

## **Current level and trends of individual farms' development: results of survey in Tambov oblast**

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Russian economic publications commonly assert that the lack of reliable statistical information on individual farms' performance disguises the actual situation in this sector of farm economy. It's difficult to disagree with this statement since attempts of state statistical bodies to carry out voluntary anonymous questioning of individual farms do not provide reliable and complete information on the ongoing processes.

The individual farms' sector remains quite closed for scientific investigation. First, due to the lack of professional knowledge the absolute majority of farmers does not make an economic analysis of their farms' performance and does not keep regular accounting records. Second, data submitted by farmers to control and revision bodies is very far from the real one. Third, farmers carry out a part of input purchase and output sale transactions non-officially and thus have no documentary confirmation thereof. Fourth, farms are very indisposed to contact with researchers whom they do not know personally fearing leakage of confidential information.

The information basis of this study is: 1) data of primary accounting in 56 individual farms in Tambov oblast within the period from 1992 to 2002 accumulated by authors in the course of keeping records on transactions including non-official ones; 2) results of profound economic and statistical study of 101 individual farms in Tambov oblast conducted in 2000-2001; 3) practical experience of authors gained in the process of own individual farming and administering of four research and consultation bureaus founded in different districts of Tambov oblast within the period from 2000 to 2003.

### **1. Dynamics of individual farming development**

Intense development of individual farming in Tambov oblast was initiated by the adoption at the end of 90's of Federal Law "On peasant (individual farmer) farm". The oblast's authorities showed no initiative to support it. At the same time there wasn't any active counteraction to this process from their side.

The number of individual farms in Tambov oblast intensely grew in 1992-1993. Beginning from 1994 it steadily declines. Nevertheless, the total area and share of land used by farmers are expanding (except for a small shrinkage in the mid-90's). Still, the share of individual farms in Tambov oblast's gross agricultural output remains insignificant – below 5%. It's noteworthy, that their share in used agricultural land has always exceeded the share in gross output 1.3-3.7 fold.

Beginning from 1994 when large-scale soft crediting of farmers from the federal budget was discontinued the number of individual farms in Tambov oblast started to decrease and, most importantly, their performance indicators sharply deteriorated. The oblast budget was unable to provide an adequate substitute for soft federal credits.

Still, it wouldn't be correct to tie this complicated problem only to the availability of soft budget support. The intense growth of individual farms' number at the beginning of 90's was due to then non-exhausted "human" potential including a relatively small (5-7%) social stratum of rural residents willing and ready to organize individual farms and to bear all the responsibility and risk of independent farming. This social stratum could create in Tambov oblast from 5 to 7 thousand individual farms.

From this point of view private farming in Tambov oblast developed in the following way. By the end of 1993 the total number of organized in 1991-1993 individual farms amounted to 5565 including 899 that had already stopped operating. In other words, even in 1994 the “human” potential for organizing new individual farms was already largely exhausted. At the same time after the abrogation of soft credit support economic situation seriously deteriorated resulting in bankruptcy of some of such farms. The corresponding reduction of their number could not be offset by an inflow of new farmers.

Altogether not less than 5986 individual farms were organized in Tambov oblast in 1991-2002. Of them only 3210 are currently registered as operating while not less than 2776 officially discontinued their activities during the same period. Although in the last three years the total number of individual farms in the oblast remains almost unchanged (3282-3210), in the nearest time it will decrease. The matter is that not a small part of them exist only formally while their operation has actually stopped. According to opinion of tax bodies’ specialists the share of such farms is nearly 40%. We find this estimate exaggerated since it’s based on the number of farms that do not submit tax records regularly and in due time. We think that expert estimates of district associations of individual farms are more exact – 10-20%.

## **2. Land issues**

On the average each of the surveyed individual farms uses 86.1 hectares of arable land. From the legal point of view this land consists of three parts: 1) owned land (24.2 ha); 2) land rented from the distributable reserve (24.0 ha); 3) land rented from individuals (37.9 ha).

