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Region's agrarian and industrial complex: lessons of reforming and conclusions for prospect

The article considers the consequences of reforming of economy of agrarian sector and social sphere of rural territories of the Vologda region for last 20 years. The author has analyzed the tendencies of formation of multi-structural agriculture in region. On the basis of integrated index the region's municipal formations are differentiated by the level of agrarian potential. Taking into account the lessons of market reforms, domestic and foreign experience the author brings out the ways to overcome negative consequences of transformation processes in agrarian sector for the near-term and medium-term prospect.

Transformation, agriculture, agrarian potential, social sphere, rural territories, market relations, Vologda region.

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In the late 1980's – early 1990's a spiraling processes of infiltration of environment and technical approaches into the agro-industrial complex of the country had to go faster in the course of new agro-economic reforming, which was based on the principles of freedom of ownership and entrepreneurship. However, in practice the chosen methods of state regulation of rural life did not yield the desired results. Most farmers could not use the declared freedoms because of the undeveloped market infrastructure, lack of initial capital, unsolved credit problems and the disorder of land relations. Keeping to the tactics of single-stage destruction of the old system, the state practically retired from the solution of these problems in the wake of the ideology of market self-regulation of the economy [3]. If in 1990 almost 50 rubles of budget funds was per 100 rubles of the product of agricultural organizations, in 2009 – only 7 rubles. It is a multiply less than in the countries of northern Europe and in other countries with developed agriculture. The lending of production and

investment costs have not reached the necessary level. The followed pricing policy was destructive for most agricultural enterprises. The impact of other negative factors has increased, especially those related to social policy in the countryside. All these have given some sad results, which is clearly illustrated by the Vologda region.

During the years of market reforms and agrarian reform the production volume in the agricultural region decreased by 42% *(fig. 1)*. Despite the increase in productivity, croppage of grain fell by 39%, croppage of potatoes - 40%. Although we managed to increase productivity of milking cattle, now the agricultural enterprises (ACE) of the region produce by 30% of milk less. In 2009 meat production (in carcass weight) did not achieve half of what was produced in 1990. These processes were determined by curtailing the base of agricultural enterprises, who could not adjust to new conditions of management.

During the first five years of reforming in those areas of the region, where the agricultural enterprises were destroyed, the villagers expanded their households to have at least some source of income: the livestock, milk farming and vegetables growing were increasing. During this period the volume of production of personal subsidiary plots (PSP) increased by 57.6% (in comparable evaluation). However, in subsequent years due to the rising costs of cultivation of agricultural crops and stock keeping and the expansion of retail variety of foodstuffs, many villagers lost the desire to farm. The lack of cooperatives (procurement ones, marketing ones, credit ones, etc.), of outsourcing relationships with the organizations of the agro-sector also contributed to reducing the role of PSP in agricultural production. As a result of these processes, there was a decline in growth rate in the PSP, and it continues at present *(fig. 2)*. In 2009 this category of households produced just more than a quarter of agricultural production of the region.

Another result of reforming was the development of farming lifestyle. From 1991 to 1994 the number of individual entrepreneurs engaged in farming has increased by almost 5 times in the region. The farm movement developed the most rapidly in Veliky Ustyug,

Figure 1. The volume of production in the agricultural enterprises of the Vologda region

