

## Farm credit and investment in Poland: a case study

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## **Farm credit and investment in Poland: A case study**

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## **Farm credit and investment in Poland: A case study**

### **Abstract**

The paper presents a case study that was undertaken in May 2003. It consisted of interviews of a few banks and farms in two distinct areas of Poland, around Rzeszów and around Wrocław. The objective was to give insights into the lending and borrowing behaviours on the rural credit market in Poland, and into the investment behaviour of Polish farmers. Most of the farms interviewed were representative of the Polish situation: small, generally unspecialised and little market integrated. Farmers were not highly indebted and did not report large investments. Farmers' but also banks' interviews suggested that, although no clear evidence of credit rationing was revealed, restrictive access to credit for specific farmers prevented them from applying. Besides, the study showed that the lack of investment opportunities was also a major reason for low investment levels. The "credit market hypothesis" and the "uncertainty hypothesis" proposed in the World Bank's 1999 survey (World Bank, 2001) were therefore confirmed by this case study. Policies should hence concentrate on a less restrictive and distorted allocation of credit, but incentives for alternative farming such as organic, and diversification of farm activities such as agro-tourism are also recommended.

**Keywords:** investment, credit, Poland, farmers, case study

**JEL Classification:** Q14, N20

## **Investissement et crédit des agriculteurs polonais : Une étude de cas**

### **Résumé**

Le papier présente une étude de cas effectuée en mai 2003, consistant en des interviews de quelques banques et exploitations agricoles dans deux régions distinctes de Pologne, autour de Rzeszów et autour de Wrocław. L'objectif était de donner un aperçu des comportements de prêt et d'emprunt sur le marché du crédit rural en Pologne, et du comportement d'investissement des agriculteurs polonais. La plupart des exploitations interviewées présentaient les caractéristiques de la majorité des exploitations polonaises : petites, en général sans orientation productive et à faible caractère commercial. Les agriculteurs étaient faiblement endettés et n'avaient pas entrepris de larges investissements. Les interviews des agriculteurs mais également celles auprès des banques n'ont pas mis en évidence un rationnement du crédit. Toutefois l'étude a révélé que les conditions d'accès au crédit restreignaient certains agriculteurs de faire une demande. De plus, l'étude de cas a montré que le manque de perspectives dans le secteur agricole était un frein majeur aux investissements. Ceci confirme les deux hypothèses avancées par la Banque Mondiale en résultat d'une enquête de 1999, pour expliquer les faibles investissements et emprunts : « l'hypothèse du marché du crédit » et « l'hypothèse d'environnement incertain » (World Bank, 2001). Les politiques publiques devraient ainsi se concentrer sur une allocation du crédit moins biaisée et un accès aux prêts moins restreint, mais des incitations à des activités alternatives comme l'agriculture biologique ou la diversification dans le tourisme sont également recommandées.

**Mots-clés :** investissement, crédit, Pologne, agriculture, étude de cas

**Classification JEL :** Q14, N20

## **Farm credit and investment in Poland: A case study**

### **1. Introduction**

Since the beginning of the transition, Poland's farming sector has experienced slow restructuring. Polish farms are still small (the average size is 7 ha; Ministry of Agriculture and Rural Development in Poland, 2002) and with obsolete capital. A major impediment to restructuring is the low level of investment in agriculture. Whether this is due to a shortage of capital or to a passive behaviour of farmers remains unclear. Investment and credit are therefore crucial issues, calling for more studies. Is the capital market, once centrally-controlled, now perfectly functioning? What can explain disinvestments? Do Polish farmers rely on credit? A case study about the credit supply and demand sides was undertaken in order to contribute to these issues. The objective was to give insights into the lending and borrowing behaviours on the rural credit market in Poland.

The case study consisted of an interview of a few banks and farms in two distinct areas of Poland. On the supply side, banks that delivered rural credit were selected, while on the demand side individual farms only were interviewed. These farms predominate in Poland, as a result of history. In opposite to the other Central and Eastern European Countries (CEECs) Polish farming sector was not totally collectivised under communism and individual family farms prevailed, accounting for 76% of the agricultural utilised land (OECD, 1995). The present interview took place in May 2003. Loan figures reported by banks apply to 2003 and the other features relate to their whole experience as rural banks during the transition. Farms' production and input figures apply to year 2002, and farmers were asked about investments and credits in the past three years (2000, 2001 and 2002).

Both areas selected differ in their farming structures. The first area is situated around Rzeszów in Podkarpackie voivodship, in the South-East of Poland close to the Ukrainian border, and the second area is in the Western part of the country close to the German border, around Wrocław in Dolnośląskie voivodship (see Map 1). Rzeszów area is characterised by a hilly landscape, low land quality and a strong continental climate, while the climate is milder and the landscape flatter in Wrocław area. Farms in Rzeszów area are small, with an average size of less than 5 ha (GUS, 2002), isolated and with a semi-subsistence character. In Wrocław area farms are larger, with an average size of more than 10 ha (GUS, 2002), and

benefit from the influence of Germany in the way that communication and transportation means are more developed and selling opportunities seem more present.

Questionnaires to banks were divided into five parts. The first part consisted in general information about the bank's characteristics (size, turnover, ownership, etc), and their general attitude towards farmers (in terms of assessing the farmers' creditworthiness, monitoring their actions and enforcing the repayment). The second, third and fourth parts of the questionnaire respectively, included detailed items about commercial loans, (interest-) subsidised loans and (collateral-) guaranteed loans respectively. Questions dealt with the usual terms of the loans (interest rate, collateral, duration) and other requirements (visits, additional fees, etc), the credit purposes, the applicants' characteristics and the loan process (farmers' visits, application costs, monitoring, rationing). In general only one type of credit was provided by the banks interviewed, either commercial or subsidised. None of them offered guaranteed credit. In the last part of the questionnaire bankers were asked how in their opinion the European Union (EU) accession would affect the current rural credit system in Poland and their bank in particular. Questionnaires to farmers comprised four parts. The first part was aimed at getting a detailed description of the farms with the help of general questions (farm creation, bookkeeping, bank account etc), and detailed question about the production (output mix, sales, price, subsidies), the inputs (land, labour, equipment), the revenues (on-farm, off-farm, pension) and the head of the farm (social characteristics). The second part focused on credit received during the past three years (2000, 2001, 2002). For farmers who received credit from banks, detailed information was asked about the lending bank, the terms of the loan, the purpose, the application process, and potential rationing and defaulting. Farmers who did not use credit were asked why (had they applied but were denied, had they given up applying because of the cost, etc). In the third part information was required about additional investments that were undertaken without credit. Finally the last part included personal questions to farmers: their opinion about the current situation in the farming sector in comparison with the communist time, their plans for the future, and their feeling about the changes that the EU accession would bring to the farming sector.

The paper starts by the supply side of rural credit, in section 2. A description of the loans offered and lending behaviour of the banks surveyed is provided. Then the demand side is investigated in section 3, with firstly the characteristics of the farms surveyed, which can help explaining their investment and borrowing behaviour described after. Section 4 concludes.

## **2. Rural credit supply in Poland**

### **2.1. The banking system**

During the communist years, the banking system was centrally-controlled and consisted of the central bank, the National Bank of Poland (NBP), and four banks, two of them specialised in savings, one in foreign trade financing, and one in rural credit (Rutkowska, 1998). The bank in charge with rural credit, the Food Economy Bank (Bank Gospodarki Żywnościowej, BGŻ), was responsible of more than 1,200 co-operative banks. These were created back in the middle of the 19<sup>th</sup> Century and they aimed at assisting the poorest rural inhabitants (Klank, 1999). Co-operatives provided credit to private farms, while the BGŻ channelled funds to the few state and collective farms, which operated under soft budget constraints (Schrader, 1996). The end of the communist period in 1989 saw the reform of the banking sector including the creation of private (Polish and foreign) banks and a market-based allocation of loans (Rutkowska, 1998). The co-operative system experienced a major liquidity crisis in 1992-1994, with hundreds of the banks going bankrupt. A law was passed in June 1994, in order to restructure the rural financial system, based on the three-level model of the French Crédit Agricole (Klank, 1999). Co-operative banks are now organised in nine regional banks, these latter being under the BGŻ control. Besides this three-tiered BGŻ structure, there exist several independent co-operative banks, and newly-created commercial banks, mostly foreign.

