

Economic Transformation and Land Use Systems in Poland

(Case Study in Skierbieszów Community - Zamojski Voievodeship)

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Introduction

The Food and Agricultural Organisation of the United Nations was made a technical assistance and a financial contribution to the Warsaw Agricultural University, Faculty of Agricultural Economics to support an activity and preparation of this report titled „Economic Transformation and Land Use Systems in Poland”.

The Programme of Action adopted by the 1979 World Conference on Agrarian Reform and Rural Development (WCARRD) recommended that the UN organisations, with FAO as the Lead Agency, collect quantitative data and develop appropriate indicators on a range of specific items relating to the progress of agrarian reform and rural development.

A provisional list of socio-economic indicators was made available to countries for the preparation of reports on progress in agrarian reform and rural development.

The indicators have proved an effective means of evaluating agrarian reform programmes. They focus however, only on revealing macro trends and patterns. Consequently, it was necessary to develop methodologies and indicators that are both more country-specific and that are concerned with systemic diagnosis at the local level, with a focus upon land use systems. These two tasks constitute the overall objectives of the activities within this report. There is a third, and related objective: an analysis of the current Agrarian Reform situation in Poland. In the micro-level analytical component of the study was used „Agrarian Systems Diagnosis” (ASD) from FAO.

Agrarian Systems Diagnosis is a methodological approach for the assessment of local agrarian systems. It produces a wide range of socio-economic indicators, with which agrarian systems can be understood and policy suggestions proposed. The information in the field was collected with participatory techniques.

We hope that the ASD analysis will provide a diagnostic study for the benefit of policy makers in Poland. The final output is consisting of a series of models relating to the different types of production systems.

The main objective of the project is the identification of appropriate micro-level socio-economic indicators for the assessment of current land use systems in Poland, for example:

- definition of principle farmer categories and land use systems,
- the development of typology important categories of farmers and farm enterprises,
- the application of agrarian systems diagnosis methodology in selected pilot areas (in Skierbieszów Community),
- the identification cropping patterns, land use systems, household income patterns, levels of hidden unemployment.

These activities were utilised data from both existing documentation and that collected from field visits. Data were collected in relation to the different forms of cultivation, and the range of different technical methods applied, the levels of inputs and output as well as the level and sources of incomes.

The data that refers to the type of production systems, were interpreted through comparing the economic results of the various production systems with the various limiting factors, for example: land; operating capital; skilled labour, supply and inputs. Household income was expressed in relation to the reproduction threshold. Hidden unemployment was measured as a percentage of labour required to manage a farm in relation to the actual labour available at farm level. (See questionnaire in Annex).

In applying ASD methodology the experience from other countries was used, for example: from Laos, Brazil, Lithuania. We hope that presented results, as well the ASD methodology, the economists and policy makers find interesting.

Authors

1. The post-war agrarian reform and following agricultural policy in Poland

1.1 The post-war agrarian reform and reconstruction of agriculture (1945-1949)

The attempts of the agrarian reform which took place in Poland in the wake of the Second World War tended towards liquidation of the big landowners and the land transfer to the poor farmers and partly to the state. A necessity of such a reform was due to the unfavourable land structure before World War II. A great deal of rural population had no land and work. Among total number of the 3.2 million peasants farms over two million were farms with an area of less than 5 hectares. Moreover, war brought huge destruction in the agrarian sector. In such conditions main principle of the communists party agrarian policy was: land and work for peasant. Implementation of this policy i.e. the agrarian reform of 1944 - 1949, caused transfers of more than 6 million hectares of land (about 30% of all agricultural land in Poland). Over 800 thousand of new peasant farms were established, 250 thousand family farms enlarged their area and many big state farms were created.

The agrarian reform in Poland combined economic, social and political goals. All farms over 50 hectares located in central and eastern regions and 100 in western and northern parts of Poland were divided into smaller plots. There were size limits (up to 5 hectares) for newly created or enlarged farms. As a result of the land reform the area of small-sized farms enlarged on the average by 1.9 hectares. In all, over 1.1 million rural families benefited from it. The decrease of the number of farms with smallest area and of largest ones contributed to the increase of total number of farms in the 2 - 20 hectares group. As a result, there was no more land-less population and former hired agricultural workers turned to farmers.

Other important task for the post-war agricultural policy in Poland was reconstruction of agriculture and improvement in the food supply. It required reconstruction of livestock, increasing yields of crops and animal productivity as well as growth in supply of industrial inputs. This is the period of increased state investments, credits, rural electrification, development of agricultural education and extension services.

1.2 The period of forced industrialisation and compulsory collectivisation

At that time new structural policy in the Polish agriculture was initiated. Simultaneously a policy of forced collectivisation of peasant farms in Poland was proclaimed in 1949. That plan meant the beginning of liquidation everything that had been linked with previous peasant ownership structure as well as establishing a centralised (planned) system of the Soviet type. In addition compulsory deliveries of main farm products (grain, slaughter animals, potatoes and milk) at low prices were imposed on all peasant farms. Very low prices which were subject to the compulsory deliveries (in theory 50 per cent, but in some years amounting to as little as 1/3 of the market prices level) being a form of a forced transfer of product surpluses and charging the agricultural sector with the costs of economic development.

The agricultural policies from beginning of the fifties were aimed at a development of the socialised sector of agriculture. During the period of the forced collectivisation a transfer of land from the peasant to the co-operative and state farms amounted to over 2.5 million

hectares (to 13.8 per cent of total land area of peasant farms. Since 1950 to 1956 total 10.5 thousand agricultural co-operatives were organised which associated 185.5 thousand families.

The state farm sector which occupied about 3 per cent agricultural land in 1948 was also consolidated. The share of this farms along with collective farms in the country's farm land increased from 10.4 in 1950 to 22.7 per cent in 1955. However, in this very period a professional farmer's movement (Samopomoc Chłopska) was created. The Union dealt with supplying and distribution of agricultural inputs among farmers, forwarding contracts, processing, running retail shops etc. At that time began a growing subordination of unions and co-operatives to the government.

The forced collectivisation which took place in the early 1950' in all countries of eastern Europe - and especially in Poland - was based on the political doctrine more than on actual economic needs at that time. In Poland this collectivisation had not economic foundation at all. As a result with the first "thaw" of 1956 majority of collective farms had been dissolved (only about 1000 stayed in business).

1.3 A return to the reasonable agrarian policy in the mid 1950's

The new agricultural policy in the period 1956 - 1970 was aimed at increasing production of inputs for agriculture.

The essential importance in the new agricultural policy after the political upheaval of 1956 were the changes carried out not only in co-operative movement but also liberalisation of land policy which permitted free transfer of land and the adjustments of the farm area to the labour and capital resources.

Restoration of the country agricultural circles was one of the most important decisions of that time. Circles were a socio-professional organisation of farmers, and after a few years became a strong factor of technical progress in agriculture. The agricultural circles have some impact in increasing mechanisation in peasant sector of agriculture and consequently improvement of peasant farms profitability.

In those years procurement prices were slowly raising as well as input supplies to agriculture.

As a consequence of the new agricultural policy as a whole an increase of production in agriculture was fairly remarkable. The rate of its growth rose from 1.8 per cent in the years 1950 - 1955 to 3.1 per cent in the period 1957 - 1960 and in 1961 - 1965 to 3.7 per cent annually.

1.4 The agricultural policy after 1970

The next period in evolution Poland's agricultural policy has began after bloody occurrences at Gdańsk in December 1970 and the communist party turn which than took place as it's result. In general economy there was a stress for raising wages, increase in consumption, which led to more demand for agricultural products.

In economic policy with regard to the agriculture some changes have been made after 1970. It was expressed by higher prices and credit funds as well as other economic conditions for making agriculture more profitable. The compulsory deliveries to the state of agricultural products were abolished and contracting at more profitable prices was expanded at the beginning of 1972.

There was a rise in investment outlays input for agriculture after 1970 (farm machinery, fertilisers, pesticides). In agriculture investments increased at a faster rate in the socialised sector of agriculture than in peasant farm sector.

The agricultural policy after 1970 was connected with official doctrine based on the equilibrium of agricultural sectors what meant a permanent coexistence of the peasant and the socialised farms with equal possibilities of development for both of them. However, in practice the socialised sector of agriculture had special privileges.

In 1981, in the conditions of a political and economic crisis, a fundamental reorientation of the agricultural policy was introduced. Thus peasant farming gained political priority and guarantees.

Many social services were implemented in 1970', starting with free medical care for private farmers. The modest, previous pension law for farmers was expanded. The second and fundamental revision and expansion of this law was accomplished in 1977. Voted by the Parliament the Law on common retirement system for private farmers have been introduced gradually since 1978 and fully applied in 1980. This system of social security benefits extends the state guarantee to farmers who have reached the retirement age and have transferred their farms to a natural successors or to the state. That system accelerated partially the "generation change" in the Polish agriculture and taking over more and more farms by the young farmers who generally represent a high level of vocational skills.

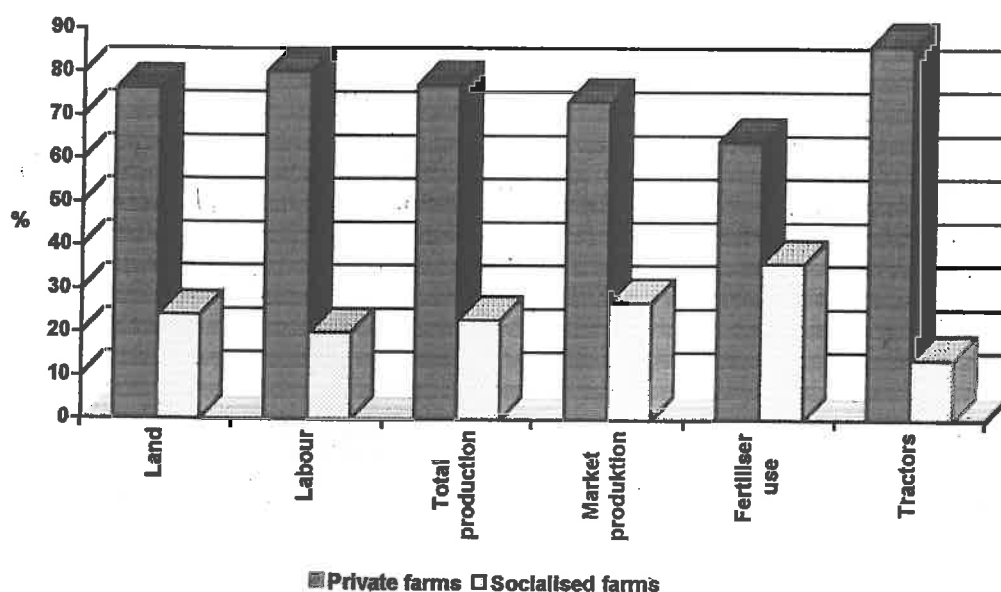
In those years different kinds of subsidies (both producer and consumer) were introduced, including cheap bank loans.

2. Main features of agriculture

2.1 Agrarian structure

Before 1989 Polish agriculture consists of three sectors: private farms, state farms and agricultural co-operatives. The last two sectors created so-called socialised sector occupying 24 per cent of the total agricultural area and employing 20 per cent of the agricultural labourforce had the share in total and market production respectively 23 and 27 per cent. Moreover, in this sector were used 36 per cent of fertiliser.

Fig. 1 Relative sizes of the private and socialised sectors in 1990



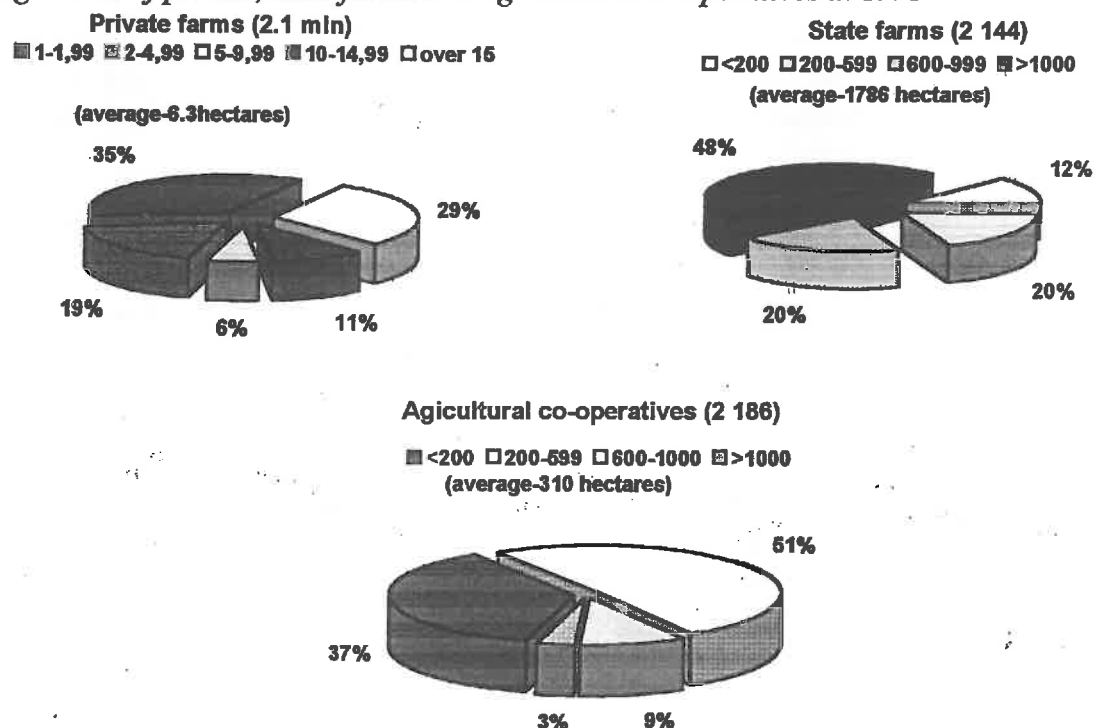
State farms, covering 20 per cent of the total agricultural area, are concentrated mainly in the northern and western parts of Poland. Around 50 percent of them have more than 1 000 hectares, but most of bigger state farms are divided into smaller units (100-350 hectares) located very often far from central administrative centres. Their main activity is focused on grains' production. Most of them also have other production and services activities such as repair centres, grain storage and food processing.

The co-operative farms have on average around 310 hectares. In the past 50 per cent of co-operatives farms were established on the land assigned to them by the state. Former agricultural workers became the members of such co-operatives. Nowadays 90 per cent of co-operative members have no land of their own. A negligible part of land used by co-operative farms is legal property of the farmers who were forced to be members of co-operatives. Half of co-operative farms are specialised co-operatives. They obtain about 50 per cent of their total receipts from processing, services and non-agricultural activities. On average around one-third of their receipts come from animal production.

Private farms are basic sector of agriculture. The majority of these farms is rather small. More than half of them have less than 5 hectares and cover 23 per cent of agricultural

area. Only 6 per cent have more than 15 hectares and cultivate 20 per cent of agricultural land. The smallest private farms, having less than 4 hectares, are located in southern Poland. In northern and western parts of Poland the average size of private farms is more than 8 hectares.

Fig. 2 Size of private, state farms and agricultural co-operatives in 1992



2.2 Agrarian structure of private farm sector.

Polish agriculture has developed specific structure, different both from western and east European countries. In the post-war period there was a very strong tendency to establish state-ran and cooperative farms, after 1956 as a result of social unrest agricultural policy was relaxed which conditioned the emergence of the structure existing to the present day.

In European developed countries, a drop in the number of farms, enlargement of an average farm size and an increase in the number of larger farms have been observed. Poland agricultural structure is much worse in comparison with Western European countries, and the rate of structural changes is slower.

Recently the significant drop in the number of farms can be attributed to the increase in their minimum area from 0,5 to 1 ha. Thus a number of allotment has increased. A significant decrease in the concentration of agricultural production and its scale was not observed.

There are over 2.000.000 private holdings in Poland, but they do not form a homogenous group. A division into three main groups, with around 700 thousands farms in each group with different functions:

- 1 - full-time farming,
- 2 - part-time farming,

3 - self subsistence farming.

Table 1 Private holdings in Poland by size (thousands) 1950 -1990.

Year	Total number ('000)	Holding size in hectares				
		0.5-2	2-5	5-10	10-15	>15
1950	3169	821	992	977	246	133
1960	3592	1178	1092	938	284	100
1970	3399	1135	968	886	296	114
1980	2897	869	855	747	281	145
1987	2729	809	753	687	293	187
1990	2138	378*	757	637	242	130
Change: 1950-90	-1031	-443	-241	-341	-4	-3

*) 1-2 ha

Source: Polska 1918-1988. GUS (Central Statistical Office) 1989, Tab.155: Rolnictwo i Gospodarka Żywnościowa 1986-90. Warszawa 1992.

Group 1 farms:

Farms in these group are market oriented and main source of income is from agricultural production. Only in this group there are possibilities of introducing changes in the following directions:

- modernizing the farm, increasing income from agricultural production and assuring the effective use of resources and inputs,
- developing export production of the commodities which have the comparative advantage on the foreign and home markets,
- introducing new technology, new breeds and varieties,
- rationalising land economy and rural planing,
- preserving of the rural landscape and the environment.

Group 2 farms:

There are mainly small, part-time farms providing a source of employment and subsistence for families which also have some income from outside agriculture.

In the past, developing labour-intensive industries and services outside agriculture, caused migration from villages to towns and part-time farming phenomena. In the transition period there is a big increase of unemployment in the all economy and part-time farming is diminishing. Transfer of excess labour from towns to rural areas is observed and also the sizable number of part-time workers and unemployed is returning to farming. This can result in decreasing of labour productivity and in slowing an improvement of agrarian structure. There is also a chance that excess of labour assembled in the countryside, can be used for intensified agricultural production: labour intensive animal, horticultural production. Slow growth of food demand, low incomes increase, will impose some limitations for expending market production, but this economic situation will cause an increase of self supply by farm

families with food. In the period of transition such farms are useful because they lower unemployment and avoid the need (stress) to provide a social security benefit system.

Small scale farming presents the largest structural problem because it does not provide sufficient income from agriculture alone. The future of such a farming depends on diversification and development of pluractivity in rural areas.

Group 3 farms:

These farms fulfil a social role rather than a productive one. Their only goal is to be self-sufficient and provide subsistence to families in periods of crisis and economic recession. They are managed mainly by over retirement age farmers with little or no outside financial support. The agricultural production in such farms is declining rather than expanding. In a favourable climate, during economic recovery, the production resources (mainly land) of these declining farms could be released to aid the goals of structural policy.

2.3 Rural population and employment in agriculture

According to official estimates, the agricultural labourforce declined from 4,5 million to around 3,7 million between 1989 and 1993, mainly due to retirement and declining employment in state owned enterprises and co-operatives. Farms where the number of employed people almost halved. Share of agriculture in total civilian employment in the beginning of 1994 amounted 25 per cent. It should be noticed that agricultural labourforce has been relatively stable and had shrunk by only 3 per cent while the reduction of employment in whole civilian labourforce was more than 12 per cent.