The size of tax that farmers pay on owned land is so far not very burdening: 24 rubles per ha in 2001 and 36 rubles per ha in 2002. Till 2002 the rent on land from distributable reserve equaled the land tax. But beginning from 2002 it grew noticeably up to an average of 150 rubles per ha (from 120 to 180 rubles per ha). The actual money size of payment for land rented from individuals in 2001-2002 amounted to approximately 315 rubles per 1 ha but its main part is paid in forage grain (1600 kg per ha).

So, the renting of land shares from individuals is 1.8-2.6 fold more expensive than renting of land from distributable reserve. Still, farmers prefer to rent land shares from individuals. An important factor here is the possibility to pay in-kind instead of cash rent. Farmers frequently break their contractual obligations or pay with notable delays, and that is also a plus for them. Violation of rent terms by farmers usually does not entail cancellation of agreements with lessors. Generally, farmers have plenty of offers from land share holders.

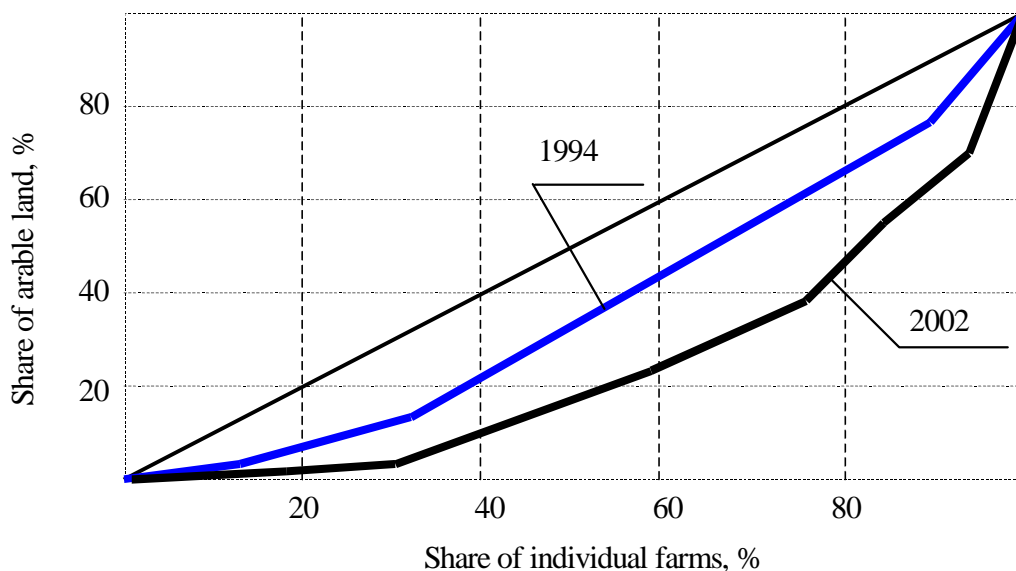
The expansion of cultivated areas through purchase of farm land is not yet spread. It obviously could not take place (at least officially) before the start of 2003 since there were no corresponding provisions either in the oblast or in the federal legislation. But we think that there were no objective factors encouraging farmers to buy land as well. First, according to the official data in the last 12 years at least 535 thousand ha of arable land were set aside in Tambov oblast. This area is nearly two times larger than the total land used by oblast’s farmers. Second, given an abundant supply of land for rent on rather favourable terms, there is no objective need to buy it. Third, farmers do not usually have disposable funds for this purpose.

The attitude of farmers towards possibility to buy and sell agricultural land is quite discrepant and non-unanimous. Still, it's rather positive than negative. However, the reason for it is not the wish to buy land but an explicit or implicit wish to sell it and thus settle the most urgent problems.