For the case study, not all types of banks could be interviewed in both areas, notably missing is a co-operative bank in Rzeszów area. Only one bank was interviewed in Rzeszów area, a commercial bank, while one commercial bank, one co-operative bank and one BGŻ branch were interviewed in Wrocław area. Both commercial banks had as main shareholder a foreign bank. Several features about the banks surveyed are displayed in Table 1 and will be commented thereafter.

### **2.2. Types of credit in the banks interviewed**

Credit under commercial rules and preferential credit supported by the government mix on the rural credit market in Poland. Credit with a subsidised interest rate has been provided long before the 1989 events, but the beneficiaries were mostly state and co-operative farms (OECD, 1995). The worsening of the economic conditions from 1990 led the government to intensify its intervention on the rural credit market, by increasing the volume of subsidies and setting up a programme of loan guarantees. Very recently a new type of loan was created, a “bridge credit” (see subsection 2.2.2.), in order to help farmers benefiting from the EU pre-



accession SAPARD programme which was implemented from July 2002 (OECD, 2003). As indicated in Table 1, among the banks interviewed, the BGŻ branch area offered several preferential credit lines and the co-operative bank offered preferential credit only for working capital (their main branch in Warsaw offering also for investments) as well as SAPARD bridge credit. Only both commercial banks interviewed reported delivering in fact commercial credit. Besides they did not offer any preferential credit, but the one in Rzeszów area offered SAPARD bridge credit.

### **2.2.1. Preferential credit**

Preferential credit currently takes two forms in Poland. Under subsidised loans, government supports a share of the interest rate, and thus the effective interest rate that farmers pay is below the market rate (more precisely it could not exceed 75% of the NBP refinancing rate in 1998; Karcz, 1998). Under loan guarantee, government provides a share of the collateral in case of default (up to 80% at the introduction of the programme in 1994; Swinnen and Gow, 1999), and thus farmers can contract a loan with a collateral requirement greater than the asset they own. Subsidised credit is in theory extended by all banks, however the volume per bank is based on its agricultural lending activity in the past year (Christensen and Lacroix, 1997). Therefore its allocation is mainly provided by the co-operative banks and the BGŻ, for about 80% of the loans (Karcz, 1998). The Agency for Restructuring and Modernisation of Agriculture (ARMA) is responsible for the subsidised credit, in the way that it pays the differential between the commercial interest rate and the rate paid by farmers. Several credit lines are proposed in this frame, including farm investment loans, non-agricultural loans and loans to the municipalities (Christensen and Lacroix, 1997). Loan guarantees are offered under three programmes. Under the ARMA programme, banks extend loan guarantees to private farmers while under the Agricultural Property Agency (APA) programme they extend them to former state farms and co-operatives. The largest part of the loan guarantees (90%) is however extended under the Agricultural Market Agency (AMA) programme to enterprises involved in grain intervention purchases in a price stabilisation objective (Christensen and Lacroix, 1997).

Table 2 presents the loans, other than commercial, offered by the banks interviewed. Five lines of subsidised credit could be listed, four for investment and one for working capital. Under the subsidised credit for productive investment could any farmer buy any equipment necessary for the production, with an interest rate supported by the farmer of 3.90% p.a.. If the investment objective was to increase the farm specialisation, the interest rate was lower

for the farmer, 1.95% p.a. If the investment was undertaken by farmers under 40 year old, the interest rate was even lower, 1.56% p.a. This very low interest rate also held for land purchase by any farmer, clearly showing the willingness of the government to give incentives for farm enlargement. The last subsidised credit line reported was offered for working capital, in order to purchase intermediate consumption such as seeds, fertilisers and pesticides. The interest rate was 4.00% p.a. and the repayment period was usually one year only, while it was several years for the investment loans mentioned previously. The total (commercial) interest rate amounted 7.81% p.a. for investment and 6.88% p.a. for working capital, the differential between this and the rate paid by the farmers being supported by the ARMA. A limit of 334.50 zł (77 €) per hectare of land owned could be lent under the working capital preferential credit, and a limit of 5,400 zł (1,244 €) per hectare of land purchased was set for preferential land credit. There was no upward limit for the other preferential investment credits, however farmers needed be able to contribute personally up to 20% or 30% of the total investment costs. Farmers could take several preferential credits simultaneously, providing that the total loan volume was less than 2 millions zł (460,829 €), which was a comfortable limit.

No banks stated to provide loan guarantee credit and moreover did not seem very aware of it. This confirmed the claim that this intervention form was not very frequent as mentioned previously.

### **2.2.2. SAPARD bridge credit**

Table 2 also reports the specific bridge credit linked to the SAPARD programme. The structural programme SAPARD aims at improving the agri-food sector competitiveness, meeting the EU sanitary standards in the view of accession, and increasing the multi-functional rural development. Under the SAPARD measures specific for farmers, namely Measure 2 about investment in agricultural holdings and Measure 4 about rural diversification, can farmers receive 50% of their investment costs back, with a maximum limit ranging from 40,000 zł (9,217 €) to 170,000 zł (36,495 €) depending on the investment type (Ministry of Agriculture and Rural Development in Poland, 2003b). There are numerous conditions to fulfil, with regards to the farmer's age and education, and the farm's characteristics and its compliance with EU standards. The main requirement however is that farmers have to contribute totally to the investment costs before getting 50% back, but they are not allowed to contract a preferential credit to help them bringing this initial contribution. Thus they have to totally self-finance their investment, or to take a commercial loan with high interest rate, before getting 50% of the costs back.

Therefore in order to help farmers for their initial 100% contribution, some banks propose a special commercial credit, called bridge credit. Farmers are required to contribute to a small share of the costs and they are charged a lower interest rate than the usual commercial rate. The co-operative bank interviewed required a contribution of 10% and charged a fixed interest rate of 7.90% p.a. The commercial bank in Rzeszów area required a contribution of 20-30% depending on the loan volume and charged a variable rate, also depending on the loan volume as well as on the repayment length and whether the applicant had a good reputation in this bank. The good reputation meant that the farmer had or had had a bank account in the bank, and that he or she had never defaulted a loan. This bank nevertheless reported interest rates varying between 2% and 5% p.a., lower than the ones charged by the co-operative.

### **2.2.3. Commercial credit**

Commercial loans are in general used for investment rather than for working capital. Farmers turn to these loans when they cannot fulfil the personal contribution required for preferential or bridge credits, or when the nearest banks they know do not offer these latter credits.

No figures on the interest rates (range or average) was possible to get from the commercial bank in Wrocław area. The reason invoked was that the rates were always negotiated on a personal basis. This negotiation was not based on the collateral owned. Interest rates were indicated to be lower for farmers with an account in this bank or with a large farm turnover. In opposite, interest rates in the commercial bank in Rzeszów area were never negotiated, and depended only on the repayment period and the loan volume, with lower rates for larger volumes. The average interest rate was reported to be around 8%.

Banks set no maximum limit on the loan volume but the commercial bank in Wrocław area set a minimum of 10,000 zł (2,304 €).