Employment in private sector of agriculture has been declining very slowly and is rather stagnant. This situation, in recent years, is the result of two opposite trends: the absorption of the labour surplus (mainly part-time farmers) released by non-agricultural sectors and the growing number of farmers at the retirement age leaving the sector. Nowadays finding employment outside of agriculture is difficult and moreover, despite the fact that recently agricultural terms of trade deteriorated significantly, rural areas as a whole still offer relatively stable work and living conditions.

Structural transformations in agriculture aiming at an increase in the production scale and a decrease in employment are not undertaken without any purpose. As the experience of developed countries indicates, the objective of government structural policy is improvement of the economic situation of the rural population, mainly through increasing incomes of farms as well as creating possibilities of alternative sources of employment in those areas where agriculture does not generate sufficient income level.

The most important structural problems are, apart from the size of farms, issues concerning rural population and employment in agriculture. After the 2nd World War there was a large migration from rural to urban areas. This process resulted from rapid, extensive industrial development based on labour intensive technologies. Consequently, there was a drop in employment in agriculture from 54% in 1947 to 28% in 1988. However, the number of persons employed, have not changed considerably during the whole period after the War. According to the data of the last general census in 1988, in rural areas lived 38,7% of the 38 million population of Poland. The biggest percentage of the rural population can be found in South-Eastern regions whose farm structure is the most dispersed one and industries as well as services are underdeveloped. In these regions the rural population constitutes over 55% and in some voivodships it amounts to 60-70%.

Table 2 Rural population and employment in Polish agriculture

Years	1947	1950	1970	1988
Employment in agriculture in '000 persons	5461	5367	5210	5003
Employment in agriculture (%)	53,6	43,3	34,3	27,7
Agricultural population (%)	47,1	38,4	29,8	17,7

Source: Statistical Year-book GUS (Polish Central Statistical Office)

There are some disproportions of employment within the food economy sector: direct employment on farms is predominant compare with processing industries, services, inputs industries, etc. Many farmers, particularly those whose farms are small, are looking for alternative sources of employment and incomes outside their farms. According to the general census carried out in Poland in 1988, rural population indicated the following sources of employment: agriculture only - 23%, additional sources of income beside agriculture - 29%, old age pensions -13%.

Rural population employed outside agriculture amounted to 35%. There are considerable regional differences between regions with regard to part-time farmers. The largest number of part-time farmers can be found in areas with dispersed agrarian structure, thus in the South and South-Eastern part of Poland. Another structural problem of agriculture is work of female population. According to the GUS data, the percentage of women employed in the Polish private farm sector equalled to 51.6% of the employed in 1988 and they managed over 20% of farms (almost every fourth farm was operated by a woman). Women farming is generally connected with the dispersed agrarian structure, men's part-time farming and work of elderly people in agriculture. In 1994 this proportion were similar, but unemployment rate was very high, in rural areas within the group of women - 12%, men 9%. In agriculture unemployment rate was: within women 10%, and men 6%..

2.4 Regional agricultural structures.

An important structural problem is presence of less favourite areas. These regions are characterized by unfavourable conditions for agricultural development. In these regions there have been process of delaying and stopping the development which resulted in a low level of incomes, difficult living conditions, a high unemployment rate, low level of industrialisation and urbanization as well as services and infrastructure, great distance from cultural and economic centres and underdeveloped network of roads.

Intensive migration from some rural areas and economic backwardness has been symptomatic. Geographically, this process has been taking place in Poland on the called Eastern wall: Eastern part of the Zamosc region as well as Hrubieszow and Chelm regions, North-Eastern part of the Suwalki, Lomza, Biala-Podlaska voivodships and as well as North - Western parts of Poland near Western border: Western Pomerania and the Sudety region. Beside, in some Central parts of Poland intensive migration from rural areas have occurred.

The reasons for the large migration from most of the regions were the following: unfavourable natural conditions, no infrastructure, no possibilities of alternative employment in other segments of the economy, thus mainly socio-economic condition. However, migration occurs in the regions where natural conditions are favourable, e.g. in the Jaworsko-Hrubieszowski region and part of the Roztocze. Migration in these regions from economic reasons: difficult living conditions in rural areas, great distance from cultural and economic centres, no alternative sources of employment, no adequate services and industry. To activate these regions economically, it is necessary to develop the service part of the food sector, food

processing industry and the network of commercial centres as well as commodity exchanges. In the regions where economic growth through the development of the food sector is ineffective, other non-agricultural activities (industries and services) might be developed. Support for pluractivity development in rural areas means government economic and organizational assistance, establishment of services as well as small industrial and craftsmen units, creation of conditions for tourism, support for non-agricultural activities on a particular farm and protection of rural natural resources.

2.5 Infrastructure.

Term infrastructure is used for a complex of institutions, buildings and technical facilities important in economy and social welfare. The technical infrastructure constituting the economy's nervous system is specially important. There is the communication network (transport), telecommunications, power network (electricity, gas, central heating, hot water), water supply network (water supplies, sewerage, land reclamation).

It is relatively easy to identify social infrastructure that includes facilities and institutions in the field of education, welfare, culture, sport and recreation.

Is it more difficult to identify the elements of economic infrastructure such as the following: stores and warehouses, network of shops and other commercial and catering establishments, financial institutions such as banks, cash points, savings-credit agencies, etc. contracting points for purchasing farmers products, outlets for agricultural input supplies, establishments and institutions rendering services, socio-economic institutions such as agricultural, commercial, industrial or economic chambers, companies and rural district administration.

The transformation process that have occurred in Poland since 1989, have also released the adjustment process in infrastructure. The ongoing privatisation of this sector is worth pointing out. The fastest is the trade privatisation brought about by changes on the market and by increases of supplies. Technical and social infrastructure is still public property. Many institutions are still state owned. There are various central, regional, district, local managing boards as well as various state, co-operative, agricultural associations and state farms owners. Many different users and owners often find it difficult to divide among themselves maintenance costs or to allocate investment contributions. Many infrastructure facilities do not bring direct income so the private or co-operative investors do not take interest in expending them. Decentralisation, strengthening local self-government and creating new opportunities to take up financial obligations for public benefit have only just begun. The new law on these issues is being made. People's mentality and old habits are also being changed. These processes do not take place everywhere at the same speed so increasing regional differences can be observed.

2.5.1 Social infrastructure.

Cuts on central budget expenditure as well as re-organisation consisting in taking over financing of many local institutions by local budget have caused transitory cuts on operations and closing down many institutions in this sector.

2.5.1.1 Education

Daily care in such institutions as nursery schools and kindergartens has almost terminated. The care is provided only for 15% children from large villages. There are

elementary schools in 70% of villages. Other 20% of villages are at least 5 km away from schools. Inferior level of education (due to shortage of teachers and joint classes) and limited access to further education for village children is often stressed in many publications. The percentage of high school and college students from rural areas decreases.

2.5.1.2 Culture

60% of all villages have no cultural facilities such as folk clubs, community centres or a libraries. The number of cinemas, regional folk ensembles, theatrical groups or song groups decreases. Watching television is becoming the most popular form of spending leisure time. Only 1/3 of country people regularly read newspapers and periodicals and less than half read books.

2.5.1.3 Health protection

Village medical centres were created the time when farmers were included in the system of free medical care and the related infrastructure was developed. In 1992 there were 1477 rural medical centres and neither that number nor the number of doctors have decreased over the recent years. A medical centre renders service to about 13 villages on the average and over 50% have a doctor on the spot or within the range of 5 km. The pharmacies have been quickly privatised and now over 80% are private. There are now more pharmacists and no problems with medical supplies. The financing of the medical services in some regions has been taken over by the budgets of the local districts.

2.5.1.4 Recreation and Leisure.

In many of the villages the sports, tourist and recreation facilities are poor. Only 14% of the rural districts have camping sites hotels. In 40% of the rural districts there are common lodging houses and hostels (many of them in school buildings during the summer holiday). Sports halls or swimming pools are quite rare. Sports facilities include mainly sports grounds or playing grounds for children.

2.5.2 Technical infrastructure

2.5.2.1 Rural water supplies

Over the recent years the development of the water pipe network has been quite fast thanks to the financial means provided by various foundations, including a church one. Water supplies are of primary importance in many villages where there is a shortage of surface water caused by faulty drainage works of the past. It can be estimated that now 3/4 of the rural households are provided with the current tap water, but nevertheless every fifth farmstead suffers from the inadequate water supply.

The development of water pipes network is not accompanied by simultaneous development of sewerage system which creates the problem of environment pollution. 3/4 of villages have no garbage dumping facilities.

2.5.2.2 Gas

In 1991, 72% of flats in towns were incorporated in the gas network and only 7% in the rural areas. Usage of propane-butane gas cylinders is more common.

2.5.2.3 Electricity

Even though almost 100% of all farmsteads in rural areas equipped with electrically powered facilities, only 1/3 of them is connected to three phase power supply. It proves that most power is used for household and not production purposes.

2.5.2.4 Roads

The research carried out at the IERiGŻ (Institute of Agriculture Economics and Food Economy) shows that asphalt access roads run through 92% of villages (most roads are in need of repair, though). Problems related to poor access due to bad roads occur mainly in Central and Eastern Poland, best roads are in the northern and western provinces. In 1991 over 40% of all the households were equipped with cars.

2.5.2.5 Public transport

The length of coach lines has not been considerably changed over the past few years whereas the running frequency decreased. There is a bus stop in 90% of the villages, but only every tenth village has a station. Increasing costs and low frequency pose problems. Some less used railroads are closed down. Bus transport is more flexible in adapting to the needs of inhabitants than the railway transport.

Soil surface roads are important for agriculture, but most of them have no rigid surfaces.

2.5.2.6 Telephones

Telephony is to substitute the agricultural transport. And yet over 1000 villages still have no phone and in many there are just one or two. Every fifth village has only one phone.

Whole telephone network requires upgrading and switching over to modern communication systems.

2.5.3 Economic infrastructure

The changes that have occurred in Poland so far create favourable conditions for the development of local economic infrastructure. Restoration of communal property, greater independence of self-government bodies, privatised trade and services support all these processes.

2.5.3.1 Banks

There are banks either in villages (40% of the total number) or in the range of 4 km away. 45% of villages are 5-9 km away from the banks whereas the other 15% of villages are over 10 km away. They are mainly co-operative and the majority of these banks have been affiliated with the long operating Bank of Food Economy (BGZ). The others operate on their own. New private and co-operative banks are being established. There are also commercial banks and loan associations.

2.5.3.2 Shops

The numbers of shops and other retail outlets, mainly food stores, have been increasing systematically over the few years. This process is linked to privatisation. The majority of rural commercial outlets as well as service workshops have been privatised. Those newly established

are more upgraded and of higher standard. 90% of the villages have a grocery shop while every third village has a general store.

2.5.3.3 Agricultural input, trading and agricultural produce purchasing stations.

The changes of economic situation along with the increase of agricultural input prices caused that many so far existing shops and outlets had been closed down and new ones (privately owned, commercial companies, foreign companies etc.), created in their place. Facing many difficulties in marketing the produce, the producers have been forced to organise themselves and establish many agricultural - commercial chambers as well as to change the functioning of many organisations. The rural markets and local fairs are of much greater importance now.

Legislative and regulatory processes are imposed by both, the economic reality and farmers as well. And yet, the law on local self-government and agricultural chambers is still at the stage of discussing the draft bills.

2.5.3.4 Services

Over the recent years there has been a rise in the percentage of villages that have their own workshops.

Many villages have audio-video equipment repair shops, cabinet makers, electrician's, fuel storage yards as well as a mechanic's- tool maker's shop where also cars can be repaired. For this group of services there is a greater demand due to the increasing number of cars and trucks, radio and TV equipment, VCR-s and tape recorders. Some families modernise their farms, dwelling houses, build summer-houses and therefore the number of carpenter's and electric shops are increasing.

Smiths, carpenters, plumbers and also hairdresser's and tailors are not in great demand, but there are still very few, less traditional services, such as e.g., car repairs (painting, mechanics, body sheets, vulcanising), modern radio and TV equipment, VCR-s, computers, domestic appliances, and also cleaners and the mangle. Another reason for criticising services in the country are the high prices. Summing up, it can be said, that the number of clients and shops are decreasing, wherever the services can be performed by people themselves mostly for economical reasons.

2.5.4 Spatial differentiation of rural area infrastructure in provinces

Attempts to systematise rural areas and study their comparative typology from the point of their infrastructure have been made. In the spatial system (map) the following can be observed:

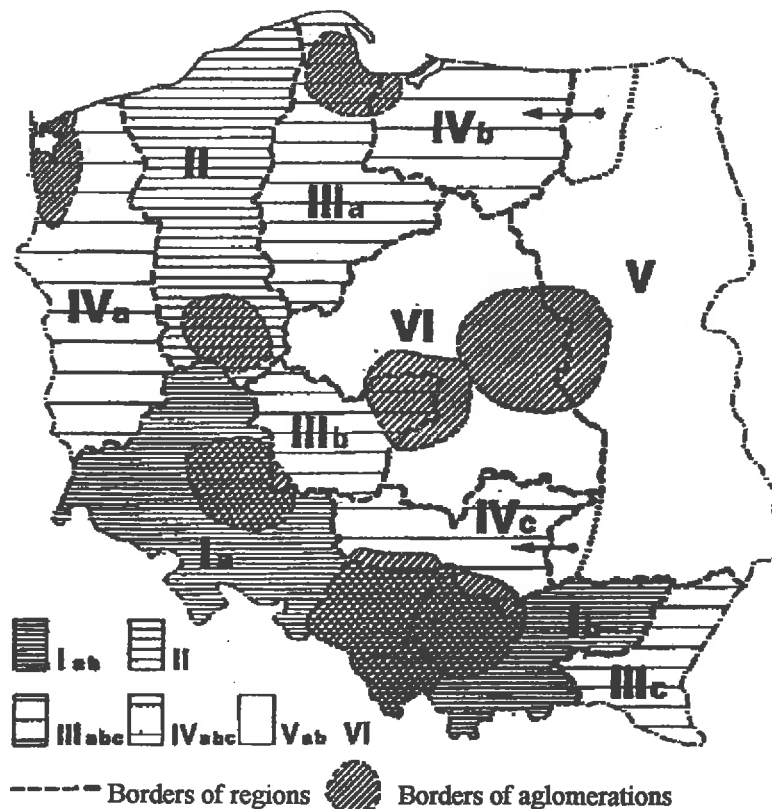
- the highest level of infrastructure management is in provinces with a high agricultural level from the Wielkopolska region such as: Leszno, Kalisz, Pilsko, and the most industrial and urban provinces as: Opole, Bielsko, Katowice, Wrocław.
- the infrastructure is the weakest in provinces of the central Poland, such as: Płock, Piotrków, Radom,
- provinces in eastern Poland have a low index, although they have a better organisation of infrastructure than in the central Poland.

Development of infrastructure is correlated with that of urbanisation, industrialisation, agriculture, system of settlements. The higher the "municipalisation" level the higher the infrastructure of rural areas.

The figure 3 presents 7 regions - from areas with the relatively highest infrastructure in Poland (region 1) to those with low and the lowest development. In the figure distinguished are:

- **I ab** - zone of southern provinces having the highest infrastructure level (e. g., Rzeszów province),
- **II** -group of provinces, such as: Poznań, Pilskie, Koszalin, Słupsk having a high and above the average infrastructure equipment,
- **III abc** - two groups of provinces of an average level, namely: Gdańsk, Bydgoszcz, and Toruń; Kalisz, Sieradz and Łódź,
- **IV abc** -western provinces (Szczecin, Gorzów, Zielona Góra) with a rather poor infrastructure, and 2 groups of provinces at a similar level: Elbląg-Olsztyn and Kielce-Częstochowa,
- **V ab VI** -dense and vast area of the eastern rural area and central Poland having the lowest and low level (slightly higher in Siedlce and Warsaw provinces),
- **agglomeration** connected with Warsaw, Łódź, Cracow provinces and The Upper Silesian district should be distinguished here. Also Gdańsk and Szczecin agglomerations have a different character.

Fig. 3 Differentiation in the infrastructure of rural areas.



Source: Siemiński J.L. 1992, Zróżnicowanie infrastruktury obszrów wiejskich, PAN IRWiR

2.5.5 Structural changes in infrastructure.

Reassessing the main problem of the rural areas there is lack of access to the water supply and sewage system. Only 5 per cent of villages had access to sewage system and only 29 per cent to a water supply system. These data differ very much in different parts of Poland. The development of basic infrastructure is strongly linked with that of urbanisation and industrialisation. The north-eastern provinces have the lowest level of basic infrastructure while in the provinces of Warsaw, Katowice and Gdansk, where only 10 per cent of the total population lives in rural areas, the development of infrastructure is rather good.

Before the changes in economic policies introduced since 1989 only about 8 per cent of villages did not have telephones and there were only two telephones owners per hundred inhabitants while in Western Europe were 40. The level of education and health care was lower than in urban areas. The roads network was satisfactory. Almost 92 per cent of all villages had asphalt roads.

The process of adjustment in basic rural infrastructure has been started after 1989. In spite of financial difficulties, there was considerable progress in technical infrastructure, particularly in commercial network that has been fully privatised. Although only a half of the rural service network has been privatised an improvement in this part of infrastructure has been noticed as well. Unfortunately, the most of social infrastructure like cultural or leisure centres have been closed down.

The ongoing privatisation of this sector is worth pointing out. The fastest is the privatisation in the trade sector. There is more difficult to adjust services. Greater income polarisation causes decreasing demand for some common services with simultaneous increase in demand for more expensive ones accessible only for smaller group of higher income households. The present outcome of the adjustment so far is that state and co-operative establishments have gone bankrupt and no new ones have been set up to replace them because of shortage of specialists, business premises and equity capital since the loan facilities are still very expensive and hardly accessible.

Technical and social infrastructure is still public property. Many institutions of universal character are still used by all the inhabitants while some others run service only to farmers. Since, in Polish condition, all the infrastructure was state owned, the management has remained considerably centralised up till now. There are various central, regional, district, local managing boards as well as various state, co-operative, agricultural associations and state farms owners. The division runs along branches and there is lack of management co-ordination. Different users often find it difficult to divide among themselves maintenance costs or to allocate indispensable investment contributions. Many infrastructure facilities do not bring direct income so the private investors do not take interest in expanding them. Decentralisation, strengthening local selfgovernment and creating new opportunities to take up financial obligations for public benefit have only just begun. The new law on these issues is being made. These processes do not take place everywhere at the same speed, so increasing regional differences can be observed.

2.6 Natural environment

The negative impact of agriculture on environment was widespread water and soil pollution. In the regions where big state farms were dominated the soil erosion and landscapes and soil degradation might occur. 28 per cent of the total losses caused by environmental degradation appear in agriculture. These include mainly reduction of crop yields, cost of liming and diminution of arable land. Although agriculture had its own share in environmental pollution, it is the industrial pollution that causes the bulk losses in agriculture and forestry.