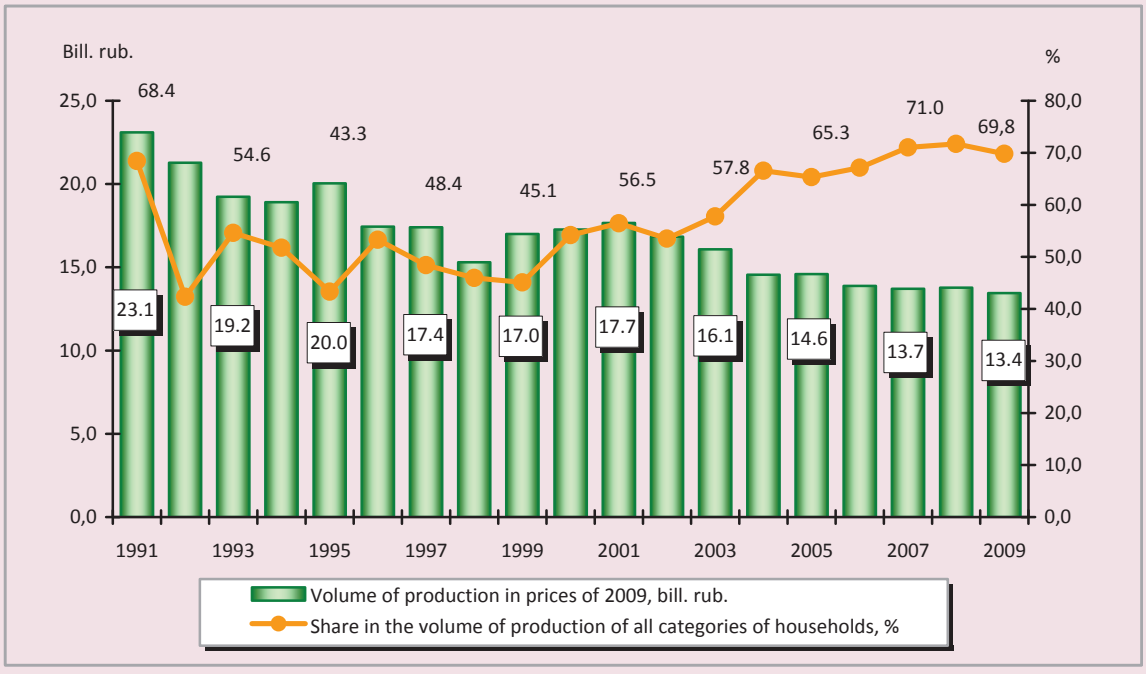
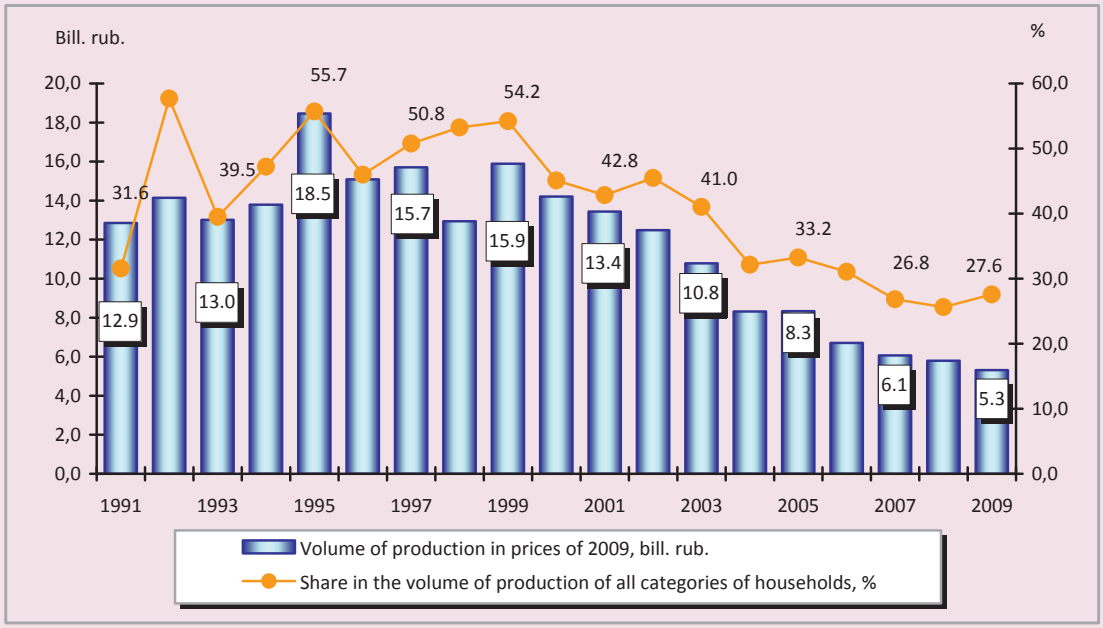


Figure 2. The volume of agricultural production in the personal subsidiary plots of the Vologda region



Harovsk and Vologda districts of the region. However, since 1995 the number of private (peasant) farms (PPF) began to reduce. At the end of 2009 there were 1288 peasant households (farms), 185 of which were in agricultural production in fact. Despite the 12.5 times increase in the volume of agricultural production produced by the PPF over the reform years, the role of small forms of management in developing the agricultural sector still remains insignificant (fig. 3). The share of PPF in gross output of agricultural sector does not exceed 2.6%.

For the years of market reforms the acreage in all categories of households decreased by 337 thousand hectares (41%). Grain crops decreased by more than 2 times, their specific weight in the total area of crops decreased from 35.3 to 27.6%. This is a serious concern because the level of grain production is an important indicator of the crop farming intensity. Flax crops decreased by 3.3 times, forage crops – by one-third *(tab. 1)*.

