the following:

Between 1997 and 2000 relative incomes of farmers compared to all households were: 92.7 and 74.7 per cent respectively and compared to worker households 90.3 and 69.4 per cent respectively.

At the same time, relative incomes of part-time farmers were growing slower

than those of farmers and were 83.9 and 74.2 respectively, compared to all households and 81.8 and 73.6 per cent if we compare them to worker households.

Generally, the so-called income disparity of Polish farmers, both full-time and part-time was not dramatic. These ratios should be considered good, especially when considering the relatively low labour productivity of Polish farmers. Additionally, they compare with the income situation in the 1970's and 1980's (Klank, 1985).

Table 1

Monthly personal disposable income  
by socio-economic groups; in '000PLN/person

Household	Year			
	1997	1998	1999	2000
Total	473,8	522,9	560,6	610,5
Employees	486,4	546,4	592,1	657,3
Pensioners	n.a.	614,1	665,7	696,4
Self-employed	618,4	655,1	715,9	794,7
Disabled	494,63	452,7	483,7	494,9
Farmers	439,3	406,8	411,5	456,0
Part-time farmers	397,7	419,4	438,4	483,6

Source: Household Budget Survey, GUS/CSO, Warszawa (selected years).

If this is so, why do farmers complain about their economic situation? The answer to this question is rather complex. There are different reasons, not only economic, the most important of which are, as follows:

- Nowadays, Polish farmers operate in completely different economic conditions than during communist times. There is uncertainty. Agricultural prices are not fixed; they have difficulty selling agricultural products; there is strong competition from the outside (import). State income policy towards this group is unclear.

- Farmers' real agricultural incomes (from agricultural production) decreased significantly mainly due to agricultural production stagnation. In the period 1995-2000 real agricultural incomes dropped by 50 per cent. At the same time real disposable incomes of all households rose by 21.4%.

- Farmers have experienced growing differentiation of incomes and wealth

not only between rural and urban people and among different socio-economic groups but also within the agricultural population itself. A growing number of rural people live in real poverty.

– The structure of farmers' income has changed significantly. Contrary to earlier periods (1960–1980) farming families depend more and more on off-farm incomes, mostly transferred ones (either pensions or other social benefits). Since 1991 there has been a compulsory farmers' insurance scheme. It provides at least the same amount of income for farmers as they get from agricultural production. Farmers do not pay any contribution to their health insurance, either.

– Rural areas no longer depend on agricultural income. As we can see (table 2) only ca. 16 per cent of disposable income in rural areas comes from agriculture.

Table 2

Monthly disposable personal income by size of location in 2000; PLN/person

Item	Cities						Villages
	Number of inhabitants (in'000)						
	Below 20	20–100	100–200	200–500	More than 500	Total	
Income 000 PLN	572,2	623,9	684,9	730,5	935,1	695,0	483,0
Percentage of income derived from:							
Employment	50.4	51.9	52.8	51.3	54.4	52.3	37.6
Farm	2.1	0.5	0.2	0.2	0.2	0.6	15.7
Self-employment	9.1	8.7	9.6	11.9	12.0	10.2	5.2
Social benefits	32.4	33.1	31.7	30.3	26.4	30.7	36.6
Property	0.2	0.2	0.1	0.5	0.7	0.3	0.1

Source: Own calculations based on the GUS/CSO household survey.

– In 2000 rural population incomes were over 30 per cent lower than those of the urban population. This situation is not accepted by rural society which consists mainly<sup>4</sup> of farming families. We have to remember that in Poland the job

<sup>4</sup> In 2002 farmers owning at least 1 ha numbered approximately 6.5 million people, constituting 44% of the rural population in Poland. However, for 1,385,100 (i.e. 18.6%) farming was the only or main source of income, See. PSR, GUS, op.cit. [www.stat.gov.pl](http://www.stat.gov.pl)

market situation is very difficult. At the same time over 3 million persons were officially registered as unemployed and the official unemployment rate was 17.3 per cent. Since that time the situation on the labour market has worsened. In 2003 the unemployment rate exceeded 18%. In practice, there are no new jobs, not only for farmers.

There is another more general question related to income parity. Differences in income within agriculture raise doubts and questions regarding the principle of income parity. Hence the next question: does achieving income parity in agriculture mean equal incomes and equal satisfaction for all farmers? The answer is no, because:

– Farmers are generally unaware of what parity is. What they want, in fact, is not equal but maximum income. If they compare their situations with those of workers in other sectors of the economy, they compare living conditions and not income. It appears that the principle of parity is of greater importance to politicians than to farmers.