Nowadays Polish agriculture uses 2-3 times less inorganic fertiliser and about 7 times pesticides than most of higher developed countries. In general the level of use of mineral and organic fertiliser is lower than the amount of nutrients uptake by plants. The share of agriculture in pollution of natural environment has been declined, but the industrial pollution in some regions of Poland is still a big problem. It is estimated that over 5 per cent of the total agricultural land is ecologically endangered by industrial pollution and a further 120 000 hectares of former arable land cannot be used since it contains excessively high level of industrial pollution. In spite of this the average Polish food products contains only 20-40 per cent of the maximum contaminating substances (heavy metals, nitrates, mycotoxins and other)

3. Structural changes in agriculture

3.1 Privatisation of state farms

In October 1991 was adopted the „*Law on Administration of State Treasury's Agricultural Real Estate*“. This law created an *Agricultural Property Agency of State Treasury* which is responsible for administration, restructuring and privatisation of the state's agricultural real estate. The real estate administered by the State Forest is explicitly excluded by the law. The real estate belonging to the State Treasury used by co-operative farms, individuals and non-state entities are not included and remain in their traditional use.

According to the law, the Agency was supposed to take over not only the state farms but their liabilities to the State Treasury as well. According to the law the first stage of *privatisation* (the taking over the state farms by the Agency) should have been finished by the end of 1993. The state property which the Agency should take over consists of:

- 3,7 million hectares of farmland belonging to 1 640 state farms
- 0,8 million hectares of farmland of the State Land Fund
- 321 000 apartments
- 1 253 agricultural and food processing plants
- 232 firms providing technical services
- 291 livestock breeding plants
- 401 other production plants
- 393 social, cultural and sport institutions

Apart from the value of the land, the total net value of the fixed assets that have been taken over by the Agency amounted to over US\$3 billion (\$900 per hectare). The role of the Agency in Polish agriculture is more significant than any other institution, even under the previous centrally planned system.

The second stage of *privatisation* means restructuring and privatisation. In order to achieve the main goal of restructuring and privatisation, the Agency has been managing the state farms and their assets mainly through:

- the sale of assets in the form of an open tender;
- the leasing out to private legal entities or individual in exchange for an agreed rent;
- the transfer of the assets to a shareholding company;
- the establishment of a management or administration contract, for a specified period only, when any of the previous alternatives is not feasible.

By the end of April 1994 the Agency had handled the farmland taken over as shown below:

	Hectares ('000)	Per cent
Sale	82,2	2
Lease	1275,8	33
Transfer to Church, State Forest, National Parks	9,5	0,2
Management contracts	2057,6	54
Administration contracts	158,1	4
Other	257,7	6,8
TOTAL	3840,90	100,00

The figures reflect the difficulties in privatising such large amounts of lands and assets within a short period of time. Most of the land sold was bought by private farmers. Land prices ranged from 284 to 853 US\$ per hectare. However, the sales of land are relatively low despite favourable conditions offered by the Agency. The main reasons for such situation are the lack of capital, difficult agricultural situation and the lack of reprivatisation law. Concerning the apartments taken over by the Agency with the state farm, only 17 per cent of the total has so far been sold.

From the economic point of view, there is no any reason to privatise the state farms only through selling. The same economic efficiency can be obtained through leasing when the tenancy conditions give the proper incentive and security to the tenant. These conditions have also determined on the basis of an open tender. Agency may decide to set aside some farmland or to use it for afforestation. Agency may also transfer former state farm real estate and assets to the local authorities to be used in local infrastructure investments.

More frequently leasing agreements have been used in privatisation process. These agreements made for 10 years with a prolongation clause for a further 20 years have been concluded mainly with enterprises created by state farm employees and other enterprises. The rent at the leasing tender has been fixed in wheat equivalents ranging from 0,15 to 0,5 tonnes of wheat per hectare of land leased.

Applying the Privatisation Law without ratification of the Reprivatisation Law has led to the cautious application of the privatisation programme. Apart from the farmland the assets ownership relations are also not always clear and may be another problem contributing to the slow rate of privatisation.

The privatisation process may not have a large impact on increasing the acreage of existing, rather small, private farms. The current trends suggest that only 240 000 family farms will, on average, expand their size by 3,5 hectares, mainly by leasing. There are two main reasons responsible for such situation:

- most of land being offered for sale or leasing is located in northern and western parts of Poland while small private farms are concentrated in southern and central Poland;
- private farmers potentially interested in buying the land offered do not have the financial means, or the technical capacity to manage big plots

However the Agency expects 4 200 new private farms with an average size of 600 hectares to be established by leasing about 2,6 million hectares. By the end of 1995 3,4 million hectares, 75% of the Agency's property will be leased, 234 000 hectares (5%) will be sold, 445 000 hectares (10%) will be under administration, and 300 000 hectares (7%) will be left fallow or assigned to afforestation.

3.2 Reprivatisation

Lack of any law covering reprivatisation problem (to return land unlawfully expropriated in 1944) is one of the factor which slow down the privatisation process. In the currently being redraft legislation there is proposed a combination of three options of reprivatisation process:

- the restitution of original property;
- the restitution of substitute land;
- the assignment of reprivatisation vouchers

The compensation may obtain the original owners and their heirs, and the people who were entitled to property at the time of expropriation. No compensation can be expected for loss of profits coming from expropriated land. Agricultural land used for research, managed by National Parks and forest plots which are larger than 25 hectares will be excluded from reprivatisation.

The land for reprivatisation (1,4 million hectares) will come from Agricultural Property Agency. Moreover 600 000 hectares of forest controlled by the State Forest will be devoted for reprivatisation. To govern reprivatisation land and forest a special Fund will be created.

3.3 Changes in agricultural co-operatives

The changes in organisation and operation of the co-operative movement started in January 1990 with the adoption of the Law on Co-operatives. This law made possible the returning to the principles of co-operatives movement through liquidation of all co-operative unions, restoring full democratic independence with obligatory new elections in all primary co-operatives, and changing the legal nature and competencies of the Supreme Co-operative Council which is supposed to be a voluntary association of primary co-operatives.

However, after liquidation of central and co-operative unions, the primary co-operatives faced serious problem which caused their disintegration. In majority of agricultural co-operatives arised conflict of interests between their farmers members and their employees who were also members.

The second stage in the co-operative restructuring concerned the co-operative ownership or the privatisation of co-operative property. This step has been put in motion by the Revalorisation Act of 30 August 1991 which gave to almost all of co-operatives the right to revalue members' shares through transferring not more than half of their reserve funds to their share fund.

These two laws had the tremendous impact on changes in agricultural production co-operatives. In 1988, 2 086 agricultural production co-operatives had 177 000 members and were employing 2 700 people. They were cultivating 679 000 hectares or 2,8 per cent of total arable land. Four years later, in 1992, there were 2 190 co-operatives with 87 000 members and 1400 employees. According to the new law, some co-operatives have divided the co-operatives property amongst their members. It is expected that in the future most of co-operatives will liquidate their assets and will function as voluntary multi-family farms which will be able to enjoy the benefits of large scale production.

4. Evaluation of Land Use and Systems of Agriculture Production in Skierbieszów Community (Applying ASD)

4.1 General Characteristics of Zamojski Region

The natural conditions for agriculture in Zamojski Voivodeship are ranked among the best in Poland. If we measure it by the quality of agricultural space, this region will be second-best in Poland. Agricultural land occupies 75% of total land area, of which 60% is arable land of a very good quality. Ninety-one Percent of land belongs to I-IV soil bonitation classes. Ill-managed water resources and topographic conditions cause severe erosion of about 60% of the land in many communities.

Cereals, mainly wheat, dominate in the structure of crop production. The voivodeship (district) has the biggest share in wheat production (6%) throughout Poland. Other important crops are sugar beets (8%), rape, potatoes, tobacco (18%), and hemp (16%). The region is also highly specialised in fibre crops and herbs.

However, having superb agro-climatic conditions, the region is lacking in proper agrarian structure, as well as in technical and social infrastructure. The average farm size (5.9 ha) is below the country average (6.6 hectares). Moreover an average farm consists of 5 plots of about 1.8 ha each. The needs for basic technical infrastructure (tap water, sewage, gas networks, roads, telecommunication) are satisfied by 50%. The same problem exists with social infrastructure (education, health, culture).

The agri-processing industry is not strong enough to meet the needs of the region. There are 4 sugar plants (Klemensów, Strzyżów, Werbkowice, Woźuczyn) 3 fruit and vegetable processing plants, 1 oilseed processing plant, 2 breweries, and a few distilleries. The wood industry is represented by 5 furniture factories and a few sawmills.

The Zamojski region with its fragmented agrarian structure and dominant private sector is similar to many other regions in Poland. Thus, observed trends and resulting conclusions might be useful while analyzing other agricultural regions in Poland.

4.2 Characteristics of Skierbieszów Community

The Skierbieszów Community is situated in the South-Eastern Region of Poland, 20 kilometres North of Zamość and 80 kilometres South-East of Lublin. Lublin serves as the nearest center of agricultural education at the University level, with the Institute of Agricultural Sciences in Zamość being a part of Faculty (College) of Agriculture, Lublin Agricultural University.

A homestead type of housing is dominant in rural areas. Houses are generally of log type with in mediocre technical condition. Brick houses can be found in following localities: Skierbieszów, Dębowiec, Łaziska, Majdan Sierbieszowski, Sulmice, Zawoda and Kolonia Zrąb. Those places are also the biggest villages, in terms of the number of houses. The most densely populated villages are: Marcinówka, Drewniki, Sławęcín i Wysokie II.



Fig. 4 Map of Zamojski Voivodeship

4.2 .1 Natural conditions

The land surface of the Skierbieszów Community is of rolling-hilly type. The absolute elevations are between 190-311 metres above sea level. The highest point is in Dębowiec village. The relief has an adverse effect on cultivation and agronomic practices in crop production.

The dominating air masses over the community are of polar-marine and continental type. The mean, yearly temperature amounts to 7-7.5 degrees centigrade. The warmest months are July and August, with average temperature of 17.5-18 degrees C. The nonfrost period ranges from 155 to 165 days. The length of the growing season ranges from 200 to 210 days. The temperature influences the length of different development phases of plants.

The yearly precipitation is close to the national average, ranging between 600-650 millimeters. The highest rainfall occurs in summer months (July, about 100 mm). There are no natural water reservoirs in the community. There are some ponds and pools with the total area amounting to 13 hectares. Fishing ponds belong to the community and are leased to different users. The biggest and only natural waterway is Wolica river 24.3 kilometers long and width from 3 to 6 meters. Together with three other big streams, it collects water from the Northern part of the community. The network of streams (12 ha) is supplemented with open ditches (altogether 51 hectares).

The level of ground water depends on land relief and geological structure. On higher grounds water can be found below 20 metres. In the limestone stratum (20-100 metres beneath) a good quality drinking water can be found.

4.2 .2 Land use

The total area of Skierbieszów Community amounts to 13 917 hectares (2% of Zamojski District). Agricultural land makes 11 263 hectares (80.93% of the total area), woodland about 2001

hectares (14.38%), waters 76 hectares (0.55%), communication network - 271 ha (1.95%), settlements - 294 ha (2.11%), badlands and land not falling in to any specific category 12 ha (0.08%). Structure of land utilization indicates a typically agricultural character of the community.

From total area of 11 263 hectares of arable land in Skierbieszów Community 9 435 ha(83.8%)is in private farms, 1 238 hectares (11,0%)belong to State Land Fund (SLF), 172 ha (1.5%)are community grounds and 29 ha (0,3%) are administered by the Agricultural Agency of State Property (AASP). In comparison to 1987 the area of arable land in private farms has diminished by 5%. This was the outcome of land transfers to SLF, done by farmers who were eligible for pensions (land/pension swap). In the near future, SLF land resources shall be transferred to AASP.

Table 3. Land use in the community, compared with the district and country data

	Unit	Total area	Arable Land	Wood	Water	Roads	Settlements	Bad Land
Skierbieszów	1000 ha	13.9	11.3	2.0	0.076	0.27	0.29	0.01
Community	%	100.0	80.93	14.38	0.55	1.95	2.11	0.08
Zamojski	1000 ha	697.9	491.2	158.8	6.02	19.2	17.9	4.8
District	%	100.0	70.37	22.76	0.86	2.76	2.56	0.69
Poland	1000 ha	31269	18741	890.6	828	994	971	505
	%	100	59.93	28.48	2.65	3.11	3.11	1.62

4.2.3 Population

Population data has been collected through questionnaire surveys conducted in April 1994, which covered over 70% of the inhabitants.

There are 6.7 thousand people in the Skierbieszów Community. They live in 30 hamlets i.e. over 200 people live (on the average) in one village. It is 1/3 below the average in Zamojski district, which means that the settlement network in this community is more dispersed.

The level of education in the community is lower than that of the urban population in Zamojski District, but similar to the village population in this region. University graduates form only 1.32%, with uncompleted university education 1.32%, high school 11.66%, uncompleted high school 1.55%, vocational 21.77%, elementary 51.18%, uncompleted elementary 9.65%. About 1% of people has no education at all.

The dominant educational line is agronomy - 27.38%, Other important fields are technical - 22.87%, high school 8.86%, economic 8.37%, construction and para-medics(nurses) - 5.15% each.

Skierbieszów Community is a typical agricultural community with prevalence of agricultural employment. 85% of economically active population work in agriculture.

A characteristic trait of demographic processes in the community is the depopulation of rural areas. For the last 20 years, up till 1989 - the average yearly rate of population decrease amounted to 1%, in 1989-1994 it increased to 1.5%. This is mainly due to the consequence of aging of the population as well as migration processes. The mentioned phenomena are characteristic for less-favored areas. Regions with unfavorable agrarian structure and depopulation are agriculturally neglected.

In the Zamojski region, one observes in recent years a halt in migration from rural areas. It is a phenomenon caused by economic recession, decline in employment and diminishing of labour opportunities outside agriculture, which caused limitations in "shuttle migration", and return to the villages of population in production age.

There appeared a limitation in the off-agriculture labour market in the community, its neighborhood, as well as in the city of Zamość. The reasons were a closing down of many plants and a decrease in employment of part-time farmers. Specially drastic was the decline in employment of young people. Young people after school often can not find employment outside agriculture. Part of them live on welfare and when it expires are supported by their families.

The economic indicator is measured by the number of people in non-production age (up to 18 years and over 60) in relation to the number of people in production age (between 18-60 years) amounts to 117 per 100 persons. On the trends that were already existing in the 1980s have accumulated new phenomena, typical for the 1990s thus, some of the previous tendencies gained strength, other were reversed.

Characteristic is the process of aging of the rural population, which is a trait of many agricultural regions in Poland. In Zamojski district, this trend has been observed for many years. In the Skierbieszów Community about 28.6% of the population are over 60, well above the country and region average. In the previous years it helped to decrease the rural overpopulation. However, in some communities this process was so fast that there was even lack of labour, which hampered the further development of agriculture.

The age structure of farmers in Skierbieszów region was as follows: 29% over 60; 40% between 45-60 years and 31% below 44 years. Women operated 21% of the farms, 43% of them were over 60.

Most of the population derives their income from agriculture with the second major group being pensioners. In the Zamojski district, about 30% of the rural population work outside agriculture.

In the last years there was an acceleration of generations' exchange in the farms all over Poland, including Zamojski region as well as Skierbieszów Community. It resulted in rejuvenation of labour resources in private farming, which has been both the effects of generations' exchange and losing jobs by part-time farmers (difficulties in urban labour market). The number of pensioners has increased.

In 1989-1992, farmers transferred to the successors as much land as in the previous 10 years. This process might be of transitional character. It is an effect of the past, when many farmers eligible to pensions did not transfer land to successors.

Liberalized regulations on land transfers, ensure income for farmers, which with the declining agricultural incomes is considered as a main source of income. There occurs also a specific phenomenon, that farmers officially transfer land to successors and receive pensions, but practically farm themselves.

One may also consider the "quality" of farmers working in private farming, having in mind the percentage (28.9) of elderly farmers. In reality their potential is small, and they can not be considered in the restructuring processes. About 41% of population in the community (34% of men and 48% of women) lived on incomes that were derived neither from agriculture or off-farm official employment. Most of them were pensioners. The most active group in the community are

people among 18–44 years of age, which account for less than one thousand inhabitants. With about 1.5 thousand farms in the community, one has the picture of necessary changes.

4.2 .4 Agriculture

4.2 .4 .1 - soils and structure of agricultural land

Very good and good soils are found in the Skierbieszów community. The majority of good soils are in Dębowiec, Drewniki, Sulmice and Wiszenki. The best I class soils and II class black soils appear in Huszczka Duża, Huszczka Mała, Łaziska, Hłowiec, Hajowniki. Those soils possess optimum water and other conditions from the environmental standpoint. Totally good and very good soils make 70% of agricultural land in the community.

Table 4. The percentage of soils in classes of agricultural land.

Soil class	% share	Characteristics
I and II	9.4	very good
III	60.6	good
IV	26.0	medium
V	2.5	poor
VI	1.4	very poor

In the agricultural structure, arable land constitutes 76.2% of the total land area. The second major group (11.3%) are permanent meadows and pastures. In Skierbieszów, Kalinówka, Zawoda, Dębowiec and Kol. Skierbieszów villages a majority of the farms, permanent meadows and pastures form over 20% of land. The share of orchards is small (0.9%) and they are concentrated in Skierbieszów, Dębowiec, Kol. Wiszenki, Wiszenki, Lipina Stara and Podwysokie. It is the result of high labour and capital intensity of this production line, and the unstable fruit market. The share of badlands is about 1.34%.

The Skierbieszów Community has a high index of agricultural area bonitation. This synthetic indicator comprises both land quality, agrilclimate, water relations, relief - it amounts to 89.6 points with the average for the region 85.3 and country average 66.6 points.

4.2 .4 .2 -farm structure

There are 2300 households, including 2017 farms, grouped in 30 villages. The majority of farms is small. Up to 5 hectares form 54.4% of the total number of farms. The average farm size in the community is 5.4 ha, with 4.8 ha of agriculture land.

Table 5. Farm structure of private farms in Skierbieszów Community and in Poland

Area	1 No	2 %	3 No	4 %	5 No	6 %	6 %
1-2 ha	165	9.3	453	22.4	88	8.3	17.8
2-5 ha	502	18.4	646	32	247	23.3	35.3

5-7 ha	392	22.2	304	15.1	196	18.5	14.8
7-10	292	22.1	329	16.4	151	23.7	14.8
10-15	269	15.2	224	11.1	203	19.2	11.3
> 15	49	2.8	61	3.0	74	7.0	6.0
Total	1770	100.0	2017	100.0	1059	100.0	100.0

Remarks: 1-2 according to 1986 census

3-4 according to tax declarations

5-6 according to questionnaires

7- country level

4.2.4.3 - crop structure

Crop structure is dominated by cereals (74%). Wheat constitutes 46%, barley 7.3%, rye 4.6%, oats 3.4% and triticale 1.1%. Potatoes are the second major crop (9.5%) Industrial plants constitute 8.2%, (dominated by sugar beets) No vegetables are produced.