## **2.3. The loan process in the banks interviewed**

### **2.3.1. Collateral and other requirements**

Table 1 summarises a few characteristics regarding the collateral requirements. In both commercial banks it was stressed that land was never accepted as collateral because it had in general too low a value. Land with a building on it was preferred. Machinery could also be used as collateral providing that it was insured. In the commercial bank of Rzeszów area, the collateral requirement was 200% of the loan volume, for any farmer or loan, while in the commercial bank of Wrocław area it was 100%, except for small investments such as PC

where it was 70%. These requirements are in line with the World Bank's survey about more than 2,000 rural households in 1999; the average loan-to-value ratio reported in this study for private banks gives an average collateral requirement of about 100% (World Bank, 2001). In addition the commercial bank of Wrocław area always required a bill of exchange, moreover farmers had to prove that they had a large turnover. The commercial bank in Rzeszów area sometimes additionally required a co-signer. The BGŻ branch and the co-operative bank in Wrocław area officially accepted land as collateral, the value per ha given by a scale accounting for the land quality, but usually tried to have another collateral, such as buildings and machines. For the BGŻ branch, a collateral was preferred for investment, while a co-signer was enough in the case of working capital. The co-operative bank set the collateral requirement at 200%, for each farmer and loan, and additionally required a bill of exchange.

The person interviewed in both commercial banks and the BGŻ branch indicated supporting zero costs for the collateral assessment. Farmers had to hire an expert to have their assets valued, and therefore supported the full costs. In the commercial bank in Rzeszów area, the costs were said to vary according to the asset value, but an average figure of 700-1,000 zł (161-230 €) per application was mentioned. However the co-operative bank officer reported to send their own people to control and evaluate the collateral, and therefore to fully support the costs. The person interviewed insisted that he did not regret it, as it would cost only time and petrol, far less than defaulting.

A business plan was always required for investment loans, the costs being supported by farmers. Also for preferential credit for investment, farmers were required to bring a document proving the positive evaluation of the application by the extension service (ODR).

### **2.3.2. Monitoring and default**

Several means were indicated in order to avoid non-productive use of loan and default. In all banks interviewed, farmers were said to never get the whole loan volume at once, but to firstly receive 70% of it. Only after showing the bills proving that the purchase took place, was the remaining share granted. Another possibility was to pay directly the sellers or the workers implementing the investment. In this case, farmers never received any money. Besides, in the commercial bank in Rzeszów area and the co-operative bank one officer was sent to visit and monitor farmers once in the repayment period in the case of an investment loan.

Only in the commercial bank in Wrocław area some defaults in repayment were reported. But the persons interviewed in all banks shared the same feeling that repayment was more important than the collateral appropriation. In the commercial bank in Rzeszów area it was added that in case of defaulting, the bank would get only one third of the principle back due to the poor trial institutions. Therefore officers in all banks closely followed farmers, and always tried to find a solution in case of repayment difficulty, usually by rescheduling the loan. This behaviour contributes for explaining the low official rate of default experienced by Polish farmers, that is estimated to be 2% (Karcz, 1998).

### **2.3.3. Applications and rationing**

In the commercial bank in Rzeszów area applicants were said to be in general farmers with 2-3 ha and off-farm jobs. Applications for investment purposes were mainly for agro-tourism and very rarely for land. In the commercial bank in Wrocław area few farmers applied but applicants were all relatively large farmers, which is not surprising considering the minimum loan volume mentioned previously. In the BGŻ branch it was indicated that small farmers preferred to apply in co-operative banks, while large farmers usually applied in BGŻ because they knew that they could receive large loan volumes there.

Applicants were required to come two or three times to the banks, once for discussing the loan possibilities and requirements, another time for bringing the documents and filling the form, and the last time for signing the contract. Often the first stage was skipped since farmers already knew about the loans and requirements via their ODR or they had phoned to have information. However the person interviewed in the BGŻ branch added that in general farmers had to come an additional time because some documents were usually missing.

In both commercial banks it was claimed that a farmer was never granted less than desired (see Table 1). In the cases where the amount applied for was large, it was granted on a long period. However it was admitted that a couple of farmers per year were denied from commercial credit because they had not sufficient collateral or a low turnover. As for preferential credit, farmers were said to be aware of the conditions and therefore to not apply if they knew that they would not fulfil them. In the co-operative bank, the person interviewed confessed that the ARMA had a frequent shortage of funds to support preferential credits. Therefore it happened that some farmers were rationed partially, or totally according to the first come first served rule.

### **2.3.4. Consideration of farmers**

The difference in opinion about farmers is interesting, between the banks interviewed, commercial on one side and co-operative on the other side. In both commercial banks other clients were preferred to farmers, because the risk of defaulting was too high for the latter ones. In the commercial bank in Rzeszów area it was added that the main reason for defaulting was that farmers applying were too small and therefore unable to make their investment profitable. In opposite, in the BGŻ branch and the co-operative bank farmers were considered as very good clients because they were said to take their profession at heart and to feel important to honour their debts, and for that they gave much effort in order to repay the loans.

## **3. Credit demand and investment of Polish farms**

### **3.1. Characteristics of the farms interviewed**

#### **3.1.1. General characteristics**

Four farms were interviewed in Rzeszów area (thereafter named R1, R2, R3, R4) and three farms in Wrocław area (named W5, W6, W7). Their characteristics are displayed in Table 3. All farms were family farms from generations, or they were created as a piece of land inherited plus an additional piece purchased. Moreover all adults living on the farms were themselves born on a farm. Heads of the family were over 40 years old and not highly educated (the highest diploma was from secondary school), except for farmer W5 who was less than 30 years old and currently undertaking a PhD, confirming the general situation in Poland (Ministry of Agriculture and Rural Development in Poland, 2003). No farmer was member of a co-operative, producer group or farmer union. Only farmer R1 affirmed to be member of an informal producer group. He explained that he and other farmers in the same area were trying to set up an official producer group for fish production. In the future this might entitle them to government support in the frame of the 2000 law about producer groups (SAEPR/FAPA, 2000).

#### **3.1.2. Land**

The general difference between both regions in terms of farm size, as mentioned previously, was well reflected in this case study. Farms in Rzeszów area were smaller than their

counterparts in Wrocław area, all smaller than the national average of 7 ha. Farms in Wrocław area were larger than the national average, but however, with the exception of farm W6, much smaller than the Western standards (42 ha was the average farm size in France in 2000; Agreste, 2002). In general farms owned most of their land, except for farm W6 in Wrocław area that rented more than one half of its area (47 ha). All farmers in both areas insisted that it was preferable to own land because the rental contracts were short term, usually less than one year, and very insecure. For comparison rental contracts in France are in general for 9 or 18 years (Agreste, 2002). Farmer R1 indicated a land rent of 240 zł/ha (56 €/ha) per four months and farmer W5 100 US\$/ha (119 €/ha) per year. These figures are comparable to the average rent for arable land in France that was 115 €/ha per year in 2002 (Agreste, 2002).

All farmers attested to hold their land ownership titles. The high fragmentation in both areas reflects the general situation of Poland, as 20% of the Polish farms are fragmented into 6 plots or more (Ministry of Agriculture and Rural Development in Poland, 1998). Not mentioned in Table 3 is the land quality. Poland has a land quality map with all plots registered on a I to VI class scale. Class I is of the greatest quality but accounts for only 0.4% of the country agricultural land, while class IV is the dominant class with 40% of the land (Ministry of Agriculture and Rural Development in Poland, 2002). Farms interviewed in Rzeszów area had a low land quality, generally V, while farms interviewed in Wrocław area had a slightly better quality, of III or IV. Farmers were asked to estimate the value of their land when possible, or to indicate the price they purchased it. The values seem to confirm the difference in land quality between both areas. Farms in Rzeszów area and in Wrocław area reported a value of about 3,000 zł/ha (645 €/ha) and 10,000 zł/ha (2,151 €/ha) respectively. Farms in Rzeszów area had therefore a lower value than the Polish average of 5,200 zł/ha (1,119 €/ha) (Ministry of Agriculture and Rural Development in Poland, 2002), and all farms had a much lower value than the French average of 3,200 €/ha (Agreste, 2000).