Examining the size of land used by individual farms in Tambov oblast from the foundation of first of them, it's easy to notice that their average area constantly grows. However, several facts should be taken into account when assessing this dynamics. First, beginning from 1993 the average arable land area in these farms did grow 2.3 fold – from 37.3 ha in 1993 to 86.1 ha in 2002. At the same time the area of fallow land expanded as much as 70 fold – from 0.4 ha in 1993 to 27.9 ha in 2002. So, less fallows (into which farmers often include simply non-cultivated land) the size of planted areas is up only 1.6 fold.

Second, it would be a great simplification to believe that the land expansion trend is common for all individual farms without exception. The dynamics of land use by different groups of individual farms is much more complicated. First of all, they get more and more differentiated by the size of used land. For instance, as of 01.01.2003 7.1% of farms have arable land area exceeding 250 ha and control 29.2% of individual farms' land. On the other hand, 28.6% of farms having each less than 30 ha of arable land control only 4.2% of its total area. Within the period from 1994 to 2002 the group of farms having less than 15 ha of arable land did not diminish – on the opposite, it has expanded 1.7 fold. The share of farms using over 100 ha of arable land changed most noticeably. While in 1994 it equaled only 3.6%, in 2002 it was already 24.9%. Lorenz curves based on 1994 and 2002 data prove the growing differentiation of individual farms by the area of used land (Picture 1).

**Picture 1. Arable land distribution curves**



To our mind, the obtained data allows supposing a stable trend of intra-division of individual farms into at least two parts. First is the one that using A.V.Chayanov's

terminology can be with certain reservations called “working peasant farms”. The second includes farms that can be called entrepreneurial.

### **3. Output production and marketing**

The basic specialization of the absolute majority of individual farms in Tambov oblast is crop production. Grains (barley and wheat) prevail in the structure of areas planted – in 1993-2002 they occupied 48.1% of the total arable land, or 70.8% of areas planted in individual farms. The second place by the area planted belongs to sunflower (10.9% and 16.0%, respectively), the third – to buckwheat (6.7% and 9.8%, respectively). Altogether these crops account for 96.6% of the total areas planted. The share of fallows averaged 32.0% of the total arable land in individual farms. It's noteworthy that while in 1993 only 6% of individual farms had fallows, in 2002 their share grew up to 79%.

The current organization of production process requires, first, quite a large area (about 30%) for winter crops and, second, large fallows equaling at least a sum of areas planted in sunflower and buckwheat (about 20%). Ideally, given not the agrotechnical norms but the actual individual farms' production organization and available inputs, the area of fallows should be even bigger – by at least 10% since this lifts the need for spring ploughing.

In fact, we see a classical Russian three-field practice: fallow – about 30%, winter grains – slightly over 30%, different summer crops – about 40%. This is an evidence of extremely extensive land use in individual farms. And this is also one of the causes (certainly, non-proclaimed) explaining the wish to expand land use. The sum total of the named causes naturally affects quantitative and qualitative output indicators.

According to the official statistical data grain yields in individual farms average 89% of that in large corporate farms. But our sample studies showed that deviations of actual grain and sunflower yield figures from the official ones vary from “+” 59.4% to “-” 74.4%. In 37.5% of cases the actual yields were higher and in 62.5% of cases – lower than the official ones. At the same time the actual areas planted in individual farms were 36% above the official statistical indicators. The actual average farmers' yields in 2001-2002 were: wheat – 13.5 cwt/ha, barley – 12.6 cwt/ha, sunflower seeds – 4.3 cwt/ha, buckwheat – 9.8 cwt/ha. The current actual grain yields in individual farms equal only 67% of the Tambov oblast average before the reforms (1986-1990). Unfortunately, we do not have reliable data on actual yields in large corporate farms. Nevertheless, it's obvious that grain yields there are higher than in individual farms.

On the average in 2001-2002 one individual farm produced 44.5 tons of grain, 1.5 tons of buckwheat, 3.5 tons of sunflower seeds. The share of marketed output amounted to 56.6%. The structure of in-farm output use is as follows: in-kind payments for land rented from individuals account for 12.2% of output, exchange of ordinary grain for seeds – 26%, household consumption – 5.2%.