Compared with the pre-reform level the mineral and organic fertilizers were introduced by 4 times less, the volumes of liming of acidic soils reduced repeatedly. Consequently, in 2009 approximately 11% of arable land had low provision of soil with phosphorus and nearly a third of land had low provision of soil with potassium, the area of 246 thousand hectares (56.6%) required a chemical land reclamation. All these facts had an effect on the crop yields, which was by several times lower than for the potential level.

Transformation processes in the agricultural sector of the Vologda region had a significant negative impact on stock keeping. For 20 years the number of cattle in all categories of farms reduced by almost a third, pigs – by 41%, sheep and goats - by 9 times (tab. 2). In some areas the agricultural enterprises cut down their dairy herd by many times. For example, in Babushkino district only 277 cows remain in the ACE, in Vytegra district – 170 cows, respectively it is by 25 and 32 times less than it was before the market transformations.

Figure 3. The volume of agricultural production in private (peasant) farms of the Vologda region

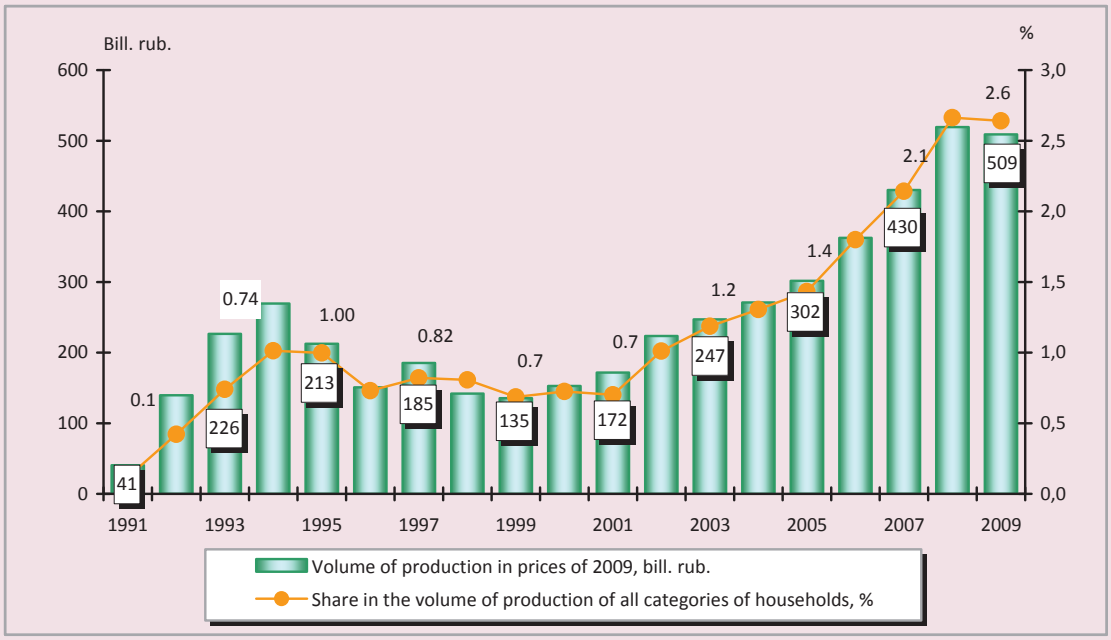


Table 1. Sown area under crops (in all categories of households)

Crop groups	The year of 1990		The year of 2000		The year of 2009		The year of 2009 to the year of 1990	
	thousand ha	in % to the total	thousand ha	in % to the total	thousand ha	in % to the total	%	п. п.
The whole sown area	**815.1**	**100**	**686.1**	**100**	**478.3**	**100**	58.7	**x**
Grain crops	287.6	35.3	169.7	24.7	132.1	27.6	45.9	-7.7
Fiber flax	33.8	4.1	10.1	1.5	10.1	2.1	29.9	-2.0
Potato	23.0	2.8	29.9	4.4	19.6	4.1	85.2	1.3
Vegetables	2.1	0.3	5.5	0.8	2.1	0.4	100.0	0.2
Forage crops	468.5	57.5	471.0	68.6	314.3	65.7	67.1	8.2

The greatest shocks were observed in the sector of PSP: there the livestock decreased by 3.5 times, pigs – 3.6 times, sheep and goats – by 8.7 times.