– Generally, income differentiation within the agricultural population is greater than in income of those employed in other sectors of the economy. In many countries a small percentage of farms have very high levels of production and income. In other words, the concentration of income within farming in these countries is very high. As a result, many farmers with lower income are not satisfied with their income situation, even though on average the agricultural sector receives income parity. Thus, achieving parity has little to do with achieving equal incomes. Such a situation has also been observed in Polish agriculture.

– Due to the difficulty in obtaining proper income data, the income parity concept can be subject to political manipulations. In the 1980s, Poland experienced such manipulations.

– Implementation of the income policy that is based on a parity formula can be very expensive in case of very low efficiency in agriculture. In other words, achieving parity incomes will require considerable money transfers from taxpayers or consumers to farmers.

### Income Differentiation

As we have mentioned above, in Poland in the transition period differences in income and wealth soared. Between 1984 and 2000 an official growth of the income differentiation for all households, measured by the Gini coefficient for those years was 0.24 and 0.33 respectively. A faster growth of income differences for farmer households than other socio-economic groups should not be a surprise. They were earlier also more differentiated than non-farmers. It is also important that there are some state guarantees for wages (minimum wage) but no such

guarantees for the income of self-employed persons and farmers. However, the tax system is favourable for many Polish farmers. They pay so-called agricultural (land) tax, which is not bound directly with their incomes. Indeed according to that tax system farmers are obliged to pay tax even when they report losses but this system is particularly favourable for big farms. However, official income statistics show much lower differences than existing ones. There are many farms (5–15 per cent) with negative incomes, which are not included in the Gini coefficient calculation. A so-called “grey economy” is not included in those statistics, either.

Table 3

Gini coefficients by socio-economic groups in the years 1984–2000

Socio-economic group	1984	1997	1998	1999	2000
Total	0,240	0,315	0,312	0,314	0,328
Employees	0,233	0,318	0,321	0,320	0,343
Part-time farmers	0,258	0,302	0,306	0,305	0,291
Farmers	0,362	0,481	0,449	0,455	0,466
Self-employed	n.a	0,377	0,371	0,349	0,364
Pensioners	n.a	n.a	0,219	0,226	0,235
Disabled	0,215	0,244	0,264	0,272	0,284

Source: for 1984: I. Topińska, M. Wiśniewski, *Zróżnicowanie zasobów oszczędnościowych*, *Życie Gospodarcze*, No. 11 (1996); for 1997–2000 own calculations.

Additional conclusions can be drawn from income distribution presented by decile groups (table 4). The data show the strongest concentration of incomes in agricultural and self-employed households. About 50 per cent of the farmers' income is owned by 20 per cent of farmers. In order to make incomes evenly distributed over 1/3 of farmers' incomes should be moved to lower deciles, i.e. to poorer families. Income distribution by decile groups shows that not all farmers have lost during the transition period.

Table 4

Personal disposable income distribution by deciles and type of household in 1998

Deciles	Household						
	All	Employees	Part-time farmers	Farmers	Self-employed	Pensioners	Disabled
I	3,1	3,3	3,4	1,6	3,0	4,4	3,4
II	4,8	4,8	5,1	3,3	4,4	6,3	5,3
III	6,0	5,8	6,1	4,3	5,5	7,3	6,6
IV	7,1	6,8	7,0	5,3	6,9	8,1	7,7
V	8,1	7,8	8,0	6,4	7,1	8,9	8,7
VI	9,2	8,9	9,0	7,7	8,6	9,7	9,6
VII	10,5	10,2	10,3	9,6	9,8	10,6	10,8
VIII	12,1	11,9	11,9	11,9	11,6	11,8	12,4
IX	14,7	14,9	14,5	16,1	14,7	13,7	14,5
X	24,5	25,6	24,7	33,8	28,3	19,2	21,0

Source: see table 1.

### Poverty

Analysing income differentiation one cannot ignore the poverty issue. Poverty is like the other side of the coin named wealth. Poverty really exists in Polish families. The incidence of poverty varies across the different socio-economic groups and definition used (table 5).

According to the legal poverty definition the number of people living in poverty in Poland is relatively stable. In the period 1997–2000 only 12.1–14.4 out of a country population of 38.6 million lived in poverty. Of course, usually governments tend to ignore this “embarrassing” issue. But, even if we limit ourselves to the official definition this is about 4.7–5.7 million people. According to this definition, in 2000 the highest incidence of poverty was among social benefits recipients (both pensioners and disabled) and farmers. There was almost no poverty among white-collar families.