Table 6. Structure of crop production in Skierbieszów Community

Farm Area (ha)	Cereals	Potato	Industry	Fodder	Other	Grass-lands
1-2	0.81	1.29	-	-	-	-
2-5	10.34	19.35	2.85	11.25	28.57	6.21
5-7	9.64	9.03	12.36	10.31	13.57	13.89
7-10	24.92	25.48	17.11	14.06	17.86	24.98
10-15	40.03	33.24	38.97	61.76	29.29	39.94
>15	14.26	11.61	28.71	2.62	5.71	14.98
Total	100	100	100	100	100	100

4.2.4.4 - animal production

Animal production is the second major production line in the Skierbieszów community, dominated by beef and hogs production. Sheep and horses are also raised. The number of animals per farm is lower, than in the region and amounts to 41.4 animals per hundred hectares for cattle and 63.6 animals for hogs. The respective figures for the region are 50.6 and 88.1 As far as animal numbers are concerned, the situation in the community is different. The lowest numbers in cattle are in Marcinówka (7 heads/100 hectares of agricultural land, the highest in Sławęcín (80 heads/100 hectares). With hogs that disproportion is even higher from 7 heads/100 hectares in Marcinówka to 120 heads/100 hectares in Kolonia Skierbieszów.

Most of the farms in the community are diversified. There are only few farms that specialize in animal production. In the Zawoda village, two farms produce 100 and 80 hogs respectively. A

similar farm is in Skierbieszow community. In Skierbieszów and Sulmice, two farms paralelly produce hogs and milk.

Cattle is dominated by the black-white breed crossed with HF. The average milk yield is 2847 litters per cow and is 95 litters below country average. In hog production the dominant breed is the Polish white.

4.2 .5 Labour market

The situation in the labour market is influenced by changes that occurred in Poland after 1989, with the beginning of the transformation period to market economy and past trends. The latter have been processes with long origin, influenced by both demographic situation and the local and general socio-economic conditions.

The rate of agricultural employment in the community is high. In 1988, 80.1% of total population in production age worked in agriculture. In 1994 this figure rose to 85.4% and is still growing. This is a more agricultural community than the Polish average. For the whole country, the quoted figure is 29%. In some regions, it exceeds 50%. Zamojski and Siedlecki districts exceed the rate of 60%.

4.2 .5 .1 - sources of income and subsistence

Presently in the Skierbieszów Community employment is the source of income for 46.6% of inhabitants, 41% has other sources of income, and 12.4% (over 14 year of age) is sustained by other family members. As concerns gender, 48.0% women get income from nonemployment sources; 40.1% from employment. Among men, employment is the basic source of income for 53.5%; other sources for 33.7%.

4.2 .5 .2 - unemployment

As in other regions of the country, unemployment also hit the Skierbieszów community in recent years. According to the data of Regional Labour Office in Zamość in mid 1994, in Skierbieszów community there had been registered 344 unemployed. By the end of 1991, the number of unemployed amounted to 310 persons. This rose through 1992 to 351 persons. Since 1992 the number of unemployed did not change. However, in this survey we did not want to limit ourselves only to the Labour Office data. We asked the inhabitants a series of questions linked with unemployment. We have also applied a different definition of unemployment. Asking about unemployment, we did not consider as criteria, whether someone is registered in the office or not. We asked instead, whether a given person has worked more than 1 hour a week as a hired hand on the farm, as a helping family member, on ones own account; whether he or she was ready to accept a job. Only such person was considered as unemployed.

4.2.5.3 - hidden unemployment

In the course of going through the questionnaire, a person operating the farm (head of family) was asked, whether he or she can do without the help of a family member completely or partly, without losses to the performance of the farm.

According to findings such persons of which work, the farmers could completely resign were 5.3% of the total employed in family farms, partly - 7.4%, the majority of this group (over 2/3) were formed by women. This number makes 12.7% of the total employment. This indicator is lower when compared with the whole region, mainly because there is a lot of elderly people in the community, the technical level of the farms is also not very high, thus subjective feeling about the need for additional hands on the farms.

Confronting the numbers on both forms of unemployment with the employment possibilities on farms and in the community (off-agriculture) indicates the need for economic activities in the region in order to create new employment opportunities.

4.2.6 Infrastructure

The network of public roads (134.7 kilometers) is sufficient. State roads (14.7km) have hard surface. However, their quality is poor. Regional roads have the length of 50.8 kilometers. Among three categories of state, district and community roads the most uncared for are community roads that make 37.75 of the network. Those are mainly local roads ending in the community.

All homesteads in the community have electricity. Much worse situation is with telephones. In Skierbieszów there are two automatic telephone exchanges with the capacity of 200 numbers. Moreover in the village of Dębowiec there is a telephone exchange with 32 numbers. Most of the telephones are in the seat of the community. Elsewhere, each village has at least one telephone.

Of 1464 homesteads, 798 are supplied with water from wells, 588 from collective waterways and 164 from other sources. Totally from 6 collective waterways 40% of homesteads is supplied. Water in the majority of waterways does not demand utilization. The sewage network in the community is limited to 300 hundred meters in Skierbieszów. In the community as a whole only 29% of homesteads have sewage tanks from which sewage are taken to the sewage sump

There are 5 eightform elementary schools with fourform branches. There is also an evening vocational school, which is a branch of the Group of agricultural Schools in Zamość. In Skierbieszów there is a kindergarten for over 80 children. The social infrastructure is completed by: Community Health Center in Skierbieszów and private pharmacy. There is also a Community cultural center and Sports Club "Ostoja".

The commercial and catering activity in the community is performed in 70% by private firms. The rest is provided by cooperatives, including, Community Cooperative "Samopomoc-Chłopska, Handicap Cooperative, Horticulture Cooperative and Main Technical Organization. Altogether there are 24 general and 8 grocery shops, 7 of them are located in Skierbieszów. In the whole community, there is only one newspaper stand.

Services are provided by private entities, part of them unofficially. The network of official services is pretty scarce. The most commonly represented are construction services - 34, transport ones - 9. In many places (Huszczka Duża, Iłowiec, Lipinia Stara, Marcinówka, Podchuszcza, Suchodębie, Szorcówka, Wysokie II and Zabytów) there are no services.

There are 19 firemen units, including 4 with cars and 14 equipped with motor pumps. This organization associates 400 firefighters.

Inhabitants have stressed in the questionnaire the shortages in social and technical infrastructure. The most urgent needs are construction and repairs of roads in 14 out of 30 places. In Dębowiec, Łaziska, Wiszenki and Majdan Skierbieszowski, there is a need to expand and redecorate schools. In Skierbieszów it is necessary to build the health center, fruit and vegetable processing plant and meat processing firm. In the whole of the Community there are shortages in telecommunication, gasification, services and water network.

4.3 Economic analysis of family farms in Skierbieszów Community (Applying ASD)

4.3 .1 Type of information required

This report is based on two sources of information:

- field data obtained from farmers and their families,
- secondary information from local government, extension service and general statistics.

The farms were chosen as the most representative for established zones with taken under account differentiation of farm size and its area per one worker. Usually the information did not come from accounting books because they had not kept records.

The main source of information was interviews made with farmers and villages habitants. For that reason, our knowledge is not so precise. The farmers usually remembered the base date about farms i.e. area and structure of crops, yields, number of livestock, number and type of machinery. Their remembrance about the level of inputs and outputs, product and agriculture means prices, agricultural and non agricultural incomes were less precise.

4.3 .2 Zoning

The base for zoning in the Skierbieszów community is differentiation of infrastructure development i.e. the level of communication network (mainly roads). The existing infrastructure does not fully satisfy the needs of inhabitants. Moreover, the saturation of individual villages with services (both production and social) has been considered as the differentiating element. When isolating 3 zones, a differentiation in infrastructure equipment that is significant both for agricultural production and the life standards of rural population has been considered (fig.1) The analysis shows, that those elements differentiated rural community and farms. Three zones might be individualized (ap 3) as follows:

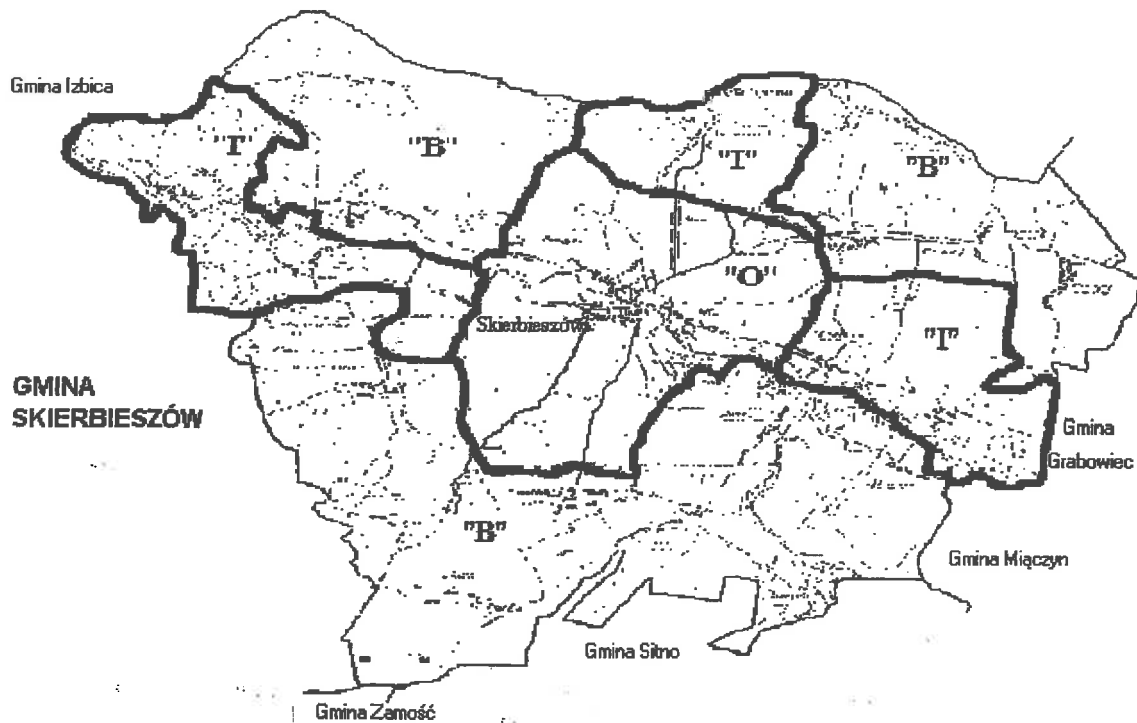


Fig. 5 Map of Skierbieszów Community

- the region of the village center and its environment, marked as "O"

"O" zone - community center is situated in the neighbourhood of the administrative and economic center of the community. The economic functions of the center exceed the community limits. There is a hard surface road from Zamość to Chełm and a district road from Hrubieszów through Krasnystaw to the border crossing in Zosin(Ukraina).

There are 392 households, from which 81.9% is supplied from water-supply installations. This index includes 62.2% supplied from collective waterways and 19.7% from on farm waterways. Some farms have sewage system and the waste flows to newly built sewage-treatment plant in the village of Skierbieszów. The whole zone is electrified. In the whole community, as well as in the zone, there is no gas network. "O" zone has 198 telephone numbers.

Skierbieszów is the seat of Community Cooperative, Cooperative Bank and PZZ grain elevators. Until quite lately there were also operating other institutions (various types of production and service cooperatives, garages, catering facilities). There are 5 procurement points (for grains, sugar-beets, milk, flax, fruits and vegetables). In order to stimulate business activities, an Agency for Economic Development (1994) has been established by the Cooperative Bank nad 6 private firms. There is also an Association of Mutual Insurance "Agro" as the branch office of the Warsaw firm. The network of 12 grocery and general stores is quite sufficient for local needs.

The social infrastructure is represented by the health center, post office, pharmacy, firemen unit, 8-form elementary school and evening vocational secondary school. The bus network is quite good.

- villages situated along main roads "I"

"I" zone - satisfactory infrastructure. Location along communication routes served as criterium for zoning. However this zone is much worse equipped in technical and social infrastructure. From 326 homesteads only 43.3% have access to collective or local waterways. Three elementary schools are the fourform type. The network of shops and service facilities is pretty scarce. However, in each village there is at least one grocery. It is quite enough considering that the average distance to Skierbieszów is 5-7 kilometres. Bus connections are quite convenient.

- villages remote from the center and main roads "B".

This is the zone with the poorest infrastructure combined with the biggest number of homesteads (746) grouped in 19 villages. All local roads end in the Village of Skierbieszów. The bus communication is available only a few times each day. The average distance to the community center is 10-12 kilometres. There is hardly any social infrastructure. In Łaziska village there is a grain procurement point. In some villages, there exists milk procurement points (7). The zone is fairly well equipped in waterways, with 65.8% of the farms having access to different types of waterways.

Table 7. Specification of villages in individual zones

Zone „O”	Zone „I”	Zone „B”
Sady (195) ¹ , [4] ²	Drewniki (71), [0]	Dębowiec (598), [40]
Skierbieszów Kolonia (232), [27]	Hajowniki (172), [3]	Dębowiec Kolonia (86), [6]
Skierbieszów (1278), [198]	Kalinówka (213), [7]	Huszczka Duża (142), [7]
Zawoda (261), [15]	Lipina Nowa (167), [9]	Huszczka Mała (120), [6]
	Majdan Skierbieszowski (267), [7]	Howiec (273), [1]
	Podhuszczka (133), [15]	Lipina Stara (191), [8]
	Zabytów (158), [3]	Łaziska (386), [19]
		Marcinówka (29), [0]
		Osiczyna (178), [11]
		Podwysokie (182), [2]
		Sławęcín (59), [1]
		Sulmice (329), [6]
		Suchodębie (68), [0]
		Szorcówka (85), [1]
		Wiszenki Kolonia (147), [3]
		Wiszenki (99), [10]
		Wysokie I (171), [10]
		Wysokie II (79), [8]

		Zrąb Kolonia (261), [15]
Łącznie (1966), [244]	Łącznie (1063), [44]	Łącznie (3483), [151]

1 - (...) - Number of inhabitants), 2 - [...] Number of unemployed

During the on spot visit distinct differences have been noticed concerning the level of economic development (the state of buildings, roads etc.). Especially low level has been stated in villages in zone "B". Differences between villages in zones "O" and "T" were much smaller.

In particular zones one may find farms inclined to crop or animal production, as well as more diversified ones. They are marked in the text with following symbols:

- plant - "R"
- animal - "Z",
- diversified - "W"

-off-farm economic activities in zones

When the market economy was introduced in 1989, the small labour market began to shrink. However new opportunities arose for private businesses. Business activities were undertaken by people that lost jobs and by those who wanted to increase their incomes. The most common lines were low-input services and petty trade. Often those activities were undertaken without proper examination of local needs, and without professional knowledge. It resulted in closing down many of the firms after only a few months of activity.

Table 8. Small business in Skierbieszów Community after 1989

	"O"zone	"T"zone	"B"zone	Other (1)	Total
Started	50	16	39	23	128
Stopped	15	7	14	10	46
Going on	35	9	25	13	82
includ. women	12	-	5	2	19
Services(2)	14	3	12	10	39
Petty trade (3)	17	5	12	2	36
handi-craft	3	-	-	1	4
Catering	1	1	1	-	3

1 - firms operated by non-community inhabitants

2 - also construction and medical services

3- dominated by traveling salesmen

4.3 .3 The unit of analysis

Different units of analysis might be employed in the survey, i.e. the whole village, its parts, as well as individual rural families. In this research - family has been assumed - as the basic unit for analysis. In the Polish conditions, the family as a whole performs its production role, the farm is both the place for living and consumption. Rural families were analyzed, in conjunction with the land/man ratio expressed in calculating income units. Details on the calculation methods will be presented later..

5.Reproduction threshold

After examination of economic situation in Agriculture of Skierbieszów community, as well as the standard of living - a level of income indispensable for coverage of all the living costs plus accumulation, has been determined (SRT - prices from early 1995). Simple reproduction threshold was estimated as an equivalent of half of the wage per nonagricultural worker, it is 600 \$ per one income equivalent person per year. The coefficients for the transformation in member equivalent were taken from FAO proposal and it is shown in table below:

Table 9 FAO coefficients of manpower units

age groups(years)	living and not working away	living outside and not working	living in household and working away	
			<6 months/year	>=6 month/year
0-8	0,25	0,50	-	-
9-14	0,50	1,00	-	-
15-65	1,00	1,00	0,50	0,25
66-70	0,50	-	-	-
>70	0,25	-	-	-

The level of agricultural income per one fully fit unit has been determined. In this case, the FAO proposed coefficients were not used. Instead the Polish indicators were used.. They are shown in the following table.

Table 10 Polish coefficients of manpower units

Age groups (years)	available manpower units
16-17	0,50
18-65 (man)	1,00
18-60 (woman)	1,00
66-70 (man)	0,40
61-70(woman)	0,40

Moreover, labour resources were diminished by 0.20 of calculation unit per each family member persons working outside of agriculture but still helping on the farm. These received indicators that were half of those shown in the table.

Apart of SRT Enlarged Reproduction Threshold (ERT) was estimated. Based on the Brazilian case solution, the ERT was estimated as equal to two times the calculated SRT. That means 1200\$ per one income equivalent person. The ERT represents the lower level of income which makes possible the investment in fixed assets. The SRT and ERT are estimated in the beginning of 1995. We can expect that their levels in next few years increase because of the general economic development in the country.

6. Typology and economic situation of the farms

6.1 Typology

According to the accepted methodology of choosing typical units for the surveyed region and isolated zones, a detailed income analysis 35 farms were used. According to the geographical situation in a given zone and a production line, these were as follows:

Table 11 Zones and production lines (types)

Zone	Production Lines		
	"R"	"Z"	"W"
"O"	OR	OZ	OW
"I"	IR	IZ	IW
"B"	BR	BZ	BW

From the whole group, one farm characteristic for a given zone and production zone has been selected. The farms were chosen on the basis of level of incomes (described in point 6)

Many traits and indicators were used in order to characterize farms:

- farm size (general and agricultural)
- sharing of permanent grassland
- quality of soils
- manpower resources
- size and kind of buildings
- number, kind and value of machines
- crop structure and yields
- animal groups, number of animals per farm, productivity
- fertilizing levels
- pesticide employment
- harvesting techniques

6.2 Economic situation of the farms

The basis for attaining different economic results is their production structure and profitability of particular lines. In order to calculate agricultural incomes on farms several economic categories were used, i.e.:

- gross product (GP), calculated as a product of output in each line and prices (production unit price),
- proportional costs (PC), containing all the costs which are effectively incurred by the producers for obtaining the final product, directly proportional to the amount of the production and which can be easily shared between different activities, i.e. seeds, fertilizers, pesticides, grain feed, gasoline.

- fixed costs (FC), the summary of costs which cannot be easily shared between different activities and which are not proportional to the production, i.e. taxes (T), rent (R), insurance for workers, buildings and equipment (I), depreciation (D), interest (In), hired fix manpower (M), electric power (E), repairing (Re).

- gross margin (GM), estimated for separated products in the following way:

$$GM = GP - PC$$

- net margin (NM), farm income, estimated as:

$$NM = \Sigma GM - FC$$

- non-farm income (NFI), received from work off the farm and inflows from socials: pensions, welfare, etc.

- total family income (TFI), counted as a sum of farm income and non-farm income:

$$TFI = NM + NFI$$

Utilizing presented economic categories many indicators have been calculated. The most important indices are:

- average gross product per equivalent worker,
- average gross product per hectare,
- average proportional cost per hectare,
- average gross margin per hectare of all agriculture products in these farms,
- average gross margin per equivalent income person,
- fixed costs per hectare, worker and equivalent income person,
- farm income per hectare, worker and equivalent income person,
- non-farm income per worker and equivalent income person,
- total income per worker and equivalent income person,
- relations between farm and non farm incomes.