The poor financial condition of the ACE, the difficulties in obtaining loans, the low level of state support, the lack of development of leasing – they are the core causes of significant backlog of agricultural sector of the region from the advanced countries by the level of technical and technological development.

Thanks to the implementation of priority national project "Development of agro-industrial complex" some households could buy a high-performance, reliable, resource-saving technical equipment. However, the overall situation in the sector is still difficult. For 1990 – 2009 supply of tractors declined from 21.2 to 9.4 units, supply of grain combine harvesters – from 8.6 to 4.9 units, at the same time the energy supply decreased by almost half (tab. 3). Over 70% of tractors from the fleet of tractors and machinery of the ACE are meant for the average power of mobile power vehicles with 70 – 75 hp, that is they cannot be aggregated with multi-operation attached implements, which eventually leads to the low-quality seasonal field work out of season and to the reduction of labor productivity and crop yield.

Table 2. Livestock population (thousand heads at the end of the year)

Category of households	The year of 1991	The year of 1995	The year of 2000	The year of 2005	The year of 2007	The year of 2008	The year of 2009	The year of 2009 to the year of 1991, %
Cattle								
Total	594.3	438.9	317.0	233.1	226.4	215.4	204.5	34.4
ACE	521.2	357.9	253.6	196.8	194.7	186.9	186.9	35.9
PSP	72.6	77.0	60.9	32.5	24.5	20.7	20.1	27.7
PPF	0.5	4.0	2.5	3.8	7.2	7.8	8.2	by 16.4 times
Pigs								
Total	237.3	251.2	187.9	149.9	141.5	135.3	139.3	58.7
ACE	170.0	195.3	150	123.6	115.3	113.5	117.6	69.2
PSP	67.2	54.2	37.1	25.2	23.7	20.0	20.3	30.2
PPF	0.07	1.7	0.8	1.1	2.5	1.8	1.4	by 20,0 times
Sheep and goats								
Total	198.2	113.6	61.4	31.7	26.5	24.2	22.3	11.3
ACE	15.0	0.1	-	0.1	0.4	0.4	0.2	1.3
PSP	182.8	111.8	60.7	31.2	25.2	22.6	21.0	11.5
PPF	0.4	1.7	0.7	0.4	0.9	1.2	1.1	by 2.8 times

Table 3. Material and technical basis of agricultural enterprises of the Vologda region

Index	Year							The year of 2009 to the year of 1990, %
	1990	1995	2000	2005	2007	2008	2009	
Number of tractors per 1000 ha of arable land, units	21.2	18.5	14.9	10.2	10.1	9.8	9.4	44.3
Number of combines 1000 ha of grain crops, units	8.6	9.3	8.9	7.5	6.1	5.1	4.9	57.0
Power supply, hp per 100 ha of arable land	541.4	513.4	367.8	272.3	289.1	308.4	298.4	55.1

The transformation processes in the agricultural sector of the Vologda region occur with varying intensity in different municipalities. The results of calculations of the integral index of agricultural potential[1] make it possible to assert that before reform period and in 2009 among all municipalities of the region Vologda, Sheksna, Gryazovets and Cherepovets districts had the greatest possibilities for agricultural production *(tab. 4)*. This can be explained to a large extent by their geographical proximity to the regional center, markets and material resources, as well as by higher level of social and engineering infrastructure in rural areas.

For the years of market reforms only 7 districts managed to improve the level of agricultural potential. Great decrease in possibilities to farm was observed in the northeastern and western areas of the region.

Demographic problems of the village have worsened significantly too. The rural population of the region decreased by 86.8 thousand people (18.6%) over the study period. One fifth out of the total number of settlements has no residents, about 60% of villages of the region are considered to have small population. Thus, we can state the fact of depopulation of rural areas and reduction of the economic development of the area. It has a negative effect to a certain degree on not only the state of the agricultural sector, but also on the possibility of preserving the cultural heritage of the region, its identity.

The rural areas have an ultra-high mortality. In 1990 its level exceeded the birth rate by 1.04 times and from 1994 to 2005 the number of deaths in the villages of the Vologda region was by 2 – 2.6 times more than the number of births.

[1] It was determined by summing the following indices correlated with the average regional value: the share of agricultural lands in the total area of municipality, fund supply, specific weight of arable land in the area of agricultural lands, rural population density, number of agricultural workers per 1000 ha of agricultural lands.