All farms clearly expressed their interest in the agricultural pension (KRUS) and affirmed keeping land in this view. The agricultural pension is the largest mean of support for the farming sector by the government in Poland. It is highly subsidised, making it more attractive for farmers than the usual worker pension (World Bank, 2001). More precisely, although the benefit received is similar, only 7% of KRUS are contributed by farmers, while non-agricultural workers contribute to the usual pension at 48% (Safin, 2000). Currently the requirement is to keep 1 ha of land during the contributory years, but farmer W5 argued that this minimum would soon be increased to 4 ha.

### **3.1.3. Production**

The farms interviewed in Rzeszów area had no clear production specialisation, with both crop and livestock outputs, whereas in Wrocław area, the farms interviewed were only crop specialised. In Rzeszów area, the farms' productions reflected mostly the family needs, since at least 80% of the production (except for farm R1 for which it is 20%) was self-consumed. The remaining output was mainly sold on open markets, namely milking products for farm R3, and fruits for farms R1 and R4. Farm R1 sold in addition more than half of its production (vegetables and honey) in local shops. In Wrocław area however, farms produced only for sales. Farm W5 reported a little corn given to relatives and farm W6 a few kilograms of potatoes consumed by the family, but the shares in the total output were negligible. Farm W6 sold a quarter of its potatoes production on open markets, not directly by a family member as done by the Rzeszów farms, but to kiosks operating on the markets. The other crops were sold to private buyers and to the government. From its output, farm W5 sold parsley seeds and beetroot seeds to a private buyer, and farm W7 sold its whole output to private livestock farms using it as fodder. Farms W5 and W6 sold their corn and wheat output to the government, via the ARR, the price being topped by a deficiency payment of 110 zł/t (24 €/t). In 1999 intervention prices in Poland were reduced (to 450 zł/t (97 €/t) for wheat) and deficiency payments introduced for grain with a specific quality sold to the ARR outlets (OECD, 2000). Reported prices are listed in Table 4, with Poland's and France's averages for comparison. Prices without deficiency payment reported by the farmers interviewed were relatively similar to the national average for wheat, but much lower for barley. Besides, crop prices without deficiency payment were lower than the French average prices, but with deficiency payment they were higher.

The crop yields indicated by Wrocław farmers (reported in Table 4) suggested that their farms were relatively good performers in comparison with the national and French averages. In particular yields for spring wheat were much higher than the national average, and yields for winter wheat and corn were similar to the French averages.

Farmer R1 claimed to be organic but reported failure to get certification yet.

### **3.1.4. Labour**

On farms R1, R2, R3 and W7, both adults of the married couple worked permanently (full time or not, depending if off-farm job or not). On farms R4 and W5, only one adult in working age was present and worked permanently. On farm W6, the male adult worked



permanently with his son and two employees. This farm had also up to 10 seasonal workers for the potatoes harvest. Both permanent and seasonal workers were paid 5 zł/hr (1.07 €/hr), which is a figure consistent with other studies (e.g. Petrick and Latruffe, 2003). Farmer W5 also reported some seasonal employment. One person was hired a few days per year to spray fertiliser, and was also paid around 4-5 zł/hr (0.86-1.07 €/hr). Another person was hired to harvest with a wage of 250 zł/ha (54 €/ha). All farms added occasional help from relatives to the labour force mentioned.

A question whether in their opinion the labour force was too much, enough or insufficient was aimed at showing potential hidden unemployment, that is to say, workers whose job is redundant. The agricultural census of 1996 estimated that hidden employment amounted to about 25% of the agricultural labour force (Safin, 2000). However all farmers interviewed seemed to be happy with the labour force on farm. A closer look at the farms' characteristics made it clear that on these farms indeed, hidden unemployment did not exist since most of the farmers had other activity or employment (see below), and the others had enough tasks to be busy with.

### **3.1.5. Other farm activities and off-farm jobs**

Only farms R1 and R2 had another activity on the farm, namely agro-tourism. They offered guest rooms at home, and provided outdoor activities, bikes for R1 and waymarked footpaths for R2 which was situated at the forest edge. Farmers on both farms acknowledged that they would not be able to survive without this activity, and that farming in general in Poland could only be part-time. The other farmers of Rzeszów area, R3 and R4, shared this view and also showed their interest in such activity. However agro-tourism seemed not feasible for them since tourists were very rare in their location. Their farms were indeed situated in isolated hilly places, while farms R1 and R2 were located closer to Rzeszów and relatively busy roads.

Off-farm job seemed to be a great necessity for farmers. Only farms R1 and W6 revealed no off-farm employment. However for farm R1 in Rzeszów area off-farm employment was highly sought. Only farmers on farm W6 were totally uninterested, which was understandable considering the farm size and success in sales.

### **3.1.6. Farm assets**

Four farms had a current bank account, and three of them also a savings account. Farmer R1 pointed out that his savings account was a condition to get credit. Three farms had no bank

account at all. These farms, from Rzeszów area, never applied for credit (see below). Had they applied and received some credit, it seems intuitive that they would also have at least a current bank account, either to receive the loan or to show their turnover. Only three farms had a bookkeeping, and for one of them (W5) it was not very detailed. All this confirms the European Commission fear that the EU aids will be difficult to deliver (EC, 2002a).

Most of the households had a PC at home, but in general it was not used for the farm activity but by the children in the family. Farm W5 had computer access at work, therefore only the family on farm R3 was without computer facilities. Only two farms did not own a car. Farm R1 had one but sold it a couple of years ago to invest in agro-tourism. Farm R4 was too poor to have one but borrowed from relatives. The largest farm interviewed, W6, counted two cars and also one small truck for the farming activities.

All farms owned at least one tractor, except for farm W7, but the farmer indicated to make use of both tractors from relatives' farm in the same village. Again farm W6 showed its large production scale, with seven tractors owned. Tractors were very old, confirming the general situation of capital obsolescence in Polish farms (e.g. Bafoil *et al.*, 2003). For example the average age of a tractor was reported to be 18 years in 1998 (Ministry of Agriculture and Rural Development in Poland, 1998). As for the other machinery equipment, four farms owned everything needed from seeding to harvesting, except for farm R3 which lacked a harvester. Farmers on this farm however argued that this was not a problem since every season a harvester was going from village to village. The three other farmers used some relatives' machinery and declared therefore that they did not need to buy some. All farmers owning machines also reported to lend them freely to relatives and neighbours. Help among farmers, concerning machinery or labour, seemed to be very widespread. However, formal co-operatives sharing new machinery seemed to be nonexistent.

### **3.1.7. Revenue**

Only for the largest farm, farm W6, the gross revenue stemmed entirely from the output sales. The next successful farms in terms of on-farm revenue were farm W5 for which 60% of the gross revenue came from farming activities, and farm R1 with 30% and 40% of the gross revenue coming from sales and agro-tourism respectively. In general off-farm employment accounted for a non negligible part of the gross revenue, up to 90% for two farms. Finally two farms had a large share of their gross revenue originating from KRUS, received by the ageing mother still present on the farm. In the case of farm R4 particularly, the living situation was

difficult, since only a few strawberries were sold on the market in summer, otherwise the family, consisting of one lady, her three children and her retired mother, counted solely on KRUS. They admitted that it happened that in winter the pension could even not cover the heating costs. These findings confirm that a non negligible share of the Polish agricultural households' income comes from KRUS (10.7% in average for the country in 2001 according to EC, 2002), particularly for small farms. The World Bank's survey allowed to differentiate between farm size: in 2000 KRUS accounted for 15.6% of the surveyed households' income for farms between 1 and 7 ha, while the share was only 8.6% for farms larger than 15 ha (World Bank, 2001).