In 2001-2002 farmers used the following channels for marketing their output: state unitary enterprise “Oblast food corporation subordinate to the agricultural department of oblast's administration” – 12.9% of the marketed output, private merchandisers of farm products – 39.8%, wholesalers (oblast's elevators and representations of similar outside entities) – 25.2%, corporate farms (fish-breeding farms, poultry farms) – 6.3%, processors (oil extracting plants, mills, etc.) – 10.3%, individuals (residents of the same village) – 5.5%. Proportions between marketing channels are not yet stable,

and their shares may vary greatly depending on the current situation. For instance, while in 2001 farmers sold to the food corporation 24.1% of marketed output, in 2002 its share was only 3.5%.

The choice of marketing channels is influenced by a whole number of factors. And it's not always the nominal purchase price that serves the key criterion for choosing a buyer. The choice is to an important degree determined by the urgent need for money, impossibility of long-term storage of harvested crop and its poor quality, the level of buyer's requirements to the biological quality of output and its physical condition, the way and terms of payment, capacity of a certain marketing channel.

The combination of all these factors makes private merchandisers the most popular market operators for individual farms. In the named years they bought 92.1% of sunflower seeds marketed by farmers, 79.5% of buckwheat, 41.7% of barley, 27% of wheat. The volumes of sales through them are growing: in 2001 they accounted for 29.7% of all sales, in 2002 – already for 48.3%. It's symptomatic that this trend is observed for all kinds of agricultural output. In 2002 as compared with 2001 the share of this category of buyers in marketing wheat was up 1.42 fold, in marketing barley – 2.57 fold, sunflower seeds – 1.22 fold, buckwheat – 2.0 fold. As a result in 2002 the surveyed individual farms sold all buckwheat and sunflower seeds to merchandisers.

#### **4. Available inputs**

**Labour.** The basic source of labour in an individual farm is the farmer's family. The number of family employees averages 2.25 persons. The principal worker is the head of the individual farm. According to the statistical average it is a man aged from 35 to 50 years (44 years on the average). Not more than 15.8% of heads of farms had no previous experience in agriculture. Others before organizing their own farm were engaged in farming for an average 11 years. The main works are done by the farm's head. Family members usually do works requiring no skills.

20% of individual farms hire labour. Usually they hire workers for doing single-time and non-skilled works. These works take short period of time – from several hours to several days. They do not require professional knowledge and skills, but the farmer cannot cope with them alone. The summed length of using such hired workers during a calendar year is very small – on the average 1.1 person/month. The payment is usually made in the form of services (to plough garden, to mow and transport hay, firewood, coal, etc.) or forage grain (primarily leftovers after primary grain processing).

Such relations are never officially recorded and in rural areas are not usually regarded as hiring of labour. Both farmer and worker define them as a kind of neighborly mutual assistance.

As to hiring of skilled labour, 12% of farmers report respective need. However, hiring of full-time skilled workers is not yet widely spread. It should be noted that in recent years the attitude of potential employees from among rural residents towards hired labour has radically changed. It's no longer considered as something shameful and non-suitable for a skilled and respectable worker. Moreover, the excess of labour and the shortage of money incomes in rural areas made hired workers very non-pretentious as regards the size of payment for and the kind of work, as well as making the agreement with employer legal: payment is usually made only after the output is sold, duties include servicing farmer's household, no official labour contract is signed.

Assessing the general prospects for hired labour use in individual farms, one can expect its steady increase. On the one hand, the number of relatively large individual farms that objectively need hired (including skilled) labour is growing. On the other hand, from 1990 to 2000 the number of farm employees in Tambov oblast reduced 2.1 fold, or by 83.5 thousand persons. This naturally entailed plenty of excessive labour that will be somehow used in individual farms, but one should not expect that slightly over 3000 individual farms could become a noticeable source of job opportunities in rural areas.