The levels of farm income and non farm income for all investigated families per one equivalent income person are shown in figures 6 to 8.

More detailed information is presented in table 12.

Table 12 Income results in surveyed units

Describing data		Area of agricultural land (ha)						Off-farm income in \$		Total income in \$	
Number	Type	in farm	per one equivalent of unit income	per working unit	per farm	per one equivalent of unit income	per working unit	per family	per one equivalent of unit income	per family	per one equivalent of unit income
1	OR1	2,00	0,7	1,0	401	134	201	2500	833	2901	967
2	OR2	5,50	1,6	3,2	1061	303	624	2000	571	3061	874
3	OR3	11,15	4,0	9,3	1188	424	990	2250	804	3438	1228
4	OR4	15,30	5,6	7,7	4603	1674	2302	2500	909	7103	2583
5	OZ1	1,91	0,6	0,8	225	75	94	833	278	1058	353
6	OZ2	5,80	1,5	2,2	2245	561	864	2500	625	4745	1186
7	OZ3	11,57	3,9	8,3	4760	1587	3400	833	278	5593	1864

8	OZ4	15,37	5,1	12,8	5486	1829	4572	3000	1000	8486	2829
9	OW1	2,93	0,9	1,3	743	229	338	2500	769	3243	998
10	OW2	4,90	1,6	3,5	984	328	703	1250	417	2234	745
11	OW3	9,50	2,4	3,7	3000	750	1154	2000	500	5000	1250
12	OW4	17,00	6,8	12,1	3888	1555	2777	3083	1233	6971	2789
13	IR1	2,80	1,4	1,6	576	288	320	1250	625	1826	913
14	IR2	5,35	1,8	2,7	916	305	458	1250	417	2166	722
15	IR3	9,61	3,0	3,8	1985	611	794	833	256	2819	867
16	IZ1	2,36	0,7	1,4	550	169	324	2667	821	3217	990
17	IZ2	5,94	2,0	3,5	1183	394	696	1000	333	2183	728
18	IZ3	9,67	3,2	5,4	2360	787	1311	2833	944	5194	1731
19	IZ4	14,00	5,6	14,0	2599	1040	2599	2250	900	4849	1940
20	IW1	3,00	1,2	3,0	560	224	560	2000	800	2560	1024
21	IW2	4,68	1,9	4,7	1001	400	1001	2000	800	3001	1200
22	IW3	8,54	2,4	4,3	2864	818	1432	2250	643	5114	1461
23	IW4	13,00	4,3	5,4	3025	1008	1260	833	278	3858	1286
24	BR1	2,60	1,0	1,9	803	321	574	1000	400	1803	721
25	BR2	5,09	2,0	2,8	1766	706	981	2000	800	3766	1506
26	BR3	9,60	4,8	4,8	1555	778	778	1250	625	2805	1403
27	BR4	15,69	7,8	9,8	3132	1566	1957	833	417	3965	1983
28	BZ1	2,60	1,0	2,6	819	328	819	3000	1200	3819	1528
29	BZ2	4,94	2,0	4,1	1723	689	1436	2500	1000	4223	1689
30	BZ3	10,07	2,9	3,7	3668	1048	1358	2250	643	5918	1691
31	BZ4	14,06	5,6	7,4	3508	1403	1846	1000	400	4508	1803
32	BW1	3,10	1,0	6,2	670	206	1339	3000	923	3670	1129
33	BW2	5,80	1,7	2,1	1527	436	545	3250	929	4777	1365
34	BW3	10,11	3,4	6,7	2274	758	1516	833	278	3108	1036
35	BW4	15,70	4,5	7,9	4007	1145	2003	1000	286	5007	1430

Fig. 6 Level of reproduction in farms located in centre (O*)

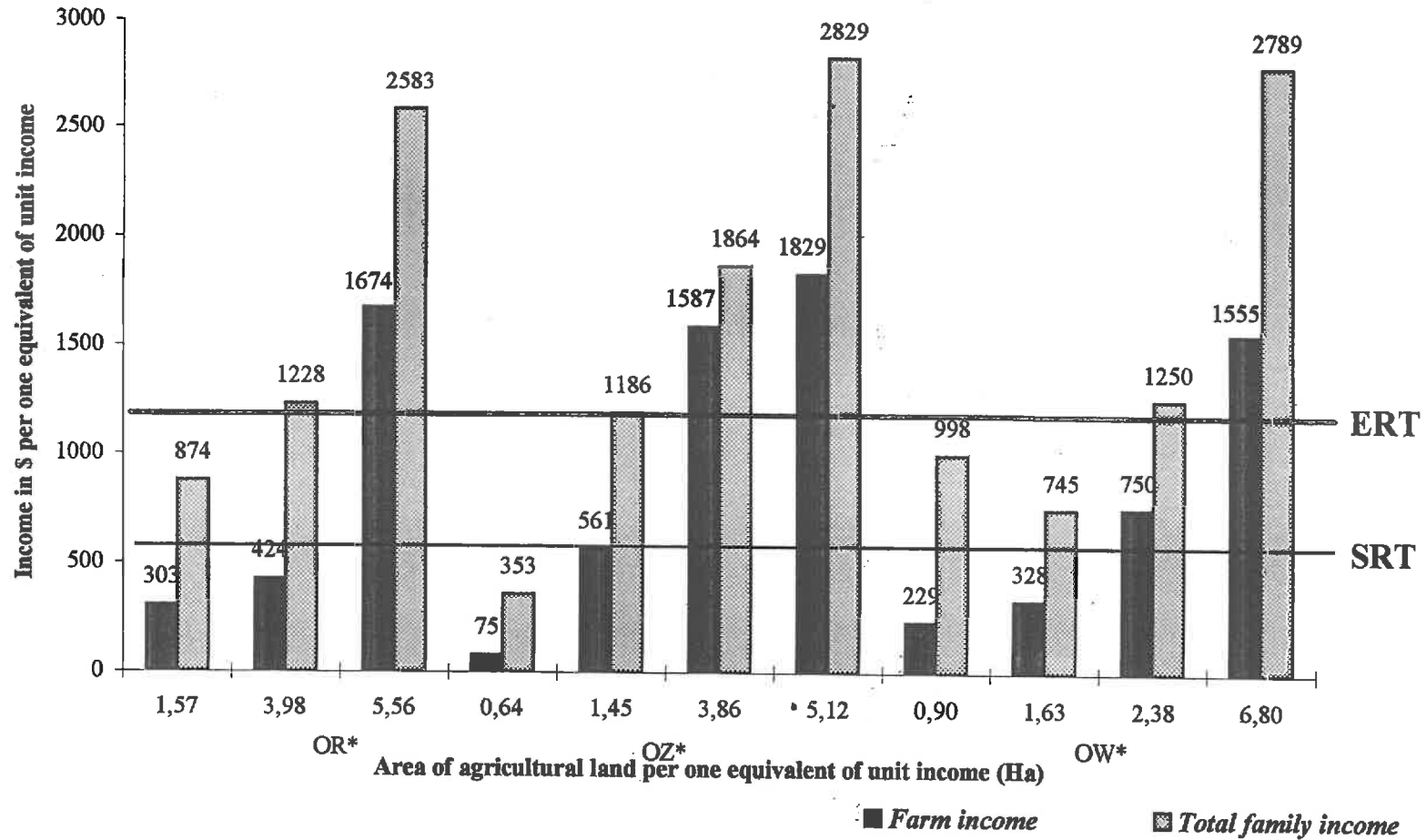


Fig. 7 Level of reproduction in farms located outside centre, with infrastructure (I*)

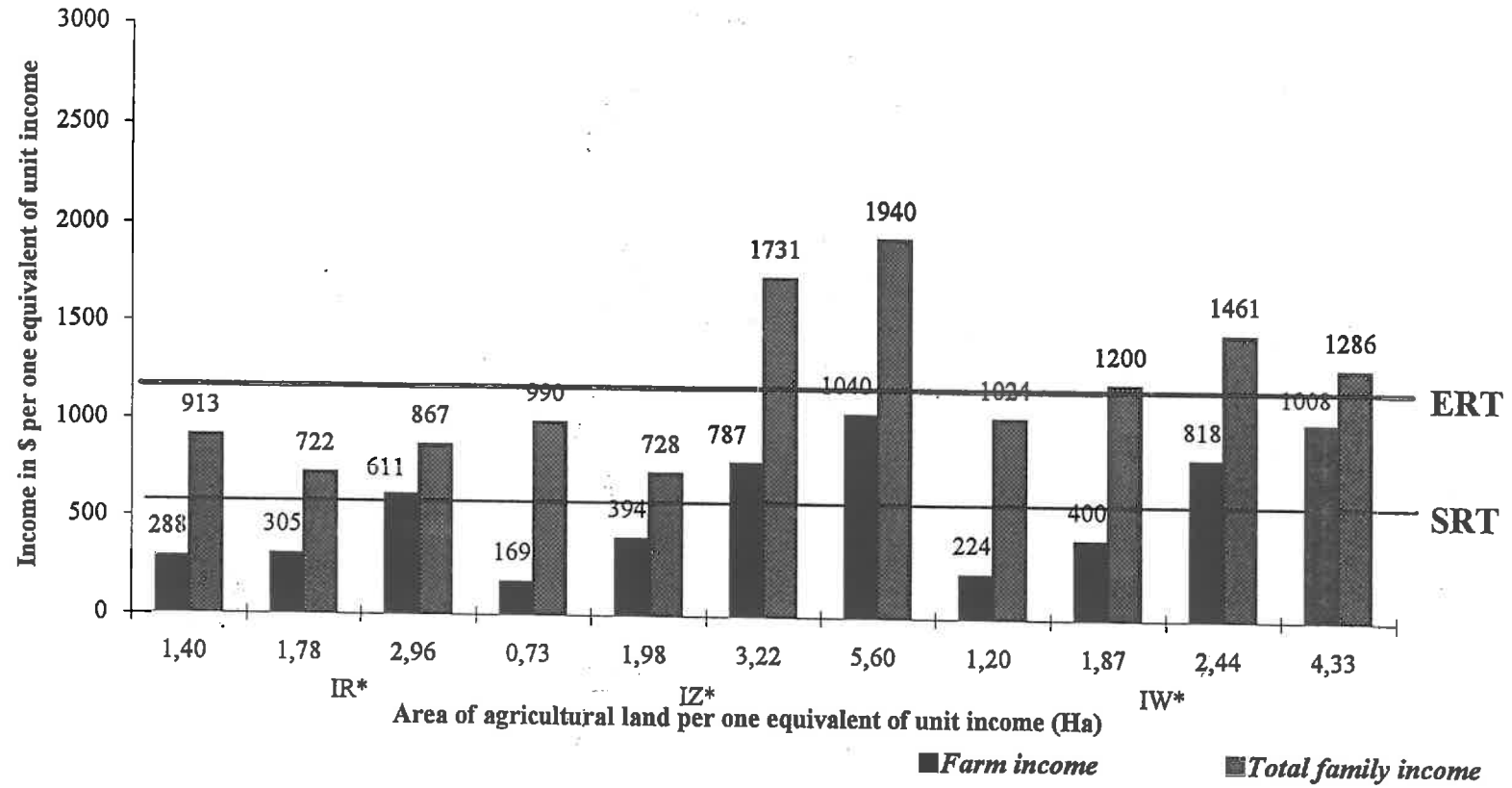
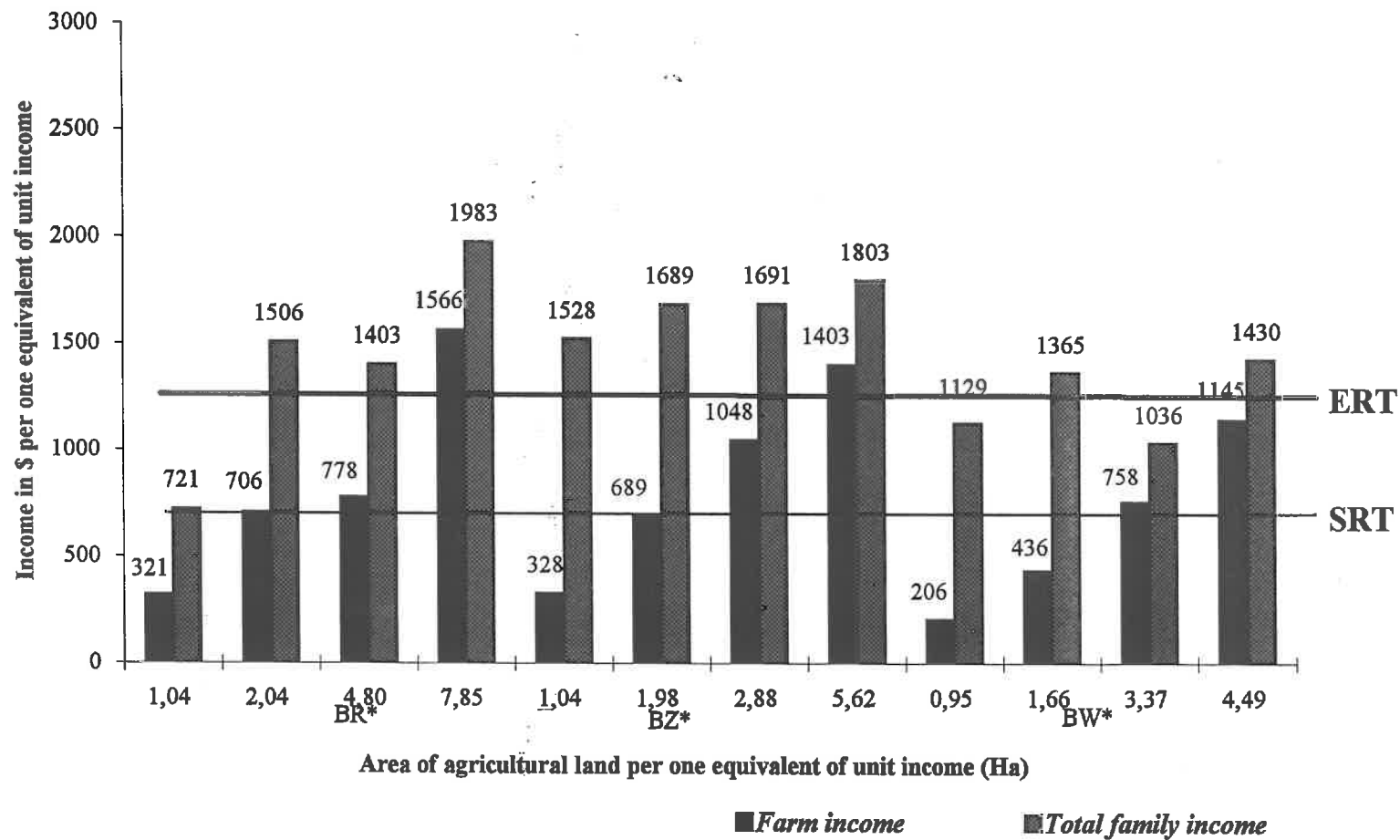


Fig. 8 Level of reproduction in farms located outside centre, without infrastructure (B*)



Results from the presented figures indicate that there is a considerable difference of the income levels (both in potential economic zones) according to production lines and in land/equivalent income person ratio. On the whole one may notice a distinct correlation between land/man ratio and the level of incomes both agricultural ones and the total family income. On many farms the basis for living were non-agricultural incomes, pensions and other social payments.

6.3 Systems of agricultural production

The systems of agricultural production, in each of previously separated farm types (Z, R, W) have been analyzed. The farms were divided into groups according to the level of agricultural income per person. In this way three groups have been singled out, i.e. below SRT, with incomes between SRT and ERT, and above ERT. The farms that received income below SRT per one equivalent of unit income were selected for further analysis. In the detailed analysis farms with highest income i.e. exceeding ERT were omitted because they were recognized as the developing ones, not requiring external support for survival. They do not have to increase their size. Farms with incomes between STR and ERT are able to generate enough income to support families. Moreover, many of those farms derive income from non-agricultural sources.

The most difficult situation is on the farms where incomes per equivalent unit income are below SRT. On those farms, families must make some shifts because they reached the poverty level. The shift may consist in taking jobs outside agriculture, however in the present Polish conditions, it is almost impossible especially in agricultural regions. The only alternatives are modifications on the farm. This may mean an increase in farm size, shifts in production structure, a change in technology. Incomes per equivalent unit income below SRT level in "R" type farm were obtained by 6 farms, in "Z" type by 5, in "W" type" also by 6 farms. Those farms are situated in all separated infrastural zones of Skierbieszów community.

For further detailed presentation, one farm typical for a given production line has been selected. They were marked as follows:

- 1R - crop farm
- 1Z - animal farm
- 1W - mixed farm, with different proportions, as well as significance of crop and animal production.

Organization of those farms together with capital assets and technologies are presented in a concise form in 3 descriptions.

6.3 .1 System "1R"

The area of a typical farm is 4 hectares. The soil has been cultivated for centuries. There is very little grassland. On arable land farmers sows mainly wheat, barley, sugar-beets, coarse grains. There is some tobacco and flax. Potatoes are cultivated for family consumption.

There are dairy cows, hogs and poultry (1 cow, two hogs and dozen or so of hens). The animal products are also for self-consumption. The seasonal milk surpluses are sold. Pigs are bought in the market. The cow is kept on farm fodder.

A low-powered tractor serves as a source of power. It is used for basic field operations and transportation. There are few tools and machines (plough, harrow, cultivator and some horse-drawn

machines adapted for the tractor). In some farms of this type there is a tractor drawn harvester-binder. If there is no binder, it can be either borrowed from the neighbour, or a combine (harvester-thresher) is rented.

Sugar beets are sown with seeders. Usually specialized (point) seeders are owned by a group of farmers. This is an only form of common use of farm machinery.

Farm buildings consist of a barn and a stable where all animals are kept. The size of the buildings corresponds to the production volume. There is no indoor mechanization. All work is done manually.

The farmer works outside the farm, in a plant nearby, his mother is a pensioner. Many farmers of this type (or their parents) receive

pension all agricultural pension. The farmer's wife takes care of the family and animals.

All basic field and barn operations are performed by the farmer on Saturdays and after work. Minor field jobs, weed control, etc. are done by woman and elder children. At harvest time, the farmer takes a leave from his job.

Feeding and milking is a woman's job. All this is done manually. The farmer job is disposal of manure.

The area of most profitable crops is limited by small labour resources, especially at peak seasons. This is the case with cultivation of sugar-beets and tobacco. The woman which is responsible for these, has also to take care of the household, animals included.

6.3 .2 System "1Z"

The farm area is about 3.5 hectares. The grassland amounts to more than 25% of agricultural land. Arable land is used as meadows, for coarse grains and sugar-beets. The plants are selected in order to supply enough fodder (sugar-beet leaves are used in winter as a cattle feed). Potatoes are cultivated only for family consumption.

The quality of grassland is low. It is marginal land that cannot be used for other purposes.

Due to the high percentage of grassland, there are two cows on the farm together with young livestock. There is poultry and 5 hogs, part of them is consumed on the farm, the rest sold.