Besides price (and credit) support, farms did not report any other government support, except for fuel subsidies. Farmers with registered tractors were entitled fuel coupons of 20 litres per hectare of land owned. Successful farm W6 was able to buy 20% of its fuel use with these coupons. Farm W7 also reported such coupons received by the relatives whom he borrowed the tractors from. It therefore seems that the 1993 programme on fuel subsidies was restarted lately, despite being discontinued in 1994 (in this scheme, fuel subsidies were granted in cash per ha used, and not owned as reported in this case study; OECD, 1995). Farmer R1 mentioned some SAPARD subsidies for setting up his producer group.

### **3.2. Investment and indebtedness of the farms interviewed**

#### **3.2.1. General features about the borrowing behaviour**

General features about the borrowing behaviour of farmers are presented in Table 3. Three farms received some credit in the last three years (2000-2002), farm R1 for investment in agro-tourism, farm W6 twice for working capital and once for investment in production, and farm W7 twice for working capital.

Four farmers did not consider credit necessary. Two farmers in Rzeszów area argued that they did not intend to invest and that their small needs in working capital could be covered by self-financing. In opposite, two farmers in Wrocław area were interested in investing but declared that they could rely on off-farm revenues to finance. The other farmers regarded credit as necessary, to finance their investments in agro-tourism (R1 and R2) or for farming purposes (W6).

In general farmers estimated that it was difficult to contract credit due to the very high interest rates. Farmers in Rzeszów area also stressed that they could not fulfil the collateral

requirements. Two farmers confessed their fear to lose their assets provided as collateral. Although farmer R4 claimed her fear only for her home and not for her land due to the low value (low land quality), it clearly appeared from the interview that she would not agree to provide all her land as collateral, in a view of subsistence farming and KRUS. Farmer W5 added that the difficulty in using credit was increased by the upward limit in the principle. Farmers W6 and W7 considered it easy to receive preferential credit.

Informal source of credit did not appear to be frequent as only two farms reported little borrowing from colleagues or relatives.

### **3.2.2. Characteristics of the loans received**

Table 5 describes the loans for the three farms that reported receiving credit in the last three years (2000, 2001, 2002). Farmer R1 received credit for a bike shed for its agro-tourism activity, of 4,000 zł (860 €). Farmers W6 and W7 both received twice credit for working capital, twice 24,000 zł (5,163 €) and twice 5,000 zł (1,076 €) respectively. Additionally, farmer W6 received some credit for investing into a new dryer, of 150,000 zł (32,269 €). All farmers reported no investment credit in the years previous to 2000, and farmers W6 and W7 attested taking preferential credit for working capital almost every year. It seems that, few loans for investment were contracted while preferential credit for working capital was common, similarly to the findings of other studies (95% of agricultural loans were used for working capital in 1995 according to Józwiak, 2001; while the World Bank, 2001, reported a figure of 70% in its 1999 survey). This might be due to the fact that preferential credit for working capital is widespread in the banks and easy to apply for, while conditions for investment credits are more restricted, as seen in section 2. The study also reveals that only three of the seven farms interviewed were indebted and moreover their indebtedness level was low. For comparison the average short-term, respectively long-term, debts per farm in France in 2000 were 35,200 €, respectively 62,500 € (Agreste, 2002). The present case study hence confirms the general situation in Poland, that despite preferential loans little credit is contracted (SAEPR/FAPA, 2000; World Bank, 2001).

Only agro-tourism farm R1 reported a commercial credit during the past three years. The farmer pointed out that his intention was to apply for a SAPARD loan, where he would get 50% of the investment costs back, but that he could not fulfil the initial 100% contribution requirement. Either the bank where he applied did not propose the bridge credit, or he could not fulfil the conditions. As there exists no preferential credit line for agro-tourism

investment, the farmer resorted to a commercial loan, with a high interest rate of about 16% p.a, adjusted with inflation during the two years of repayment. This rate is in line with the national average rate of 13% p.a. for loans to farmers, reported by the NBP (NBP, 2002). The other investment credit registered among all farms was received by successful farm W6 for a new dryer purchase. The credit was preferential, under the young farmers scheme. Since the head of the family was obviously more than 40 years old at that time, presumably his son applied for it. As mentioned previously, the interest rate for such a loan was very low, but the repayment period was long, 10 years in this case. Farms W6 and W7 declared receiving preferential credit for working capital almost every year. The 3.6% p.a. interest rate supported by farm W6 at that time is similar to the 2003 one mentioned by the banks interviewed. Farm W7 in opposite was charged a much higher rate of 10% p.a. for the same repayment period (the total interest rate was reported being 16% p.a.). This figure suggests that banks charged variable interest rates according to farmers, even for preferential credit.

A striking difference between the farm in Rzeszów area and both farms in Wrocław area concerns the collateral requirement. Only co-signers and proof of sufficient turnover were required for the Wrocław farms, while farm R1 was required monthly off-farm income as collateral in addition to one co-signer. It might suggest a difference between preferential and commercial credit, but still these findings appear contradictory to the indications of the banks interviewed mentioned above. It was indeed affirmed that a collateral was always required, except for working capital loans in the BGŻ branch. However the requirement of only co-signatures seems to be the most widespread, as found the World Bank in its 1999 survey (World Bank, 2001).

For all farmers the credit was channelled by a co-operative bank. Their choice of such a bank was motivated by the close location. But the interviews also suggested that these farmers were well known there because they had colleagues members of the bank. Farmers were required to come two or three times to the bank. Two visits were aimed at applying and signing the contract, and the co-signature happened either simultaneously or in a separate visit. As for monitoring, farmer R1 indicated that the commercial bank's officers were supposed to visit his farm at least twice during the repayment period, while farmers W6 and W7 with preferential credits acknowledged that only purchase bills were required as proof of the use of credit. This added to the number of visits to the bank. These findings suggest high indirect costs to be supported by farmers during the loan process, in terms of transport. Although not mentioned by the farmers, transaction costs also incur to farmers for valuing the collateral as

related during the banks' interviews. No farmers however admitted additional fees such as bribes. This is a surprising finding, as other studies reported non negligible such fees (in particular Patrick and Latruffe, 2003), and it might be due to the sensitive aspect of the question.

Finally only farmer R1 was satisfied with the amount he received, while the two others claimed that they were rationed in the amount. For working capital preferential credit the reason was the limit per hectare, and for the young farmer credit the reason was the 20% personal contribution. Farmer W7 claimed to have been rationed for 50% of his needs. These findings are not surprising, as it is intuitive that farmers would want to borrow much at the low subsidised interest rate. This is consistent with the World Bank's survey results, reporting that most of the rationed-in-amount farmers received their loan from banks channelling preferential credit (World Bank, 2001).

### **3.2.3. Reasons for not being indebted**

The four farmers who reported no credit in the last three years actually did not apply at all, even not earlier in the transition period. One reason invoked by all three non-applicant farmers in Rzeszów area was the high interest rates. Farmer R3 insisted that he knew from BGŻ that the interest rate was 28%, while farmer R4 indicated having contracted credit in 1989 but the interest rate raised in one year from 7% to 100% because of inflation. The interview later revealed that these farmers were not aware of preferential credits. The other reason, given by farmers R2 and R4, dealt with collateral. These farmers were afraid to lose their home and land, and farmer R2 also explained that he could not offer off-farm income as collateral since he had only variable seasonal income. Such behaviour of prior discouragement was also reported by Petrick *et al.* (2000), who also found that affected farmers were generally smaller (size of 8 ha on average).

As for farmer W5, the reason for his non-application was the upward limit, in the form of a fixed amount per hectare or of the 20% contribution. This farmer explained for example that he wanted to purchase land with preferential credit but that the land prices in the region were clearly higher than the upward limit. This farmer proposed two explanations for this low upward limit for preferential land loan. In his opinion, the first reason was that banks were afraid that the money they lent would be used for other purposes. Second, banks set the limit according to the official statistics on land prices. The farmer argued however that these statistics were not representative of the high prices in reality, since sellers and buyers

officially declared on the notary act a lower price in order to pay lower notary fees, the difference with the agreed price being paid afterwards over the counter.