**Fixed assets.** The analysis of fixed assets' structure reveals, that machinery and equipment account for 90% of their cost. It means that there is actually no production infrastructure in individual farms. It's noteworthy, that in the pre-reform period the corresponding ratio in large collective and state farms was 1:4 in favour of production infrastructure.

On the average one individual farm has 0.7 caterpillar tractors, 0.61 wheel tractors, 0.61 grain harvesters, 0.86 cargo cars. 88% of caterpillar tractors, 64% of wheel tractors and 62% of grain harvesters are used 2-5 years over the depreciation term.

Due to objective reasons the actual productivity of tractors and machines in individual farms is several fold below the one stated in farm machinery catalogs. Adjusted for this, the actual sufficiency of basic machinery in individual farms (even including non-registered and over-depreciated machines) is currently as follows: tractors – 66%, cargo cars – 86%, grain harvesters – 61%. This is one of the causes why individual farms perform only 43% of the basic technological operations required for growing crops, and only 33% of them are performed within terms prescribed by agrotechnical norms.

However, both theoretically and practically the equipping of each individual farm with a full set of machines and equipment is irrational and impossible. Unfortunately, insolvency of most individual farms does not allow them to fully benefit from fieldwork services offered by different firms. At the same time joint use of machinery on the principles of neighborly mutual assistance is spread rather widely. Up to 80% of individual farms are to some extent engaged in such inter-farm cooperation.

**Inventories.** In 1992-2002 farmers on the average spent 63.3% of receipts on buying fuels, seeds, spare parts, fertilizers and other inputs. 66% of these costs went on purchase of fuel. Expenditures on this group of inputs are surely too large not only in relative but also in absolute terms. The cause is not only the obvious disparity between prices for grain and prices for purchased inputs. Expenditures are largely shaped by organizational factors, lack of production infrastructure and needed equipment, very high wear of available machinery. For instance, since legal schemes of short-term credit are inaccessible for farmers, they have to use commodity credits raising price for fuel (e.g. in 2002 by 27-83%). The lack of storages for fuel in individual farms lifts expenditures on buying it by 10-66%. Due to the shortage of necessary equipment and storage facilities farmers have to purchase 62% of seeds from outside suppliers.

## **5. Economic performance**

The structure of an individual farm receipts looks as follows (1992-2002 average): receipts from marketing primary and processed agricultural products – 86.2%,

receipts from sale of fixed assets – 9.1%, non-agricultural receipts – 4.7%. Receipts from farm production obviously dominate.

Agricultural production costs consist of expenditures on purchase of inputs (44.2% including 29.7% spent on fuels and oils, 6.4% - on seeds, 5.6% - on spare parts, 2.5% - on other inputs), outside services (4.2%), depreciation deductions (44.8%) and other expenditures (6.8%).

We find that it's not fully correct to calculate for individual farms such indicators as profit (loss) and profit rate, since such an essential item as "Payment for labour" is excluded from production costs. Still, our calculations present the following picture of individual farms' economic performance (Table 1):

**Table 1. Profit (loss) from production and marketing of agricultural output**

Calendar year	Gross receipts, rubles	Production costs, rubles			Taking into account depreciation deductions			Less depreciation deductions	
		Money expenditures	Depreciation	Total	Profit (<<=> loss), rubles	Profit (loss) rate, %	Share of profitable farms, %	Profit (<<=> loss), rubles	Profit (loss) rate, %
1	2	3	4	5	6	7	8	9	10
1992	855	283	29	312	543	174,0	100,0	522	202,1
1993	2612	828	188	1016	1596	157,1	75,0	1784	215,5
1994	4035	1431	2613	4044	-9	-0,2	35,7	2604	181,9
1995	5139	4189	7982	12171	-7032	-57,8	16,7	950	22,7
1996	12368	7657	24138	31795	-19427	-61,1	6,7	4711	61,5
1997	24801	16722	25718	42440	-17639	-41,6	10,7	8079	48,3
1998	25492	16539	36076	52615	-27123	-51,5	7,1	8953	54,1
1999	51940	55697	28754	84451	-32511	-38,5	7,1	-3757	-6,7
2000	46652	39961	25727	65688	-19036	-29,0	10,7	6691	16,7
2001	50440	52302	19331	71633	-21223	-29,6	10,7	-1862	-3,6
2002	35229	51677	21721	73398	-38169	-52,0	14,3	-16448	-31,8