A family consists of 5 persons: the farmer, his wife, mother-in-law, and two young children. Field operations are done by the farmer. The whole family helps with the harvest. Weed control is performed by women. In animal production the farmer feeds the cattle, prepares feed (boils potatoes), and removes manure. He also delivers milk to the collection depot. Milking and feeding pigs is done by the women. Children help in running cattle to the pastures.

There is a small tractor on the farm, with few machines. A horse wagon hooked to a tractor is used for transportation. Sometimes a combine is rented at harvest time.

The main source of income is milk. Additional money is made on sugar-beets and hogs.

In the summertime cattle are chained (at the pasture). In the winter the main fodder is hay or silage sugar-beet leaves). All stable work is manual. The stables are deep type. Animals are kept on straw. the main feeds for hogs are potatoes, kitchen trash, and cereal mash made on the farm. In

the summertime grass and weeds are used for feeding. The technical equipment on the farm is similar to system "1R". Manual work is dominant.

6.3 .3 System "1W"

The farm area is about 4 hectares. Meadows and pasture form about 20% of agricultural land. Main production lines are cereals and sugar-beets. As in the other systems, potatoes are only for self-consumption. Red clover is also grown on a small area.

There is 1 cow with young livestock, and 3-4 hogs, (or a sow with piglets) and poultry. Pigs for fattening are bought in the market.

The main sources of income are milk production, hogs and cereals (wheat).

The farm buildings and equipment are similar to system "1Z". The same concerns animal production.

The family consists of 5 persons: a farmer, his wife, his mother and two teen-age children. The farmer undertakes some add-jobs outside agriculture. The division of tasks is similar to other systems.

7. Economic analysis and evaluation of land and capital shortage for situation in each type of farm.

According to adopted research assumptions more detailed considerations concern only typical farms "plant", "animal" and "many-sided", which derive agricultural income per equivalent unit below the accepted SRT level i.e. 600 US dollars per annum. The farms with a per head income of 600 were ignored, because within this group farmers alone can develop their farms. The farmers with incomes below SRT are in the "emergency zone".

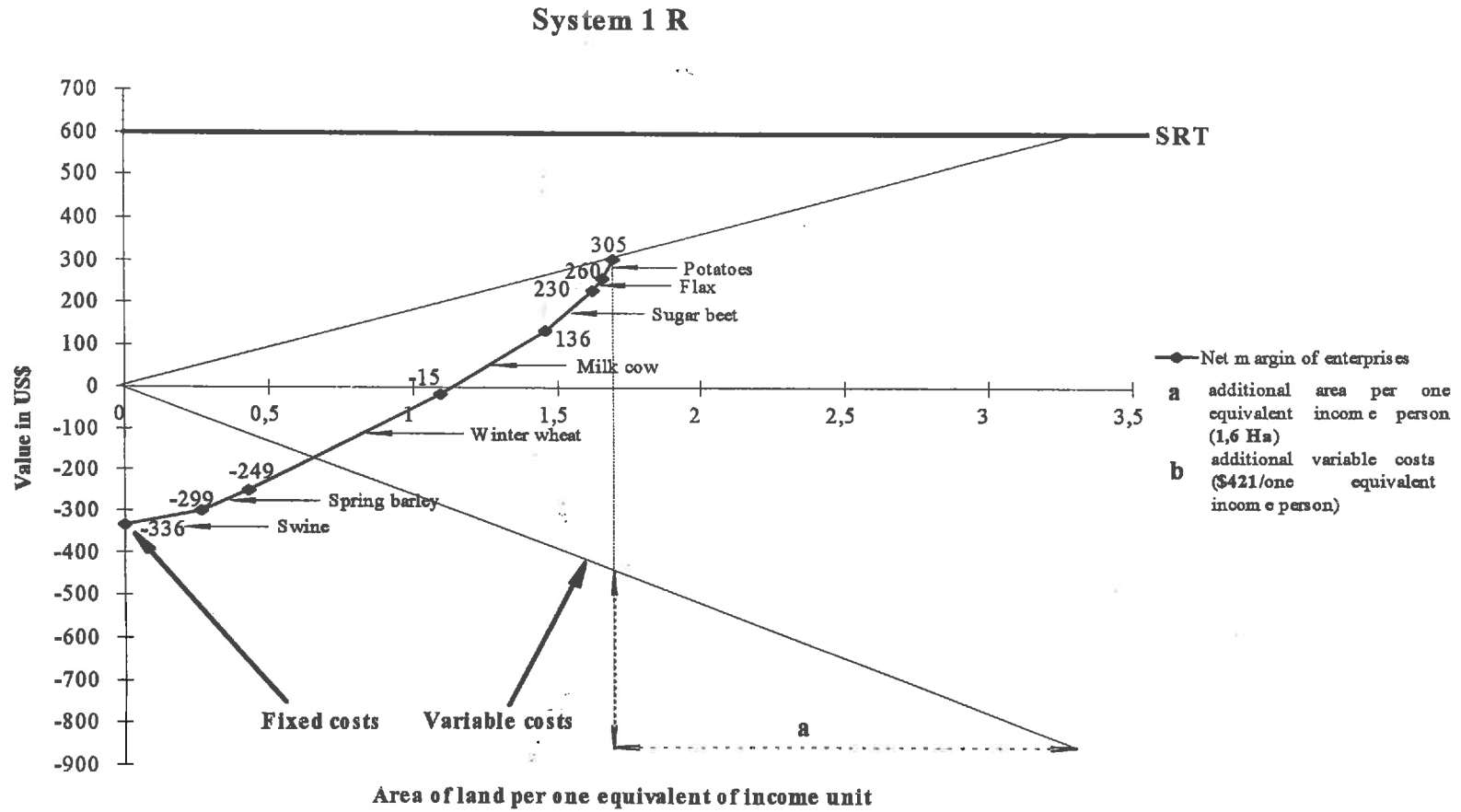
Figures 9-11 present the graphic analysis of augmentation of agricultural income, when introducing successive, (assuming gross margin as a criterion) more remunerative activities. The starting point in each typical farm are fixed costs, i.e. costs which must be born by the farm irrespective the type of production concerned. Introducing successive activities initially lowers the negative returns of the farm (covers part of the fixed costs), at a given moment all fixed costs are covered, and further activities increase the farm profit. This process goes on till all land resources are exhausted. Those cumulated returns describe the agricultural income of the farm.

All data presented in figures do not show values characteristic for the whole farm, but are calculated for one equivalent income unit. Such procedure results from the assumption, that the level of life of rural population is only in an undirect way resulting from the incomes of the family as a whole, and directly from incomes per family dependants (taking account of differentiation of income needs of different family members). When appraising and analysing those figures one should bear in mind that e.g. fixed costs, gross margin, variable costs does not concern the whole farm, but the dependent (equivalent unit)

7.1 System 1R

The performed calculations indicate that in a farm marked "1R", i.e. with predominance of plant production, the level of agricultural income was very low and amounted only to 305 dollars. It means about half of assumed SRT level. The rural family that operates a farm in this system ("1R") is not able to generate enough means for living without external "feeding". The family members must take jobs outside agriculture or to complement the income with budgetary (allowances etc.) or parabudgetary (pensions).

Fig. 9 System 1 R



In the analysed farm non-farm incomes made 137% in relation to agricultural incomes. It allowed a family to exceed the SRT level by 122 dollars per one equivalent income person.

The non-farm incomes do not however seem to be permanent. It means, that the existence of the family, and especially its standard of life is threatened by the potential loss of external incomes. To stabilize the income situation of the family it shall be essential to stabilize the sole agricultural income on SRT level.

The detailed graphic analysis, allowing to determine minimum capital needs for purchase of working assets and the scale of necessary increase of acreage per equivalent unit necessary to attain SRT income level is shown in figure 6.

Fixed costs on the farm amounted to 336 dollars. Introduction of successive (next in turn) activities to the extent that exists in the real farm and with the actual level of gross margin allows to cover fixed costs with the sown area of 1.2 hectares. There is 1.69 hectares of land per one person. Full utilization of land on this farm allowed to attain income of 305 dollars per person.

Assuming constant technology and production structure, as well as identical unitary price/cost ratio of different activities one may extrapolate, that minimum farm needs in relation to one equivalent person necessary to attain level equal to SRT are:

- a) in working capital - 421 dollars/
- b) purchase or additional lease of land - 1.6 hectares.

Those are crude values. In practice, one may expect, that capital and land needs shall be higher, due to unavoidable increase in fixed costs, because of tax increases (in Poland tax is conditioned by acreage). Moreover, with considerable changes in land area farmers might be also forced to replenish the number of machinery and technical facilities. There is no such a need in the analysed farms. That is why we shall further discuss the funds necessary to buy working capital and land.

In the analysed region it is hard to get land, due to density of population and domination of small farms. It effects a considerably high (as for Polish conditions) price of land, which oscillates between 500-1000 dollars per 1 hectare depending on quality and location. For calculations we shall assume an average price, amounting to 750 dollars. The total financial needs of a farm might be calculated on the level:

1) variant I, with purchase of land:	
a) for variable costs	421\$
b) cost of land (1.6 ha * 750\$)	1200\$
total, when buying land:	1621\$
2) variant II, with land lease:	
a) for variable costs	421\$
b) cost of land (1.6 ha * 50\$)	80\$
total, when leasing land:	501\$

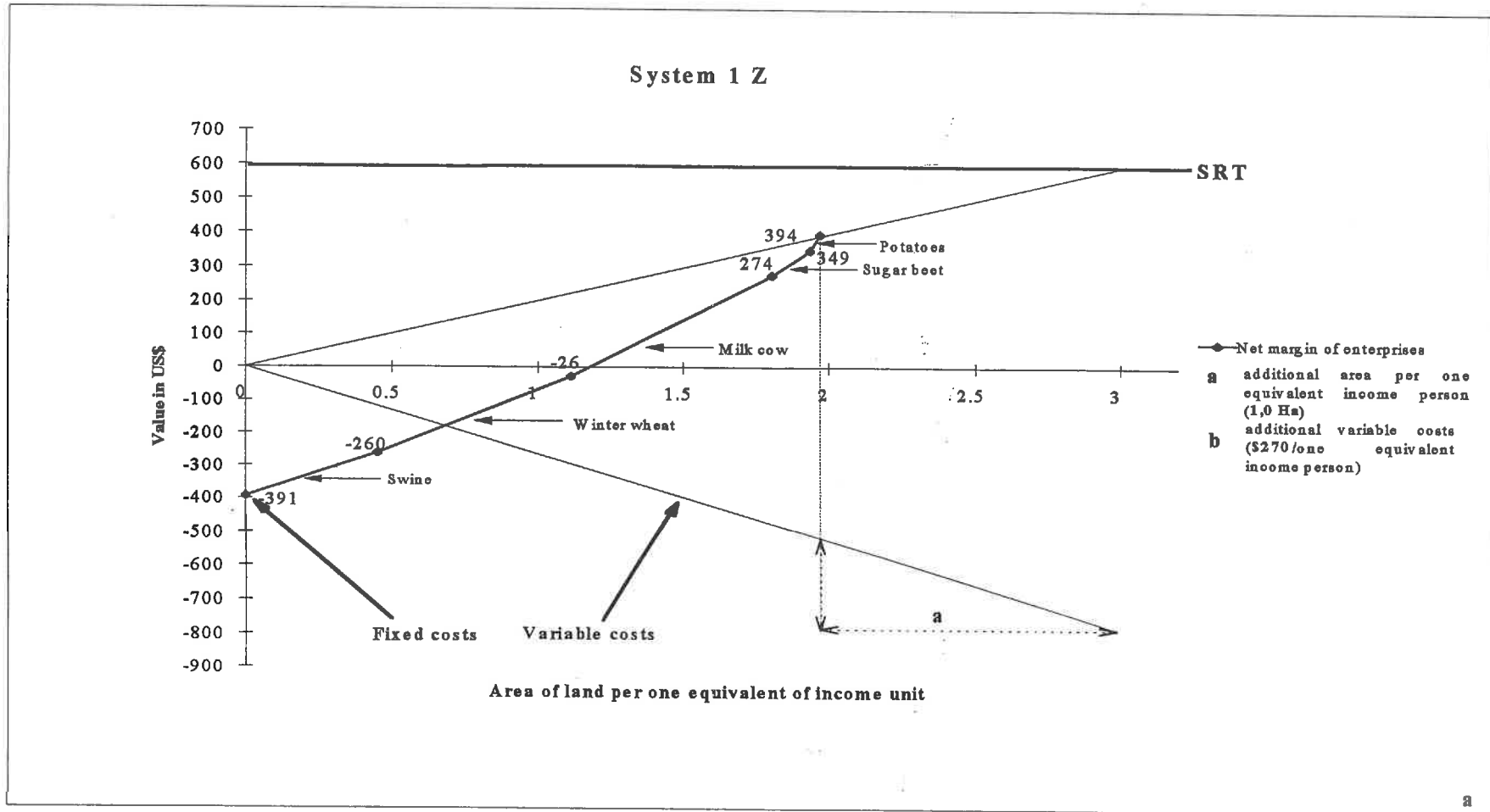
The determined capital needs indicate the lack of possibilities of financing in farm development from the own resources. As we mentioned the farm income (305\$) is not sufficient for covering the basic (subsistence) needs, thus it can not serve as a accumulation source. Also the total family incomes (722\$ per equivalent unit) are not sufficient. Even, when maintaining expenditures on minimum (SRT) level the farmer can accumulate 122\$ per capita per annum at the most. It means, that when buying land, he will be lacking of 1499\$ per capita. Considering the fact, that farmer's income shall increase by 295\$ per capita due to acreage increase, there will still be a considerable shortage of capital (amounting to 1204\$ per capita). Such shortage can not be covered by loans, because the farmer will not be able to repay both instalments and interest (the nominal interest on loans is about 34%, real about 10% per annum). One can state, that land purchase for the farm under analysis does not solve its development problems.

Leasing land is cheaper, it requires 501\$ to start (or 421\$ if the lessor shall accept the rent after harvest) The born variable costs shall be returned at the end of the production cycle with the extra income of 295\$. From this a rent (80\$) has to be deducted, the rest shall remain for the farmer (215\$ per capita) When utilizing loans (10%) this income shall be lowered by interest, so the net income from the farm expansion shall amount to 173\$ per capita. When there is enough land to lease, this operation shall be profitable and feasible, with the availability of loans and its actual utilization for development purposes, not for consumption.

7.2 System 1 Z

Similarly like in "1R" system in the "1Z" system, i.e. in the farms adjusted in a greater extent to animal production, the attained level of agricultural incomes did not allow to attain SRT

Fig. 10 System 1 Z



and amounted 394\$ per equivalent unit. The nonagricultural incomes were lower and amounted to 333\$ per person, which indicates that the combined income level per person exceeded SRT by 127\$.

The fixed costs on the analyzed farm amounted to 391\$ per person, and their coverage was achieved when utilizing 1.2 hectares. When fully utilizing agricultural land, the agricultural income amounted to 394\$.

From the performed (identically like in "1R" system)extrapolation of income, one can state that the SRT level (considering all the already mentioned technical, technological and structural conditions) might be attained with the 3,0 hectares area, thus the existing shortage is of about 1 hectare. In such situation, a farm shall need additionalt 270\$ per capita to cover additional variable costs. The capital needs of a farm in two variants are as follows (the accepted parameters concerning land price and tenure are the same as in system "1R").

1) variant I, with purchase of land:

a) for variable costs	270\$
b) cost of land (1.0 ha * 750\$)	750\$
total, when buying land:	1020\$

2) variant II, with land lease:

a) for variable costs	270\$
b) cost of land (1.6 ha * 50\$)	50\$
total, when leasing land:	320\$

Also in the case of "1Z" system the deterrmined capital needs indicate the lack of possibilities to finance the development of the farm from own means. The farm income amounting to 394\$ can not be the accumulation source, because it is far below the social minimum. Also the family incomes, combined with the nonagricultural revenues (727\$ per equivalent unit) are not sufficient, because framer may accumulate up to 127\$ per annum. When buying land the shortage of financila means shall amount to 893\$ per person. When increasing farmsize the incomes shall increase by 206\$ per person, i.e. the lack of capital shall amount to 687\$ per person. This capital shortage can not be covered by loans, because the farm will notbe able to repay loan instalments together with interest. One may state, that buying more land tohe analysed farm is not the way to solve its development problems, if the farmer has no other financial sources, i.e. from working abroad, well-paid extra jobs, or possession of family capital.

Leasing land leads to smaller costs, amounting to 320\$ in this farm (or 270\$ if the lessor agrees to collect rent after harvest, which is a common practice). The born variable costs shall be covered at the end of production cycle together with a extra income of 206\$. From this income a farmer has to pay the rent (50\$), possible interest on loan (at 10%, it shall amount to 27\$), so the net income from devlopment of the farm shall amount to 129\$ per person. One may state, similarly as in system "1R", when there is available land, leasing shall pay-off and will be possible for implementation, when getting a bank loan.

7.3 System 1 W

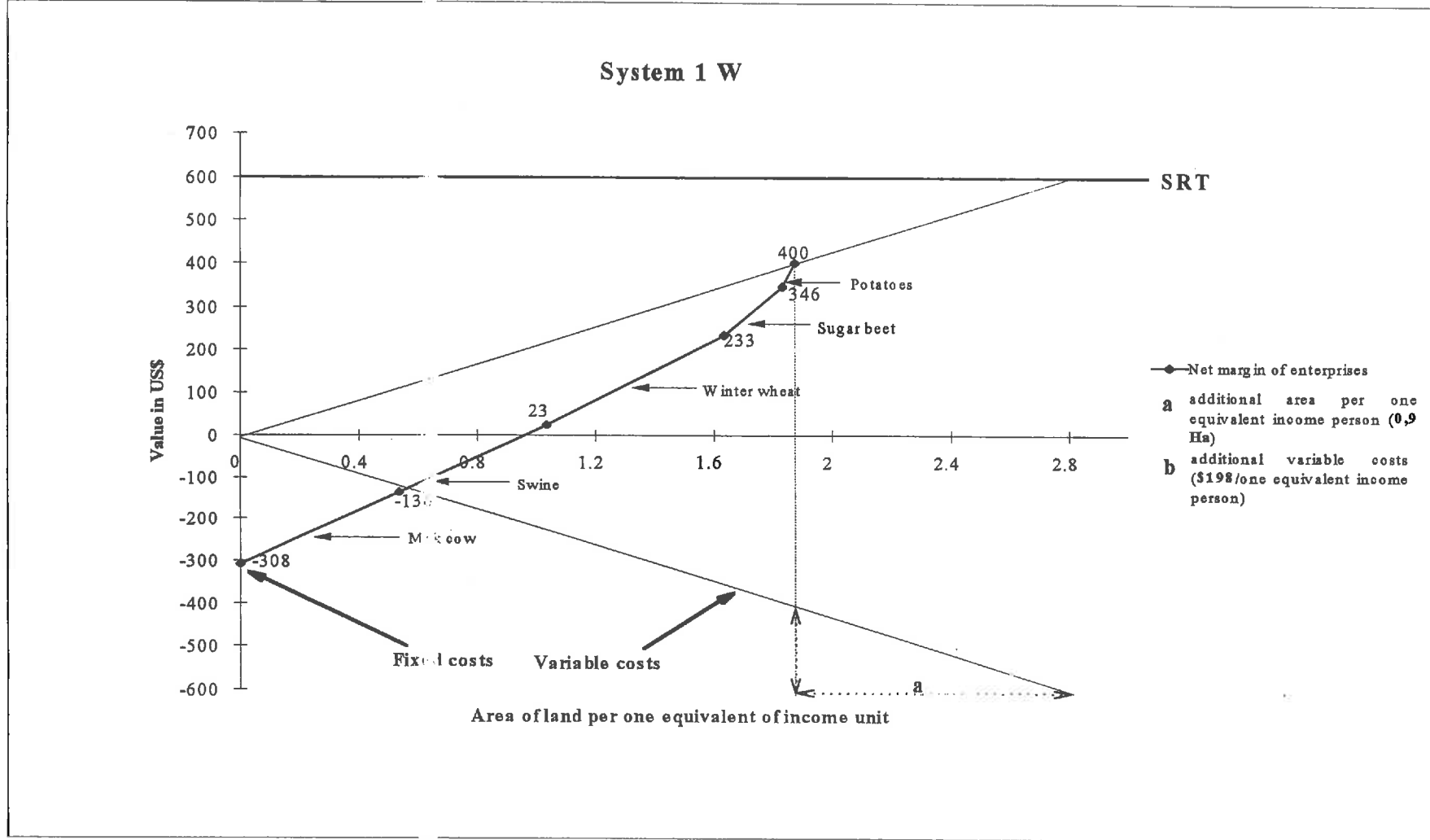
The "1W" system and farm are characterized by the balanced plant and animal production. The level of agricultural income per one equivalent unit amounts to 400\$, and the non-farm-incomes were twice as much (800\$). This amount results from the pension "Zamojszczyzna children" which was given to people prosecuted in this region by the Germans during World War II. The Skierbieszów Community is situated on the land anticipated by the Germans for their settlement. The whole villages have been thrown out and the victims of persecution are paid by the German Government. The number of people eligible is considerably high, thus it is not a sporadic situation, but quite common in the analysed region. However, due to the age of the pensioners this is a type of income that will supply the farm in a limited period of time.