Table 4. Grouping of municipalities of the Vologda region by the level of agricultural potential in 1990 and 2009*

Vale of integral index	The year of 1990	The year of 2009
High	Vologda (11.18), Sheksna (8.37), Cherepovets (6.86), Gryazovets (6.15), Ustyuzhna (5.46) districts. **Average value – 7.60**	*Vologda (14.36), Sheksna (8.86), Cherepovets (7.88), Gryazovets (7.35), Kaduy (5.88)* **Average value – 8.87**
Above average	Verhkovazhye (5.19), Ust-Kubinski (4.87), Tarnoga (4.85), Vashkinski (4.83), Kich.-Gorodok (4.80), Sokol (4.80), Veliki Ustyug (4.66) districts **Average value – 4.83**	*Sokol (5.36),* **Ustyuzhna (5.14)**, **Ust-Kubinski (4,79)**, *Chagoda (4.76),* **Verhkovazhye (4.68)**, **Vashkinski (4.57)**, **Tarnoga (4.42)**, **Veliki Ustyug (4.23) districts** **Average value – 4.74**
Below average	Chagoda (4.65), Nikolsk (4.57), Harovsk (4.52), Kirillov (4.44), Syamzha (4.24), Kaduy (4.20), Vozhega (4,15), Babaevo (4.13), Mezhdurech'e (4.09) districts **Average value – 4.29**	**Kirillov (3.98), Harovsk (3.88), Tot'ma (3.87), Kich.-Gorodok (3.81)**, **Mezhdurech'e (3.51), Nyuksenitsa (3.33), Syamzha (3.18), Belozerski (3.18)** districts **Average value – 3.59**
Low	Nyuksenitsa (4.09), Tot'ma (4.00), Babushkino (3.97), Belozerski (3.85), Vytegra (3.59) districts **Average value – 3.90**	**Vozhega (3.11), Nikolsk (2.93)**, **Babaevo (2.64), Babushkino (2.22), Vytegra (2.18)** **Average value – 2.62**

* **Bold text** denotes the districts of the Vologda region, where the level of agricultural potential decreased in 1990 – 2009; ***italics*** – municipalities, where its growth was observed.

Currently, the bulk of the rural population (more than 53%) are people of pension and retirement age. The younger generation tends to move closer to the district center (or the city), where the level of development of social sphere is higher than in the countryside, and it is possible to find well-paid job. "The number of young people among the members of private farms is extremely small. Fattening the cattle for slaughter in their peasant households, the parents often try to push out their children from the village to the city by all means... There is no continuity as a tendency in the transfer of private households from fathers to their children [2, p. 14].

The reduction and grinding of settlement network caused the weakening of the capacity of social infrastructure determined by the decline of financial basis of its content and development. During the years of market transformation the rural social sphere narrowed by high rates. In 2009 compared to 1990 the number of schools in the districts of the region decreased by 291 schools (38.3%), preschools – by 749 (62.7%). As a result of closure of small schools the students from remote villages have to spend a considerable amount of time to get to the place of study (transportation of students to one school is carried out by one bus to 2 – 4 directions with an average radius of coverage of 7 – 9 km).

During 1990 – 2009 the number of village medical stations in the region reduced by 232 units (28.4%). This led to increased servicing zone and lower quality of health care for villagers. As a result of optimization processes, the number of beds in health-care agencies of the region reduced by: while in 1990 there were 160 hospital beds per 10 thousand rural population, then in 2009 there were only 80. In 2009 the number of doctors in the rural areas was by 2.15 times lower than in the urban areas. The villagers often have to go 70 – 100 km in order to remove the tooth (without mentioning more complex operations).

The rural network of cultural and leisure establishments narrowed much in 1990 – 2009. The number of clubs and cultural houses decreased by several times, the number of libraries – by more than 20% *(tab. 5)*.

Table 5. The number of objects of social infrastructure in the rural areas of the Vologda region, units

Objects of infrastructure	Year					2009 to 1990, %
	1990	2000	2005	2008	2009	
Nursery and daycare facilities	1195	518	477	453	446	37,3
Daytime educational institutions	760	712	575	516	469	61,7
Village medical stations	818	696	674	611	586	71,6
Cultural institutions	1090	789	741	301	314	28,8
Public libraries	799	685	666	637	621	77,7

Because of traffic, financial and other difficulties, the possibility of familiarizing rural resident with theater, museums, exhibition is more theoretical than practical.

The level of improvement of rural housing stock is still low. In 2009 only 31% of its area is equipped with running water, 21% – with sewerage, 20% – central heating, 14% – hot water and only 13% – natural gas. About half of rural roads require capital and maintenance repairs. Because of the poor condition of roads it is difficult to provide the population with medical, cultural, consumer and trade services. Many settlements have no bus service in spring and autumn.