In the World Bank's 1999 survey (World Bank, 2001), costs of borrowing, both direct and indirect, were viewed as the major explanation by non-applicants. In the present study the high interest rates were given as one major reason for not applying, but no farmers invoked the high costs incurring during the application process. Although these transaction costs existed for the farmers (particularly for visiting the bank and valuing the collateral), they were not considered as a discouragement.

#### **3.2.4. Investment without credit**

Farms R3 and R4 reported no investment during the whole transition period. These farmers admitted not to be interested in productive investment because they regarded any kind of production as unprofitable, not an isolated opinion in Poland (e.g. Châtelot, 2002). Moreover they did not intend to start other activities on-farm. For agro-tourism particularly they estimated that tourists were too rare in their isolated place.

Both other farms in Rzeszów area undertook some other investments in the past three years, namely small purchases for their agro-tourism activity (such as room furniture or bikes), but none for production. These investments were financed with their off-farm income, for 100% of the costs for farm R2 and 70% for farm R1, the rest being covered by borrowings from relatives. In opposite, all farms in Wrocław area undertook investment into production. Farm W5 financed with off-farm revenue purchases of a tractor for 8,500 zł (1,829 €) and of a cultivator for 1,500 zł (323 €). Farm W7 purchased a spreader for 2,000 zł (430 €) also with off-farm revenue. However, successful farm W6 used only farm profit to purchase 1 ha of land for 9,000 zł (1,936 €) and a weighting machine for 10,000 zł (2,151 €), and to construct the machinery shed for a cost of 30,000 zł (6,454 €). While internal resources are no doubt sufficient for this farm W6, it is interesting to see that the other farmers, although facing difficulties to self-finance, did not contract preferential or SAPARD credit to cover their investment costs. It confirms figures from earlier in the transition. In 1996 individual farmers' financing was covered for 98% by internal resources, and 60% of the small farmers had never resorted to a bank (Khitarišvili, 2000). This might suggest obstacles for small farms, such as complex procedures (in particular business loan), previous experience or large turnover. Józwiak (2001) also indicated that in 1995 preferential credits were granted to those farms which had large production potential, in order to avoid default. All these considerations add to

farmer R1's claim of being prevented from SAPARD application by the personal contribution requirement, and suggests that the distribution of government and European supported credits is biased towards large farms.

The investment levels, with or without credit, of the farms interviewed appeared to be relatively low in comparison with the French average figure of 16,500 € (excluding land investment) per farm in 2000 (Agreste, 2002). This is in line with the general claim that investment is low in Poland (Christensen and Lacroix, 1997; Ministry of Agriculture and Rural Development in Poland, 2003a), also confirmed by some empirical studies (Petrick *et al.*, 2002).

### **3.3. Opinion about the farming activity in Poland and EU perspective**

Except for farmer W6 that seems to be very successful in farming, all farmers clearly have unprofitable farming activity. Farmer W7 even admitted only deficit for his farm, compensated by his off-farm revenue. But he insisted to keep the farm because he claimed to be farmer at heart, and farming was a way of life for him. However, he affirmed that he would be happy if he could enlarge and invest more. The case study revealed that for the other farmers, their farm was their safety net. Farmer W5, although seeming successful in high level studies, acknowledged having started his own farm because he feared not to find a job after completion of his studies. Farmer R3, despite claiming to want to give up farming and find employment, would still keep a few hectares of land for self-consumption and KRUS if so. Farmers R4 simply waited for the KRUS pension while they were not very aged. In general the farmers interviewed disclosed the wish to enlarge but reported obstacles. In Rzeszów area, farmers considered that land was easy to buy but either too expensive or with a very low soil quality. In Wrocław area high prices were also regarded as a problem, but the major obstacle was the low land availability, as only little land was still available from the state and land from private sellers was extremely rare. Farmer W7 estimated that the potential sellers were waiting for the EU accession to sell because they felt that the institutions and the laws would be more stable. Besides constraints on the land market, it seemed that the farms faced severe obstacles on the output market. Even farmers R3 and R4, who rejected the idea of investing, stressed that they would invest and enlarge if they knew of a profitable production orientation. And all farmers agreed on the fact that the most important problem for their farming activity was the difficulty to sell their production in shops and supermarkets. According to them, all supermarkets were foreigners (mostly French) and had their own production chain and therefore gave no opportunities to Polish farmers. Besides, producer groups were very rare.



If all farmers interviewed admitted that farming was easier under communism because they could sell all their output and for good price, they nevertheless did not regret this time. From a private point of view, greater freedom for opinions, studies and entrepreneurship was the main reason. From a farming point of view, they felt that nowadays better machines were available, however hardly accessible for them due to the cost. Feelings towards the EU accession and the implementation of the Common Agricultural Policy (CAP) were mixed. Common fears were of higher input prices and of no improvement in the sale prospects due to a high production in current EU. Farmers were also afraid that they would not be able to reach the EU standard requirements and that preferential credits would disappear. Positive opinion was in the form of expectation of more secure institutions and laws, and of the creation of producer groups that would enable negotiating high output prices. But before all, farms declared to count greatly on EU support. They mentioned agro-tourism SAPARD aids with less strict requirements, CAP agricultural price support and mostly CAP area payments. Farmer W5 raised doubts that the aids would in reality reach farmers, but farmer W7 was relatively optimistic and estimated that farmers would be able to take more investment credit since they would have more collateral.

#### **4. Conclusion**

Most of the farms interviewed were representative of the Polish situation. They were small, generally unspecialised and little market integrated. Except for one farm that was very large (87 ha) and totally commercially oriented, farms were not highly indebted and did not report large investments. The limit in internal resources due to their semi-subsistence characteristic could be invoked as the reason for the low investment levels. However in a perfect capital market, this reason would not be valid, as internal and external sources of funds are perfect substitutes. This suggests that the rural credit market in Poland is affected by imperfections. However, the case study revealed no clear evidence of credit rationing, but rather that the Polish farming sector showed a low borrowing demand, with farmers discouraged of applying. Farmers' but also banks' interviews suggested that certain farmers had indeed restrictive access to credit. The personal contribution requirement and the application procedures for preferential and SAPARD credits create a bias in the beneficiaries of these loans, as small farmers do not have sufficient internal resources or credit experience. Besides, the minimum loan amount condition and high interest rate for commercial credit also repel small farmers. Next to a poorly functioning credit market, the study showed that the lack of

investment opportunities (constraints on land market, but mostly lack of sale prospects) was also a major reason for low investment levels. This case study therefore also confirmed both hypotheses proposed by the World Bank in its 1999 survey: the “credit market hypothesis”, that is to say an imperfect market, and the “uncertainty hypothesis”, that is to say an uncertain profitability of the investment (World Bank, 2001).

Policy recommendations can be drawn in two directions. Policies should concentrate on the allocation of credit. The termination of preferential credit after EU accession will be a first step, as it will end the distortion of credit distribution. Second, simplification of procedures for SAPARD benefits and bridge loans is required. The other policy recommendation arising from the case study’s findings is to give incentives for alternative farming such as organic, and diversification of farm activities such as agro-tourism. Poland’s natural assets and the current low use of fertilisers and chemicals are strong advantages, and some farmers are willing to undertake such changes. Combined with less restrictive access to investment aids for rural diversification, they would help unprofitable farmers to exit the farming sector and give space for more profitable farms to enlarge and find sales prospects.