The performed extrapolation shows, that the SRT level can be attained with the land/man ratio per one equivalent person of 2.8 hectares, i.e. it should be increased by 0.9 hectares. Such change, however, calls for increase in variable costs of about 198\$. The capital needs of a farm in two variants can be determined as follows:

1) variant I, with purchase of land:

a) for variable costs	198\$
b) cost of land (0.9 ha * 750\$)	675\$
total, when buying land:	873\$

Fig. 11 System 1 W



2) variant II, with land lease:

a) for variable costs	198\$
b) cost of land (1.6 ha * 50\$)	45\$
total, when leasing land:	243\$

In the case of "1W" system with current non-agricultural income (mother's pension) the determined capital needs indicate the possibility to finance development of the farm from farmer's own sources. True enough agricultural income amounting to 400\$ can not be the accumulation source, because it is much below the social minimum, but the family income together with no-agricultural revenues (1200\$ per equivalent unit) are sufficient, because farmer may accumulate per year up to 600\$ per person. When buying land the shortage of financial means amounts only to 273\$ per person. After increasing farmsize incomes shall increase to 200\$ per person, thus the lacking capital shall amount only to 73\$ per person. This capital shortage can be covered by a bank loan, because the farm is able to repay loan instalments together with interest. One may state, that buying land to the analyzed farm, as long as the family derives income from mother's rent, may be an effective way for solving its development problems. In the case of a farm without such income sources, its development potential is very similar to presented for "1R" and "1Z" systems.

Leasing land leads to smaller costs, amounting to 243\$ in this farm (or 198\$ if the lessor agrees to collect rent after harvest, which is a common practice). The born variable costs shall be covered at the end of production cycle together with an extra income of 200\$. From this income a farmer has to pay the rent (50\$), so the net income from development of the farm shall amount to 155\$ per person. One may state, similarly as in system "1R" and "1Z" when there is available land, leasing shall be fully remunerative.

7.4 Comparison of production systems

The analyzed farms, belonging to different production systems show slightly different characteristics and needs. The data of all types of farms is shown in table.

Table 13 Comparative analysis of systems (calculated per equivalent income unit)

Contents	1R	1Z	1W
Current area/ha	1.7	2.0	1.9
Desired area/ha	2.2	2.0	2.2
Agricultural income in \$	305	394	400
Fixed costs in \$	336	391	308
Capital shortage for working capital	421	270	198

Land shortage in ha	1.6	1.0	0.9
Demand for financing of land purchases	1621	1020	873
Demand for financing for leasing land	501	320	243

Generally, as it could be expected, the biggest shortage of land to attain the SRT level is indicated by the plant production farms ("1R"). However such farms are currently characterized by lowest incomes. Thus they demand the highest capital inputs in order to create necessary resources to attain the income equal to social minimum. In the conditions of the examined community, one should not urge the small farmers to specialize in plant production, because it does not assure sufficient incomes.

The animal farms ("1Z") and those with balanced plant and animal production ("1W") were better off (income wise). It means that farms with small man/land ratio (2-3 ha) must develop animal production, as a activity that on one hand helps in better utilization of labour and cheap feed resources, on the other hand this production is more remunerative than the plant one (except potatoes).

8. Utilization of labour in analysed systems of agricultural production

Graphic analysis of both land and financial shortages (the latter necessary for land and working capital purchases for "1R", "1Z" and "1W" farms) does not include labour resources in each of the farm types. For it was assumed, that they possess a labour surplus, shortages relate to labour and financial resources.

Figures from 11 to 13 present the rate of utilization of labour resources on farms in particular agrotechnical periods i.e.

- - winter
- - spring sowing
- - cultivation of root crops and haymaking
- - harvest (cereals)
- - autumn sowing and root cropping
- - late autumn - prewinter works

as well as mean utilization of resources during the year

The volume of labour resources on the farms was calculated according to Polish methodology of calculating the number of fully efficient labour force, which had been presented in previous part of this report, assuming 8-hour labour day. Thus labour resources might be a bit higher than presented below assuming that a farmer works longer, which is quite common on private farms.

In the "1R" farms, as in the other types, labour force on a farm was not fully utilized. On an average (during the year) for direct work in plant and animal production and for indirect work (buying production means, marketing, repairs etc.) farmers utilized only 60% of available labour resources. In practice the situation is even worse, because it had been assumed that all jobs are done by farmers themselves, while in practice they employ some services. Thus the labour surplus is even higher. One may state that in plant production farms there is a considerable disguised unemployment, amounting to 40% of employment. It means, that considering labour resources - increase in land size or more intensive production is possible. Taking account of the fact that in presented (fig. 4-6) utilization of labour resources included expenditures on indirect works are hardly dependent on farm size, one may state, that the possessed resources enable - without changes in production techniques - doubling of agricultural land per equivalent income unit.

Only during autumn sowing and root cropping labour utilization is higher than in remaining seasons. It results from the relatively low level of mechanization of potato and beets ingathering. Never-the-less labour resources are not fully utilized. In comparison to cereal harvesting which is mechanized (using own or hired machinery) potato and beet cropping is done by hand on majority of smaller farms. In the case of extensive increase of farm size there might occur shortages of farm own labour, which might be covered through hiring seasonal workers, or which is more common by children, as well as by extending working hours. Those shortages might be also bridged by neighbourhood help, which means that farmers work together on one field than move to the other. It enables quick collection of crops without hiring extra workers.

Situation in system "1Z", i.e. the one with dominance of animal production was similar to the "1R" type. The utilization of labour was even higher, but also about 60%. The farm labour force was utilized a bit worse in the manysided farms represented by the "1W" system.

Generally one may state, that all farms disposed of unutilized labour. Its full employment demands in both plant and animal farms doubling of land per one equivalent person, while in manysided farms the rate of land inceae should be even greater. Such a state will allow to increase labour productivity and to attain income per equivalent unit that exceeds SRT, in other words allows maintenance of rural families from the farm alone, even without non-agricultural incomes.

Increase in utilization of labour resources shall be also possible through raising of vegetables, characterized by high labour intensity. However, due to limited demand for vegetables in this region such solution is not feasible for introduction in a wider extent.

Fig. 12 Utilization of labour in system 1 R

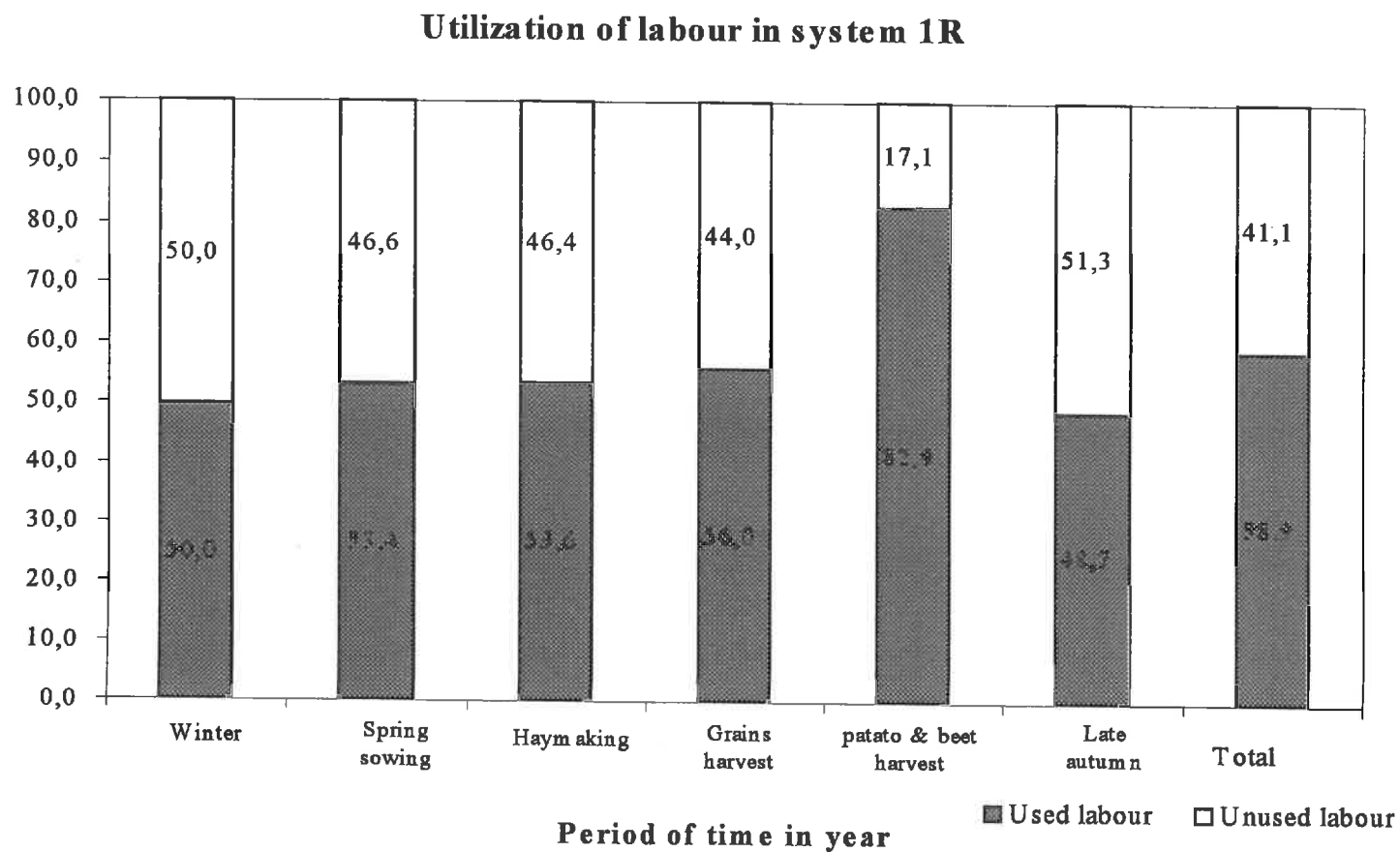


Fig. 13 Utilization of labour in system 1 Z

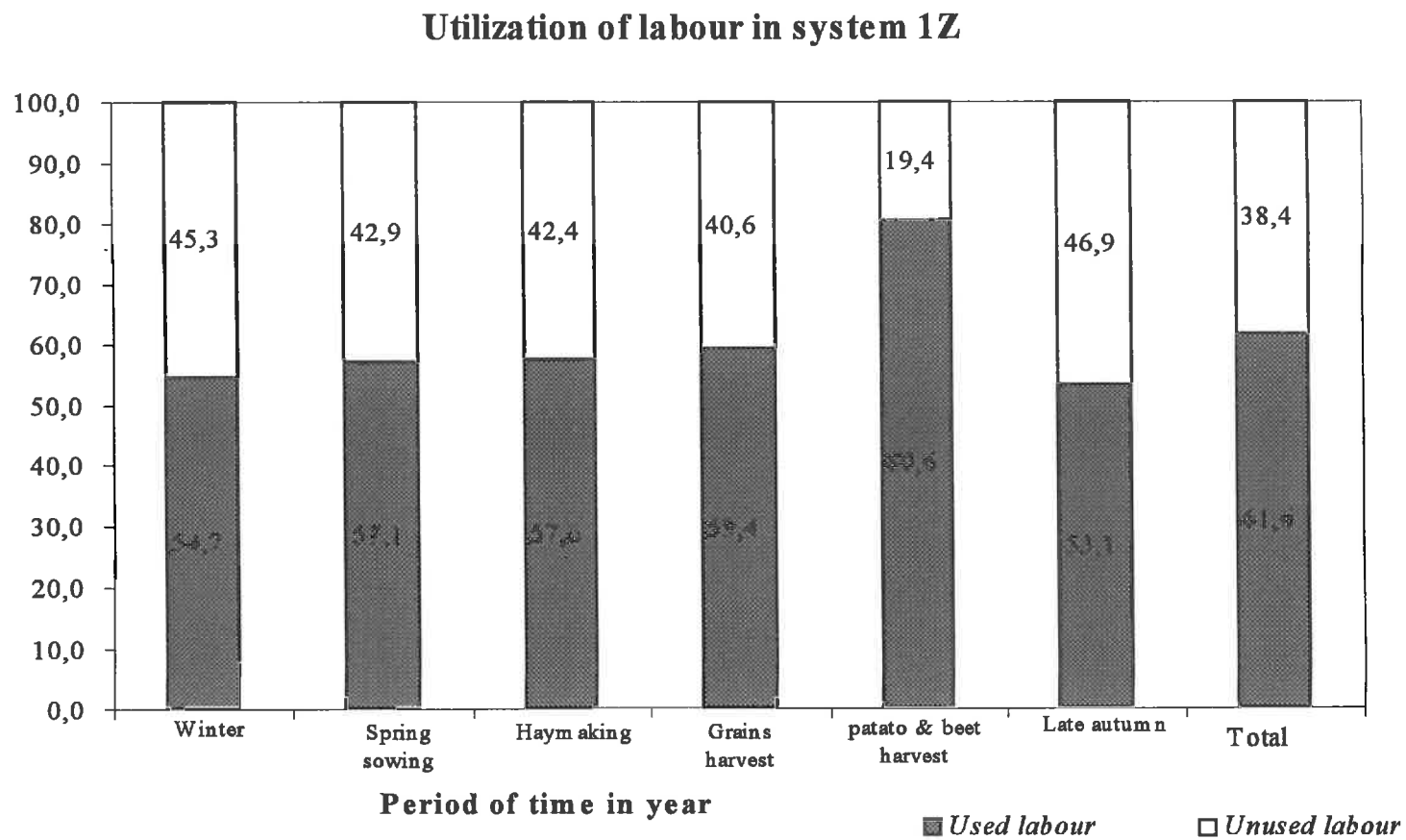
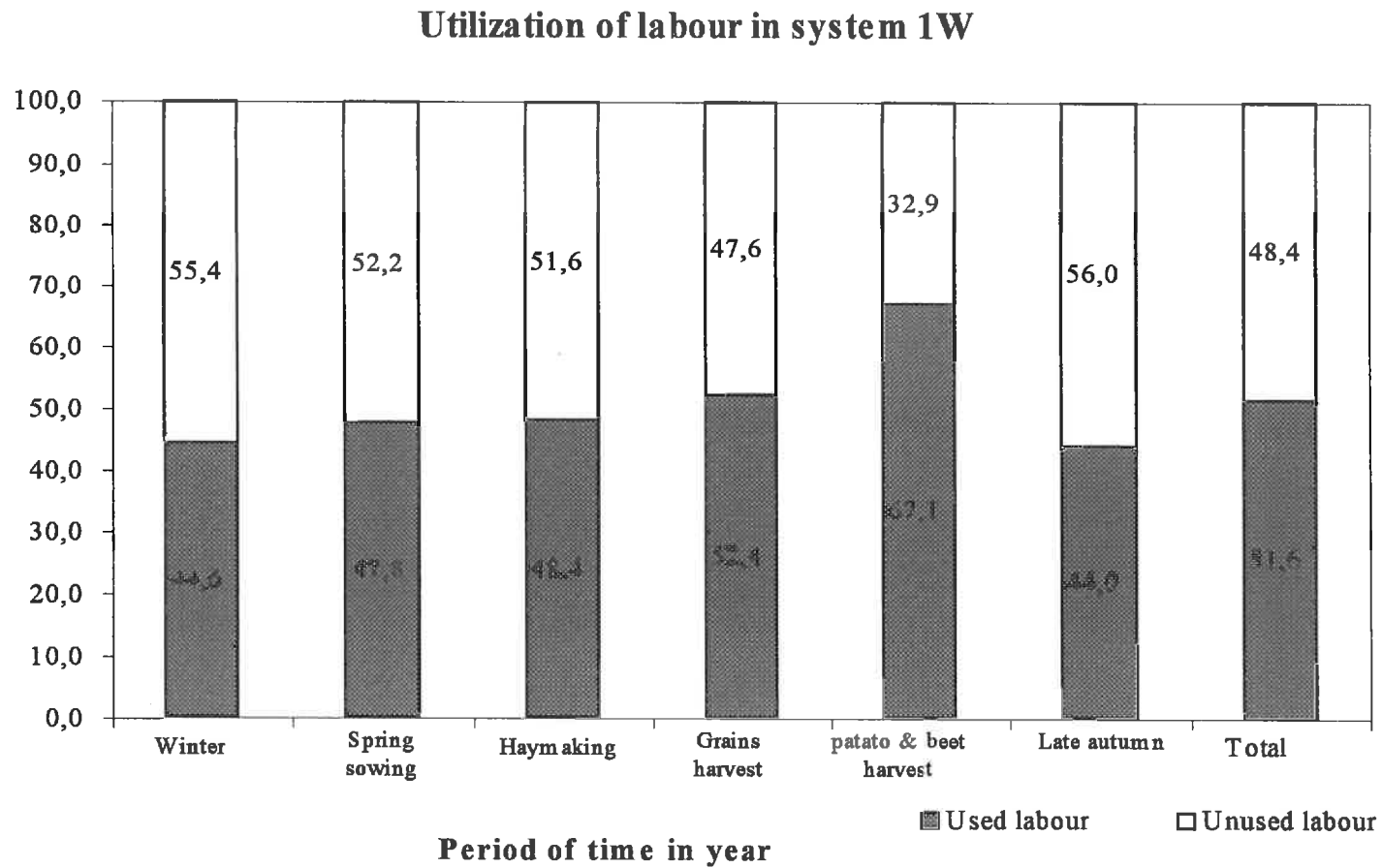


Fig. 14 Utilization of labour in system 1 W



9. Elaboration of refined group of socio-economic indicators suitable for situation analysis in the examined region

On the basis of experience attained during preparation of this report the team of experts singled out a group of indicators feasible for appraisal and classification of farms that have different economic situation, and different development opportunities. Those indicators may to great extent facilitate identification of farm groups in different situation, considering the objective of this project. In the case of examined farms selected indicators unable determination of families in satisfactory or unsatisfactory income situation.