It should be noted that in this period there were some positive trends. Thus, in many villages and settlements of the region there appeared fixed location phones, cellular phones, satellite television, Internet. The transport links to regional and district centers were improved, the range of goods at retail was expanded. Some settlements were supplied with gas, the objects of engineering infrastructure were set into operation.

In recent years the issues of agricultural development were examined by the Russian power at all levels as priority issues. The national project "Development of agro-industrial complex" is implemented, and it is transformed into "State program of agricultural development and regulation of markets of agricultural products for 2008 – 2012", the Federal law "On development of agriculture", Federal target program "Social development of the village until 2012" and other federal and regional programs have been adopted. Although the manifestation of global economic and financial crisis having been started in Russia in mid-2008 slowed down significantly the solution of planned objectives, the country finds the resources for the gradual modernization of the agricultural sector. However, to overcome the consequences of the fatal destruction of the country's agriculture it is necessary to move from half-measures and declarations to full-scale practical solutions for resource provision while implementing the principle of priority of the agro-sector development.

Much more needs to be done in order to make the village attractive for young people. Mainly, it is necessary to solve one of the most acute problems – poverty and poor living conditions of rural populations, deepening social inequality between urban and rural areas. In 2009 about half of the residents of the village had an average per capita income below the living wage. The wage level in agriculture was lower by 32% than the average regional value. The disposable resources per a household member in rural areas accounted for 8859 rubles, and it is lower by 1.4 times than in the city.

Thus, the liberal idea that after allotting the farmer with land he would feed the country did not materialize. First of all, because there were no conditions for introduction of modern agricultural techniques and technologies into the agro-industrial complex, and the market and social infrastructure did not develop.

For the years of market reforms the rural areas no longer perform the full bulk of a number of functions which are strategically important to the society. This was reflected in a decrease in production volumes of agricultural raw materials, as well as fostering of settlement disproportion, resulting in a decreased level of both development of out-of-town area and social control over it. The reproductive function of village partially stopped to be realized, which led not only to reduce in population, but also to the loss of possibilities to transmit skills, experience of rural household production, way of life with historical traditions and customs from generation to generation. Preservation of the negative trends in the agricultural sector development and rural areas of the region under the pressure of inefficient market transformations may lead to new social loss.

Based on the lessons of market reforming, the domestic and foreign experience we denote the priorities of agricultural policy, which will lead to a qualitative and quantitative growth in agro-industrial complex in perspective:

1. It is necessary to provide the conditions for increasing the yield of agrarian entities by forming the equivalent bargaining relations in the agro-industrial complex, by cooperative development and vertically integrated structures (including clusters). In this case, the farmers will have an opportunity to conduct large-scale modernization of production, to improve labour conditions significantly, to raise wages and competitiveness level.

2. One should provide adequate budgetary support to small forms of economic activity, which effectively run their business (especially in peripheral areas of the region, where the role of PPF increases).

3. In the near future it is necessary to create an institutional environment ensuring the intensification of innovation activity in agriculture. It is necessary to develop the degree of interaction between production, universities, research institutes, experimental stations.

4. It is important to establish an effective service to provide information and consultancy services, the experts of which could participate in developing and implementing projects to modernize agricultural production, to give legal and commercial information.

5. The substantial upgrade is necessary for the system of training and retraining of personnel for agriculture, specialists for consulting services, who should have advanced knowledge in the field of management, marketing, investment and innovation and law.

6. In the corridors of regional development it is reasonable to create a technically-equipped engineering infrastructure of agro-production service which includes the service of machine-technological service, maintenance and technical basis, the system of agro-chemical and reclamation services.

7. It is necessary to develop (rather than to optimize – to fold) engineering, social, traffic and domestic infrastructure in rural areas rapidly.

8. For the qualitative performance of all functions by the village it is necessary to diversify the rural economy. This primarily concerns the revival of folk crafts, the involvement of a variety of entertainment resources (air, curative mud, mineral springs, etc.) into economic circulation, the accommodation of industrial enterprises (based primarily on processing of agricultural products) in rural area.

On the basis of interdependence and the importance of social, economic and environmental factors for the development of the village all above named directions of agricultural policy should be implemented comprehensively, systematically. Only in this case we will obtain synergistic effect, overcome the negative consequences of ill market reforms in the agricultural sector of the region, raise the living standard of the rural population.

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