## Abbreviations used

|        |   |
|--------|---|
| ARMA   | Agency for Restructuring and Modernisation of Agriculture         |
| AMA    | Agricultural Markets Agency                                       |
| APA    | Agricultural Property Agency                                      |
| BGŻ    | Food Economy Bank (Bank Gospodarki Żywnościowej)                  |
| CAP    | Common Agricultural Policy  |
| CEECs  | Central and Eastern European Countries                            |
| EU     | European Union  |
| ha     | hectare   |
| hr     | hour  |
| KRUS   | Farmers social insurance fund                                     |
| l      | litre   |
| NBP    | National Bank of Poland   |
| ODR    | agricultural extension service                                    |
| p.a.   | <i>per annum</i>  |
| PC     | Personal Computer   |
| SAPARD | Special Accession Programme for Agriculture and Rural Development |
| t      | tonne   |
| US \$  | United States dollar  |
| zł     | Polish zloty  |
| €      | euro  |

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Map 1: Topographic map of Poland



Table 1: Characteristics of the banks surveyed

Y: Yes - N: No

| Area                                    | Rzeszów         | Wrocław         |                           |                                 |
|---|-----------------|-----------------|---------------------------|---------------------------------|
| <b>Bank type</b>                        | Commercial bank | Commercial bank | Co-operative bank         | BGŻ branch                      |
| <i>Types of credit offered</i>          |                 |                 |                           |                                 |
| <b>Preferential credit</b>              | N               | N               | Y (working capital)       | Y (investment, working capital) |
| <b>SAPARD bridge credit</b>             | Y               | N               | Y                         | N                               |
| <b>Commercial credit</b>                | Y               | Y               | N                         | N                               |
| <i>Loan collaterals</i>                 |                 |                 |                           |                                 |
| <b>Requirement (% of the principle)</b> | 200             | 100             | 200                       | no answer                       |
| <b>Land accepted?</b>                   | N               | N               | Y                         | Y                               |
| <b>Co-signers</b>                       | sometimes       | always          | for working capital loans | sometimes                       |
| <i>Existence of rationing</i>           |                 |                 |                           |                                 |
| <b>Total rationing</b>                  | sometimes       | sometimes       | sometimes                 | no answer                       |
| <b>Partial rationing</b>                | N               | N               | sometimes                 | no answer                       |



Table 2: Characteristics of preferential credit and SAPARD bridge credit offered in 2003 by the banks surveyed

Y: Yes - N: No

|                               | Preferential (subsidised) |                               |  |                             |                           | SAPARD bridge                                |
|-------------------------------|---------------------------|-------------------------------|--|-----------------------------|---------------------------|--|
| Purpose                       | Investment for production | Investment for specialisation | Investment for production from young farmers | Investment in land          | Working capital           | Investment for production or diversification |
| Conditions                    | –                         | –                             | less than 40 year old                        | –                           | –                         | EU standard conditions                       |
| Personal contribution         | 20-30%                    | 20-30%                        | 20-30%                                       | N                           | N                         | 10% (20-30%) <sup>a</sup>                    |
| Upper limit in the principle  | N                         | N                             | N  | 5,400 zł/ha<br>(1,244 €/ha) | 334.50 zł/ha<br>(77 €/ha) | N  |
| Interest rate total p.a.      | 7.81%                     | 7.81%                         | 7.81%  | 7.81%                       | 6.88%                     | 7.90% (2-5%) <sup>a</sup>                    |
| Interest rate for farmer p.a. | 3.90%                     | 1.95%                         | 1.56%  | 1.56%                       | 4.00%                     | 7.90% (2-5%) <sup>a</sup>                    |

<sup>a</sup> Without brackets: indicated by the co-operative bank. Between brackets: indicated by the commercial bank in Rzeszów area.

Table 3: Characteristics of the farms interviewed

Y: Yes - N: No M: Male - F: Female

| Farm #   | R1  | R2   | R3  | R4  | W5   | W6   | W7  |
|--|---|--|---|---|--|--|---|
| <b>Location (area)</b>                         | Rzeszów   | Rzeszów  | Rzeszów   | Rzeszów   | Wrocław  | Wrocław  | Wrocław   |
| <i>General characteristics</i>                 |   |  |   |   |  |  |   |
| <b>Farm born in:</b>                           | 1901  | 1985   | 1920  | 1923  | 1996   | 1964   | 1975  |
| <b>Head of family started on this farm in:</b> | 1970  | 1985   | 1987  | 1988  | 1996   | 1978   | 1975  |
| <b>Farm's birth</b>                            | family farm   | land given by F's father   | family farm   | family farm   | 5.11 ha given by grandmother, rest purchased     | family farm  | 5 ha given by F's father, rest purchased  |
| <b>Head of family</b>                          | M<br>40 years old<br>born on farm<br>primary school<br>+ courses in agriculture | M<br>43 years old<br>born on farm<br>technical school of agriculture | F<br>45 years old<br>born on farm<br>secondary diploma in agriculture | F<br>40 years old<br>born on farm<br>primary school | M<br>27 years old<br>born on farm<br>PhD student | M<br>44 years old<br>born on farm<br>secondary diploma in energy | M<br>54 years old<br>born on farm<br>primary school<br>+ courses in agriculture |

| <i>Land</i>                 |  |  |  |   |  |   |                               |
|-----------------------------|--|--|--|---|--|---|-------------------------------|
| <b>Total land area (ha)</b> | 6.50   | 2.30   | 8  | 5   | 16.95  | 87  | 10                            |
| <b>Owned land area (ha)</b> | 2.40   | 2.30   | 8  | 5   | 15.55  | 47  | 10                            |
| <b>Land titles</b>          | Y  | Y  | Y  | Y   | Y  | Y   | Y                             |
| <b>Land rent (/ha)</b>      | 240 zl (56 €)<br>per 4 months  | –  | –  | –   | 100 \$ (119 €)<br>per year   | variable                                      | –                             |
| <b>Number of plots</b>      | 2  | 2  | 8  | 7   | 7  | 40  | 4                             |
| <b>Land value (/ha)</b>     | 2,500 zl<br>(538 €)  | 3,000 zl<br>(645 €)  | 3-5,000 zl<br>(645-1,076 €)                                      | no answer   | 12,000 / 10,500<br>9,000 / 1,800 zl<br>(2,581 / 2,259 /<br>1,936 / 387 €)      | 9,000 zl<br>(1,936 €)                         | no answer                     |
| <i>Production</i>           |  |  |  |   |  |   |                               |
| <b>Output mix</b>           | (organic)<br>wheat, oats,<br>vegetables,<br>raspberries,<br>deers, emus,<br>crabs, honey | corn, goats,<br>rabbits,<br>chickens, carps,<br>crabs, honey | rye, oats, beets,<br>3 milking cows,<br>pigs, chickens,<br>ducks | oats, rye,<br>potatoes,<br>strawberries,<br>1 milking cow,<br>1 pig, chickens,<br>ducks | corn, winter/spring<br>wheat, parsley (for<br>seeds), beetroot<br>(for seeds), | potatoes, other<br>vegetables, corn,<br>wheat | wheat, barley<br>(for fodder) |