Table 5

Poverty incidence by socio-economic groups and definition in 2000 (percentage)

Socio-economic group	Minimum wage	Existence minimum	Relative poverty threshold	Official poverty threshold
TOTAL	53.8	8.1	17.1	13.6
Employees	52.5	5.8	13.6	10.4
- workers	65.9	8.6	19.7	15.1
- non-workers	29.7	1.1	3.2	2.5
Farmers	68.5	12.9	26.2	21.3
Part-time farmers	62.9	8.6	20.9	16.2
Self-employed	38.2	3.7	8.5	6.5
Pensioners and disabled together	48.3	8.0	16.6	13.3
- pensioners	39.0	5.1	10.8	8.4
- disabled	62.8	12.6	26.6	20.8
Social benefits recipients (non-earned income)	84.3	33.3	49.1	43.1

Source: estimates based on *The household budget survey 2000*, GUS/CSO, Warszawa.

But, if we take into account the definition based on the minimum wage criterion the relevant figures are much higher compared to the official definition. But the ranking of poverty households remains. About 54 per cent of people live below the minimum wage level; for the unemployed this percentage is higher than for farmers and workers. There is a close link between education and poverty (table 6).

If we take education of the household head and poverty incidence as a measure we can observe a very strong inverse relationship between them. This relation leads to the crucial conclusion that one of the ways of alleviating poverty is education.

Table 6

Persons living below the poverty line in 2000;  
(by definition and level of education of the family head)

Education level	Definition			
	Minimum wage	Existence minimum	Relative poverty line	Official poverty line
Total	53.8	8.1	17.1	13.6
University	14.8	0.3	1.2	0.8
Secondary	41.7	3.2	8.2	6.3
Vocational	64.9	9.4	20.9	16.2
Elementary and none	67.7	15.6	28.9	23.9

Source: see table 5.

## CONCLUSION

During the transition period Poland's economy achieved rather a fast rate of economic growth, exceeding 4.9 per cent p.a. However, in 2001 and 2002 Poland experienced economic stagnation. The period of economic transition in post-communist countries brought about a considerable increase in income differentiation in society. This differentiation applied to a greater extent to farmers and rural population than to the non-agricultural and urban population. The relative income situation of farmers compared to non-farmer families, so-called income parity, has worsened but not to a dramatic level. That was due to the growing contribution of the state budget to agriculture. Most state subsidies, i.e. over 70 per cent, are devoted to farmers' income increase through a pension system. The state budget constraints cannot allow for the continuation of such a policy.

During the transition income differentiation of all households measured by the Gini coefficient soared from 0.240 in 1984 to 0.328 in 2000. However, the Gini for the same period of full-time farmers was 0.362 and 0.466 respectively. Part-time farmers' incomes were less differentiated than those of full-time farmers. Distribution of incomes showed that all socio-economic groups benefited from economic growth. However, these benefits were not equally distributed within a specific group. One of the most striking results of such unequal distribution is poverty, which is very high, especially in rural areas. Depending on definition

of poverty we can talk about 4.5–20.5 million people living in poor economic conditions. The problem is that there is no clear state policy towards that issue. One of the many ways of improving the economic situation of Polish farmers is education adjusted to labour market demand. However, it can be achieved in the longer term.

### References

- Bellerby, J. R. (1956), *Agriculture and Industry-Relative Income*, McMillan and Co., London–New York.
- Cesarato, S. (1999), Savings and Economic Growth in Neo-classical Theory, *Cambridge Journal of Economics*, Vol. 23.
- Heady, E. O.; Whiting, L. R. (1975), *Externalities in the Transformation in Agriculture. Distribution of Benefits and Costs of Development*, The Iowa University Press, Ames.
- The Households Budget Survey* (selected years), GUS (Central Statistical Office, CSO), Warszawa.
- Klank, L. (1997), Improving the Income of Farmers and Rural People, [in:] *Searching for common ground. European Union enlargement and agricultural policy*, K. Hathaway and D. Hathaway (ed.), FAO, Rome.
- Klank, L. (2000), Sytuacja dochodowa ludności rolniczej na tle innych grup społeczno-zawodowych (The income status of the agricultural population compared with other socio-professional groups), [in:] *Raport o stanie finansowym Państwa w 1999 r.*, Institute of Finance, Warszawa 2000.
- Klank, L., Kłodziński, M. (2001), Macroeconomic preconditions of rural development in Poland, *Village and Agriculture – Selected Papers*, No. 4 (13), IRWiR PAN, Warszawa.
- Mały rocznik statystyczny 2001*, (Small Statistical Yearbook 2001), GUS, Warszawa 2001.
- Mankiw, D. G., Romer, D. (1992), Contribution to the empirics of economic growth, *Quarterly Journal of Economics*, Vol. 107, May.
- Milanovic, B. (1998), *Income, Inequality and Poverty during the Transition from Planned to Market Economy*, The World Bank, Washington D.C.