The above data shows that production and marketing of agricultural products was profitable only in 1992-1993, the average profit rate being 165.6%. In the following period (1994-2002) it becomes loss-making, the average loss rate being 40.1%. However, less depreciation deductions farmers' money expenditures were not recouped only in 1999 and 2001-2002 (column 9 of Table 1).

Of particular interest is the analysis of money flows in individual farms. Their principal indicators in respective records are "Cash" and "Need". The per annum "Cash" consists of opening money balance, current incomes (receipts) within a year and receipts from outside (subsidies, compensations, reimbursed VAT). "Need" includes current expenditures, purchase of fixed assets, taxes and mandatory payments.

The difference between "cash" and "need" determines the availability or deficit of cash in a farm. Its sum with the balance of loans (difference between loaned funds and payments on loans) determines deficit or surplus of money in a farm. A part of money surplus farmers use for family needs and the remainder is the closing money balance for the current year.

As shown in Table 2, the 2003 opening money balance of an individual farm averages 1218 rubles. At the same time its debts on earlier received credits amount to 8055 rubles. So, at the beginning of 2003 an average individual farm was actually insolvent.

In 1992-1993 the deficit of money was compensated by centralized soft credits: the difference between loaned funds and expenditures on paying debts was positive. In 1994-1998 individual farms had although small but a surplus of cash that was used for settling credits and for family needs. In 1999 the deficit of cash equaled 2194 rubles. Since it was impossible to get long-term credits (which was the case in 1992-1993), the deficit was covered by farmers' own funds. The largest money deficit in individual farms was observed in 2002: the difference between expenditures and receipts amounted to 11781 rubles. It was partially offset by received and overdue loans, and partially – by farmers' own funds.

## **Conclusion**

The specifics of current stage of individual farming development is the combination of several mutually enhancing adverse factors. First, it's a negative flow "from above" – non-efficient and non-sufficient support to farmers both on the federal and on the local levels.

Second, it's a negative flow "from below" made of two components. The first component is the negative experience of ruined individual farms. In 1991-2002 every second of the organized individual farms stopped operating. The second component is very poor economic performance of currently operating individual farms. The absolute majority of them is loss-making and survives mainly due to squandering depreciation deductions.

This flow of own negative experience or of negative experience of close people engenders negative attitude to individual farming in rural communities. From a bright promising alternative to the system of collective and state farms it transformed into a resonator aggravating socially depressed perception of reality by rural residents.

At present there are no objective factors for a sizable increase of individual farms' number. This is first of all due to the exhaustion of their social basis – individual farming has actually fully encompassed quite a narrow social stratum (5-7%) of rural residents inclined to active and risky entrepreneurship. Any noticeable trend towards transformation of household farms into individual private farms in the current situation is also unlikely. Given the effective legal environment such changing of status promises nothing good for the household farmer – on the opposite, he becomes burdened with plenty of bureaucratic and organizational complications (registration, accounting, record-keeping, taxation, etc.).