The farms were divided into few groups. In order to differentiate them the following source information was utilised.

- number of calculated income units in a family,
- area of arable land on a farm
- agricultural income
- non-agricultural incomes

Those data are of primary character and serve for calculation of indicators that determine resources as well as incomes of rural families. The basis for determination of groups as well as a component for further analysis were two indicators:

- area of arable land for calculated income unit in the family
- agricultural income per calculated income unit.

The additional information indispensable to categorise farms, and of external character is determination of Simple Reproduction Threshold. It allows to divide farms to those that have development opportunities possessing present resources and production structure, though they do not allow to sustain family solely from agricultural production. In practice three groups of farms were separated. First, with bigger farms (both in absolute numbers and per income unit), relatively economically strong, that possess enough land and capital both for current agricultural production and for accumulation. Those farms secure incomes for farmer and his family that allow for a living standard, comparable to the country average. Acquired income allow to buy land as well, sometimes with a small share of bank loans. The income level per one calculated person exceeds not only the poverty level (SRT), as well as Enlarged Reproduction Threshold (ERI), which forms the lower border of family accumulation possibilities (ERT is double value of SRI).

In the examined sample there was a close relation between total farm size and the area of agricultural land per one calculation income person. In Polish conditions it is normal, because the differentiation of a family size is slight.

In the project the quality of land as well its feasibility for different crop production was not considered. It was possible because of great uniformity of soils in Skierbieszów community. It seems that when analysing communities of greater soil differentiation, as well as bigger territorial units, one should consider land not in physical units, but in calculation units e.g. in hectares of medium quality land (in Poland it means Ivth soil group).

The second group is formed by farms of smaller acreage, thus assuming the identical family size. They also possess less agricultural land per equivalent person. In this farm group incomes from agricultural production are lower, in the range between SRT and ERT. Such incomes usually allow to keep the family on medium level observed in the examined region. The investment possibilities in those farms are smaller, but often there are possibilities of investment in fixed capital, by means of non-agricultural income. Investments for buying land, new farm buildings, farm machinery are linked with bank loans, or with financing from other sources. Often they are linked with temporary lowering of the families living standard. It results from the necessity to repay bank loans or transferring part of the income from consumption to the accumulation sphere.

The existence of farms belonging to this group is not threatened at the present stage of economic development. If there are some investment, they shall function properly. Therefore both two group of farms were not examined thoroughly. It was assumed that producers belonging to those two groups are able to handle the farm's development, as well to secure income levels (from agricultural sources) above the assumed poverty line (SRT).

The third group was made of farms in the worse economic situation, i.e. in farms which should be cared of by the local authorities. Their development perspectives shall also be the subject of the general economic policy on the country level. In those farms the income level from agricultural production alone calculated per one equivalent income unit is lower than the assumed SRT level. It means, that the farms do not secure the minimum level of needs for the rural families. The attained incomes were supplemented by non-agricultural incomes. However in the nineties the incomes from work outside agriculture lost their significance. More important were social funds (various types of pensions welfare funds etc.). Therefore, one may state, that in small farms the basis subsistence means are obtained rather not from economic activity, but from redistribution of agricultural income. If there is any shift in social policy towards withdrawal of welfare funds or lowering of pensions those farms shall find themselves in a dramatic economic situation. It results from the agrarian structure in the Skierbieszów community that this will be a problem for about 80% of farms, using almost 70% of agricultural land. One may state that the scale of the problem in the community is considerable.

In order to examine in a more detailed way farms in difficult economic situation the following categories were found useful.

- fixed costs, indicating the level of the negative financial outcome when no economic activity were undertaken,
- the level of production of potentially commercial (commodity) type. It is a starting point for calculating the gross margin,
- variable costs of different activities
- gross margin for individual agricultural products

Those categories enable determination both of the income levels from farms and per calculated income unit. They also allow for extrapolation, which in turn indicates the minimum needs of the farm in relation to land resources, as well as the necessary capital.

The analyses showed, that in the Skierbieszów community, given the 1995 price relations and typical production structure, the SRT level was possible to be attained at the following minimum farm size per calculated income unit, according to the system:

- plant production - 3.3 ha
- animal production - 3.0 ha
- many-sided production - 2.8 ha

With the typical family size in this community, it means that the minimum income level from farm alone, at the present production structure may be attained using 10 hectares of agricultural land. Therefore development opportunities when employing only farms own financial means are only for farms above the given threshold.

The performed calculations prove the usefulness of such analyses. It was discussed in details in chapter VII. Solely to recapitulate - the analysis showed that it shall not be possible to complement the land area up to SRT level (by 0.9 - 1.6 ha per calculated income unit, depending on production system) by land purchases. The capital needs have largely exceeded the levels of achieved agricultural incomes. It is more real to increase land area through land lease. However in the region under examination there is a strong demand for land, thus leasing land is hardly realistic. For local authorities it means necessity to undertake actions that shall enable increase of incomes for rural families employing one of the following ways:

1. creating demand for labour-intensive, but highly-remunerative agricultural production through searching for market outlets, encouraging outside investors to locate processing plants in the community. It was indicated in the project, that in the farms with lowest income level there is a considerable disguised unemployment amounting to 40% of total labour resources. It means that there is a possibility to expand production considerably having slight capital resources,
2. creating favourable conditions to expand non-agricultural activities in the community, inter alia agrotourism, for which there are good environmental conditions.
3. supporting on one hand land concentration, while on the other hand creating new non-agricultural working posts for people leaving agriculture.

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KWESTIONARIUSZ OPISU GOSPODARSTWA nr

Nazwa wsi , Nr domu

Nazwisko i imię właściciela

Liczba lat prowadzenia gospodarstwa przez aktualnego kierownika

I. POWIERZCHNIA UŻYTKOWANEJ ZIEMI, KOSZTY MAJĄTKOWE

Ziemia użytkowana ogółem (ha)

w tym: grunty orne

sady

łąki

pastwiska

grunty leśne

nieużytki

stawy rybne

w tym: powierzchnia UR dzierzawiona

Klasy bonitacyjne użytkowanej ziemi
łącznie z dzierzawą (ha)

Grunty orne		Trwałe użytki zielone	
I		I	
II		II	
IIIa		III	
IIIb		IV	
IVa		V	
IVb		VI	
V			
VI			
VIz			

Zmiany w obszarze gospodarstwa po 1989 r.

Zwiększenie:

- powierzchnia (w ha)

w tym: w roku 1994

- sposób powiększenia

Zmniejszenie:

- powierzchnia (w ha)

w tym: w roku 1994

- sposób zmniejszenia

Koszt zakupu ziemi w tys. zł w roku, w kwartałach:

Wartość sprzedanej ziemi w tys. zł w roku, w kwartałach:

1994				1995				1994				1995			
II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	

II. ZASOBY BUDYNKÓW I BUDOWLI

Nazwa budynku	Powierzchnia (w m ²)	Wartość budynku wg polisy ubezpieczeniowej (w tys. zł)	Zakończenie budowy lub modernizacji po 1989 r.	Rozpoczęcie budowy lub modernizacji po 1989 r.	Nakłady inwestycyjne na budownictwo (łącznie z kapitalnymi remontami) poniesione w 1994 r. (w tys. zł)
Dom mieszkalny*					
Obora					
Chlewnia					
Inne inwentarskie					
Inwentarskie ogółem					
Pozostałe budynki gospodarcze (stodoły, garaże, szopy, piwnice, spichrze, silosy obetonowane, itp.)					
Budynki gospodarcze ogółem					

*Jako powierzchnię podać powierzchnię użytkową

Koszty remontów bieżących i konserwacji budynków gospodarczych w roku 1994 (w tys. zł) ogółem	
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Stan budynku mieszkalnego (0-brak, 1-dobry, 2-średni, 3-zły)

Stan budynków inwentarskich (0-brak, 1-dobre, 2-średnie, 3-złe)

Dom mieszkalny

Budynki i budowle

Zaopatrzenie gospodarstwa w wodę: 1-z wodociągu ogólnowojewskiego, 2-z własnego hydroforu, 3-przy wykorzystaniu pompy płytwakowej, 4-ze studni własnej, 5-inne (studnia sąsiada, beczkowóz)		
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III. OSOBY ZAMIESZKAŁE NA STAŁE W GOSPODARSTWIE I ZATRUDNIENIE

Lp.	imię i nazwisko osoby w wieku 15 i więcej lat oraz posiadajny/zdobywany zawód	Stopień pokrewieństwa z kierownikiem (żona, mąż, syn, itp.)	Zawód	Płeć 1- mężczyzna, 2- kobieta	Wiek lat	Stan cywilny: 1-żonaty/zamężna 2-kawaler/panna 3-wdowiec/wdowa 4-inny	Wykształcenie		Zatrudnienie					Zmiany w zatrudnieniu				
							ogólne	rolnicze	w gospodarstwie l.miesiący w r.	poza gospodarstwem				podjęcie pracy		zwolnienie z pracy		
										charakter pracy	miejsce pracy	branża	sektor	czas pracy	sektor	czas	przyczyna	
1*																		
2*																		
3.																		
4.																		
5.																		
6.																		
7.																		
8.	Liczba dzieci w wieku do 15 lat																	

* W wierszu 1 wpisać kierownika, a w 2 - współmałżonka

Objaśnienie użytych w tabeli skrótów:

Dochody z pracy poza gospodarstwem (w tys. zł)
[płace, emerytury renty, zasiłki, stypendia itp.]

Najem siły roboczej do prac rolnych (liczba dni)

Koszt najmu (tys. zł)

Dochody z tytułu oddzierzawienia majątku (w tys. zł)
[np. budynków, ziemi]

	1994 (rocznie)	1995 (miesięcznie)
Dochody z pracy poza gospodarstwem (w tys. zł) [płace, emerytury renty, zasiłki, stypendia itp.]		
Najem siły roboczej do prac rolnych (liczba dni)		
Koszt najmu (tys. zł)		
Dochody z tytułu oddzierzawienia majątku (w tys. zł) [np. budynków, ziemi]		

Czy zasoby pracy w Pana (i) gospodarstwie są: - zbyt duże (podać liczbę osób bez której gospodarstwo mogłoby się obyć)

- niewystarczające (podać liczbę brakujących osób)

IV. MASZyny I NARZĘDZIA ROLNICZE UŻYTKOWANE W GOSPODARSTWIE

Nazwa maszyny/narzędzia		Liczba sztuk*	Czas zakupu po 1989 r.	Cena zakupu w 1994 r. (tys. zł)
Samochód osobowy, marka				
Samochód dostawczy, marka				
Samochód ciężarowy, marka				
Ciągnik 2-osiowy	marka I. KM			
Ciągnik 1-osiowy I. KM				
Silniki elektryczne moc - KW				
Wóz konny				
Przy-czepa	1-osiowa			
	2-osiowa zwykła			
	2-osiowa wywrotka			
Dmuchała				
Pług konny				
Pług ciągnikowy				
liczba skłb:				
Komplet bron zę batych	konny			
	ciągnikowy			
Kulty-wator	konny			
	ciągnikowy			
Brona talerzowa				
Glebożyłarka				
Wał				
Ładowacz obornika				
Roztrz. obornik	1-osiowy			
	2-osiowy			
Siewnik nawo-zy/rozrzutnik wapna	konny			
	ciagn.			
Opylacz/opryskiwacz ręczny				
Opryskiwacz ciągnikowy				
Opielacz/obsypnik konny				
Wielorak ciągnikowy				
Siewnik zbożowy	konny			
	ciagn.			
Dołownik				

Nazwa maszyny/narzędzia		Liczba sztuk	Czas zakupu po 1989 r.	Cena zakupu w 1994 r. (tys. zł)
Sadzarka do ziemniaków				
Kosiarka listwowa	konna			
	ciągnikowa			
Kosiarka rotacyjna				
Wiązalka				
Kopaczka konna				
Kopaczka ciągnikowa				
Przyczepa zbierająca				
Przetrzęsacz widłowy				
Grabiarka konna				
Przetrzęsacz-zgrabiarka				
Sieczkarnia połowa-doczepiana				
Prasa do słomy				
Młocarnia czyszcząca				
Sortownik do ziemniaków				
Kombajn do buraków				
Kombajn zbożowy, marka				
Kombajn do ziemniaków				
Kombajn do zielonek				
Śrutownik				
Rozdrabniacz uniwersalny				
Parnik węglowy				
Sieczkarnia do słomy				
Mieszalnia pasz				
Dojarka				
Chłodziarka mleka				
Parnik elektryczny				
Poidła automatyczne dla bydła				
Poidła automatyczna dla trzody				
Zgarniacz obornika				
Wózki i taczki do pasz lub obornika				
Beczkwóz				
Pastuch elektryczny				
Betoniarka				
Spawarka				
Piła tarczowa (krajzega)				
Heblarka				
Wiertarka				
Hydrofor				
Pompa pływakowa				
Prąd 3-fazowy (siła)				

* W przypadku kilku współwłaścicieli wpisać odpowiednio: - przy dwóch - 0,5
- przy trzech 0,33, itd.

Koszty zakupu maszyn i narzędzi rolniczych w roku 1994 (w tys. zł)

Wartość sprzedanych maszyn, narzędzi i pojazdów w roku 1994 (w tys. zł)

X. ZAKUP PRODUKTÓW ROŚLINNYCH w roku 1994 (bez pasz przemysłowych i mieszanek)

Nazwa produktu	Miara	Ilość	Wartość w tys. zł	Kwartał
Wartość zakupu ogółem	x	x		

XI. ZAKUP PASZ PRZEMYSŁOWYCH w roku 1994

Nazwa zakupionej paszy lub koncentratu	Miara	Ilość	Wartość w tys. zł	Kwartał
Wartość zakupionych pasz ogółem	x	x		

Gdzie głównie nabywał Pan(i) pasze przemysłowe: 0 - nie kupował, 1 - sklepy państwowe, 2 - sklepy spółdzielcze (GS), 3 - sklepy prywatne, 4 - bezpośrednio u producenta, 5 - inne miejsca, 6 - nie wie

Jakie zdaniem Pana(i) produkty rolnicze powinny być kontraktowane, wymienić:

.....

dlaczego:

przez kogo:

XII. POGŁOWIE I OBRÓT ZWIERZĄT w roku 1994

Rodzaj zwierząt	Stan na 1.01. 94	Przychody			Rozchody				Stan na 31.12. 94
		z urodzenia	kupno	z przekła- sowania	sprzedaż	ubój domowy	padło	na przekła- sowanie	
Zrebięta				X		X			
Konie młode 1-2 lat		X				X			
Konie robocze		X				X		X	
Krowy		X						X	
Cielęta do 6 tygodni				X					
Cielęta od 6 tyg. do 6 miesięcy		X							
Jałówki do chowu pow. 1 roku		X				X			
Opasy i bukaty pow. 1 roku		X						X	
Maciory		X						X	
Prosięta do 2 miesięcy				X		X			
Warchlaki 2-6 miesięcy		X							
Tuczniki pow. 6 miesięcy		X						X	
Knury rozplodowe		X						X	
Owce młode do 1 roku				X					
Owce dorosłe		X						X	
Drób młody				X					
Drób dorosły		X						X	

Roczne spożycie na rodzinę: mleko (m l) jaja (szt.)

Czy po 1989 r. próbował Pan(i) obniżyć koszty produkcji w swoim gospodarstwie?
Jeżeli tak, to w jaki sposób?

....., jeżeli nie to wpisać 0

Dla których wytwarzanych w gospodarstwie produktów miał Pan (i) w ostatnim roku z góry zapewnionego nabywcę?
(wymienić)
Kto to był?

Dla których wytwarzanych w gospodarstwie produktów robi Pan(i) kalkulację kosztów?
.....
.....

XIII. SPRZEDAŻ I PRODUKTÓW I PRODUKTÓW ZWIERZĘCYCH w roku 1994

Nazwa produktu i jednostka miary	Ilość	Wartość w tys. zł	Kwartał
Wartość zakupu ogółem	x		

Co zrobił Pan(i) z tymi produktami?

(0 - trudności nie było, 1 - sprzedałem po bardzo niskiej cenie, 2 - wywoziłem na odległy rynek, 3 - odłożyłem sprzedaż w czasie, 4 - zużyłem we własnym gospodarstwie, 5 - inne cele

Czy w ostatnim roku gospodarczym udzielał Pan(i) pożyczek sąsiadom, rodzinie lub znajomym? 0 - nie, jeśli tak, to na jaką sumę - w tys. zł

Na jaki cel pożyczono od Pana(i) największą sumę? (wymienić)

....., (0 - pożyczek nie udzielał)

XIV. ZAKUP ZWIERZĄT w roku 1994

Nazwa zwierzęcia	Ilość	Wartość w tys. zł	Kwartał
Wartość zakupu ogółem	x		

XV. KOSZTY ZAKUPIONYCH USŁUG ORAZ DOCHODY Z TYTUŁU ŚWIADCZONYCH USŁUG w roku 1994

Rodzaj usługi lub wydatku	Ogółem ha	Wydatki (w tys. zł)	Dochody ze sprzedaży (w tys. zł)	Kwartał
Orka				
Podorywka				
Kultywatorowanie, talerzowanie				
Praca glebogryzarki				
Nawożenie obornikiem				
Nawożenie mineralne i wapniowe				
Siew zbóż i roślin ziarnistych				
Sadzenie ziemniaków				
Pielęgnacja mechaniczna roślin				
Pielęgnacja chemiczna roślin				
Zbiór zbóż i roślin ziarnistych				
w tym: kombajnem				
Zbiór ziemniaków				
Zbiór buraków cukrowych				
Zbiór słomy po kombajnie				
Zbiór zielonek i traw				
Razem usługi polowe				
Pozostałe usługi lub wydatki:				
Omloty				
Transport rolniczy				
Prasowanie ziemniaków				
Śrutowanie zbóż				
Wypożyczanie maszyn, koni itd.				
Krycie i inseminacja zwierząt				
Usługi weterynaryjne				
Ubój zwierząt				
Inne				
Wartość ogółem				

Kto głównie wykonywał w Pana(i) gospodarstwie usługi w zakresie? (0 - z usług nie korzystał, 1 - sąsiedzi, 2 - prywatne zakłady usługowe, 3 - państwowe zakłady usługowe, 4 - spółdzielcze zakłady usługowe, 5 - inni)

- prac uprawnych

- siewu i sadzenia

- nawożenia i ochrony roślin

- zbioru ziemiopłodów