|  |   |                                     |                                  |                                |  |                             |  |
|--|---|-------------------------------------|----------------------------------|--------------------------------|--|-----------------------------|--|
| <b>Uses of output</b>                              | 60% in shops<br>20% on market<br>20% self-cons. | 100% self-cons.                     | 20% on market<br>80% self-cons.  | 5% on market<br>95% self-cons. | 100% to ARR &<br>private buyers  | 70% to ARR<br>30% on market | 100% to private<br>buyers              |
| <b><i>Labour</i></b>                               |   |                                     |                                  |                                |  |                             |  |
| <b>Number of persons:</b>                          |   |                                     |                                  |                                |  |                             |  |
| <b>working permanently</b>                         | 2 (+ family)                                    | 2                                   | 2                                | 1 (+ family)                   | 1 (+ father)   | 4                           | 2                                      |
| <b>working seasonally</b>                          | –   | –                                   | –                                | –                              | 1-2  | 10                          | –                                      |
| <b>Labour force level</b>                          | sufficient                                      | sufficient                          | sufficient                       | sufficient                     | sufficient   | sufficient                  | sufficient                             |
| <b>Wage of hired workers</b>                       | –   | –                                   | –                                | –                              | fertiliser: 4-5 zl/hr<br>(0.86-1.07 €/hr)<br>harvest: 250 zl/ha<br>(54 €/ha) | 5 zl/hr (1.07<br>€/hr)      | –                                      |
| <b><i>Other activity on farm, off-farm job</i></b> |   |                                     |                                  |                                |  |                             |  |
| <b>Other activity on farm</b>                      | agro-tourism                                    | agro-tourism                        | N                                | N                              | N  | N                           | N                                      |
| <b>Off-farm job</b>                                | M+F: employed<br>in town                        | M: seasonal<br>worker in<br>Germany | M: employed in<br>the rural area | N (seeks)                      | PhD student  | N (don't seek)              | M+F: self-<br>employed in<br>handcraft |

| <i>Farm assets</i>                  |                           |                  |                        |                  |                        |                                   |                  |
|-------------------------------------|---------------------------|------------------|------------------------|------------------|------------------------|-----------------------------------|------------------|
| <b>Bank account</b>                 | current, savings          | N                | N                      | N                | current                | current, savings                  | current, savings |
| <b>Bookkeeping</b>                  | Y                         | N                | N                      | N                | Y                      | Y                                 | N                |
| <b>PC</b>                           | Y                         | Y                | N                      | Y                | N                      | Y                                 | Y                |
| <b>Cars</b>                         | N                         | 1                | 1                      | N                | 1                      | 2 + 1 truck                       | 1                |
| <b>Tractors (age)</b>               | 1 (5 years)               | 1 (30 years)     | 2 (19,23 years)        | 1 (26 years)     | 1 (16 years)           | 7 (15-50 years)                   | N                |
| <b>Other machinery</b>              | everything needed         | N                | all except harvester   | N                | everything needed      | everything needed                 | N                |
| <b>Buildings (besides the home)</b> | bike shed                 | livestock stable | barn, livestock stable | livestock stable | livestock stable, barn | drying shed, silo, machinery shed | home             |
| <i>Revenue</i>                      |                           |                  |                        |                  |                        |                                   |                  |
| <b>Share in gross revenue:</b>      |                           |                  |                        |                  |                        |                                   |                  |
| <b>sales</b>                        | 30%                       | –                | 20%                    | 5%               | 60%                    | 100%                              | 10%              |
| <b>other farm activity</b>          | 40%                       | 10%              | –                      | –                | –                      | –                                 | –                |
| <b>off-farm job</b>                 | 30%                       | 90%              | 20%                    | –                | 40%                    | –                                 | 90%              |
| <b>KRUS</b>                         | –                         | –                | 60%                    | 95%              | –                      | –                                 | –                |
| <b>Subsidies</b>                    | SAPARD for producer group | N                | N                      | N                | N                      | fuel (20 l/ha owned)              | N                |

| <i>Credit</i>                        |                   |                |                      |                               |                     |                                  |                     |
|--------------------------------------|-------------------|----------------|----------------------|-------------------------------|---------------------|----------------------------------|---------------------|
| <b>Number of credits received</b>    | 1 (bike shed)     | N              | N                    | N                             | N                   | 2 (working capital) 1<br>(dryer) | 2 (working capital) |
| <b>Is credit necessary? (reason)</b> | Y                 | Y              | N<br>(no investment) | N<br>(no investment)          | N<br>(off-farm job) | Y                                | N<br>(off-farm job) |
| <b>Easy to get credit? (reason)</b>  | N (interest rate) | N (collateral) | N (interest rate)    | N (interest rate, collateral) | N (upward limit)    | Y for preferential               | Y for preferential  |
| <b>Afraid to lose collateral?</b>    | N                 | Y land + home  | N                    | Y home, N land                | no answer           | collateral never required        | N                   |
| <b>Borrowed from someone else?</b>   | colleagues        | N              | N                    | family                        | N                   | N                                | N                   |

Table 4: Prices and yields of crops, of the farms interviewed and averages for Poland and France

n.a.: non available

|                         |                | <b>Farm W5</b>       | <b>Farm W6</b>       | <b>Farm W7</b> | <b>Poland's average<sup>a</sup></b> | <b>France's average<sup>b</sup></b> |
|-------------------------|----------------|----------------------|----------------------|----------------|-------------------------------------|-------------------------------------|
| <b>Sale prices (/t)</b> | Corn           | 450+110 zl (97+24 €) | –                    | –              | n.a.                                | 114 €                               |
|                         | Spring wheat   | 450+110 zl (97+24 €) | 450+110 zl (97+24 €) | 450 zl (97 €)  | 436 zl (94 €)                       | 107 €                               |
|                         | Barley         | –                    | –                    | 350 zl (75 €)  | 437 zl (94 €)                       | 95 €                                |
| <b>Yields (t/ha)</b>    | Corn           | 8.9                  | 8-12                 | –              | n.a.                                | 9                                   |
|                         | Spring wheat   | 5.5                  | 5-7                  | 6.0            | 3.6                                 | 6.3                                 |
|                         | Winter wheat   | 4                    | –                    | –              | n.a.                                | n.a.                                |
|                         | Barley         | –                    | –                    | 4.0            | 3.2                                 | 6.7                                 |
|                         | Early potatoes | –                    | 5-15                 | –              | n.a.                                | 27                                  |
|                         | Late potatoes  | –                    | 50                   | –              | n.a.                                | 43.5                                |

<sup>a</sup> Source: GUS, 2003.

<sup>b</sup> Source: Eurostat-NewCronos, 2002.

Table 5: Characteristics of the loans received by the farms interviewed

Y: Yes - N: No

| <b>Farm #</b>                         | <b>R1</b>           | <b>W6<sup>a</sup></b>  | <b>W6</b>                | <b>W7<sup>a</sup></b> |
|---------------------------------------|---------------------|------------------------|--------------------------|-----------------------|
| <b>Date of loan</b>                   | 2002                | 2002 and 2000          | 2001                     | 2001 and 2000         |
| <b>Purpose</b>                        | bike shed           | working capital        | dryer                    | working capital       |
| <b>Loan volume</b>                    | 4,000 zł<br>(860 €) | 24,000 zł<br>(5,163 €) | 150,000 zł<br>(32,269 €) | 5,000 zł<br>(1,076 €) |
| <b>Type of loan</b>                   | commercial          | subsidised             | young farmer             | subsidised            |
| <b>Interest rate p.a.</b>             | about 16%           | 3.6%                   | 1.8%                     | 10%                   |
| <b>Collateral</b>                     | 3 months wage       | N                      | N                        | N                     |
| <b>Co-signers</b>                     | 1                   | 2                      | 3                        | 2                     |
| <b>Business plan</b>                  | Y                   | N                      | Y                        | N                     |
| <b>Repayment period</b>               | 2 years             | 1 year                 | 10 years                 | 1 year                |
| <b>Number of visits to the bank</b>   | 2                   | 3                      | 3                        | 2                     |
| <b>Waiting time before acceptance</b> | 3 days              | 2 weeks                | 4 months                 | 1 week                |



|  |                   |              |              |              |
|--|-------------------|--------------|--------------|--------------|
| <b>Bank monitoring</b>                   | at least 2 visits | bills        | bills        | bills        |
| <b>Bank type</b>                         | co-operative      | co-operative | co-operative | co-operative |
| <b>Reason for the choice of the bank</b> | nearest           | nearest      | nearest      | nearest      |
| <b>First loan in bank</b>                | Y                 | N            | N            | N            |
| <b>Rationed in amount</b>                | N                 | Y            | Y            | Y            |

<sup>a</sup> For these farms, both loans had the same characteristics.

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