**Table 2. Money balance sheet in individual farms, rubles**

№	Indicator	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1	Opening money balance	0	653	851	1344	2296	1816	1502	3524	3726	7069	2925	1218
2	Cash receipts within a year – total	1464	3413	8343	10066	17149	29172	29711	59442	52479	59458	49255	
	Including:												
	- receipts from marketing agricultural output	855	2612	4035	5139	12368	24801	25492	51940	46652	50440	35229	
	- receipts from non-agricultural activities	130	143	591	496	1652	328	96	172	1055	920	1100	
	- receipts from sale of fixed assets	6	21	2802	3025	1596	2000	1752	10	195	210	708	
	- other receipts (subsidies, reimbursed VAT, etc.)	473	637	915	1406	1533	2043	2371	7320	4577	7888	12218	
3	Cash needs – total	2614	3955	5645	10470	14909	22340	22818	65059	47084	61280	63961	
	Including:												
	- current agricultural production expenditures	283	828	1431	4189	7657	16722	16539	55697	39961	52302	51677	
	- current non-agricultural expenditures	130	38	255	292	1500	150	52	85	510	578	974	
	- purchase of fixed assets	1984	2799	2777	4417	4176	2623	3189	2406	2363	3449	7868	
	- other (taxes, mandatory payments, etc.)	217	290	1182	1572	1576	2845	3038	6871	4250	4951	3442	
4	CASH – NEED (line 1 + line 2 – line 3)	-1150	111	3549	940	4536	8648	8395	-2093	9121	5247	-11781	
5	Debts on loans as of January 1	-	1824	2951	2654	4714	3601	1765	1200	1099	1671	811	8055
6	Loans received	2067	2083	1760	3552	4019	6377	1455	3072	4369	14299	17468	
7	Loans paid	243	956	2057	1492	5132	8213	2020	3173	3797	15159	10224	
8	Annual balance of loans	1824	1127	-297	2060	-1113	-1836	-565	-101	572	-860	7244	
9	Surplus (deficit) of money (line 4 + line 8)	674	1238	3252	3000	3423	6812	7830	-2194	9693	4387	-4537	
10	Contributed own funds	39	230	391	2437	3293	4628	1522	6632	2565	7700	11668	
11	Personal consumption	60	617	2299	3141	4900	9938	5828	712	5189	9162	5913	
12	Closing money balance (line 9 + line 10 – line 11)	653	851	1344	2296	1816	1502	3524	3726	7069	2925	1218	

However, there are also no grounds for a sharp decrease of individual farms' number – it will decrease but primarily due to formal and legal reasons connected with re-registration of economic entities. Farms that have long stopped operating will be judicially liquidated. This formal statistical fact will completely reveal after the end of 2004 but it should not be given much importance to.

The closing of an individual farm is irrational since individual farmers have no economic reasons for and no possibility to return to large farms that most of them earlier quitted. Besides they do not want to lose the status of although poor but independent and free entrepreneurs.

In the nearest time changes in farmers' production specialization are unlikely. They will continue to primarily grow crops applying very extensive schemes of land use.

Sharp differentiation of individual farms into two distinct groups becomes an obvious trend. On the one hand, there are so called entrepreneurial farms cultivating large land areas and potentially requiring wide use of hired labour. Their principal motivation is getting of entrepreneurial profit.

On the other hand, there are so called working family farms primarily using labour of family members or, most frequently, only labour of the farm head. Their motivation is close to that of a classical working peasant family – it's the motivation of a piece-worker who can determine the time and intensity of his labour.

The objective factors underlying formation of both groups are basically the same. First, non-expensive land rent and its abundant supply by land share owners condition expansion of land use in entrepreneurial farms. Moreover, it's logical to assume (and the first available data proves that) that the price for land will also be very low. However, the same reasons make it available for working family farms as well. On the other hand, they leave such farmers without any hope that after selling their land they will be able to radically solve all problems of their families.

Second, due to the commonly known reasons there is quite a large "reserve labour army" in rural areas that not only facilitates use of cheap labour in entrepreneurial farms, but also keeps working peasant farms from liquidation making them to secure family members' jobs.

There is no doubt that in the coming time individual farms' differentiation will intensify. Working peasant farms will increasingly remind household farms while entrepreneurial farms will demonstrate more and more classical features of entrepreneurial or corporate farms.