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Agrarian technologies in Russia in the late XIX - early XX centuries: traditions and innovations (basing on the materials of Vyatka province)

Tecnologías agrarias en Rusia a finales del siglo XIX-principios del XX: tradiciones e innovaciones (basándose en los materiales de la provincia de Vyatka)

Alexey IVANOV 1; Anany IVANOV 2; Alexey OSHAYEV 3; Anatoly SOLOVIEV 4; Aleksander FILONOV 5

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Content

ABSTRACT:
Basing on a wide range of published and unpublished sources the article examines the historical experience of introducing and disseminating new technologies of agricultural production in the peasant economy of Vyatka province in the late 19th and early 20th centuries when the most important changes took place in the agriculture of Russia. The most notable phenomenon for the agricultural province was the introduction of a multi-field (grass-field) crop rotation in peasant farms. The article considers the state of peasant farming at the end of the 19th century, regional, national features of the spread of new technologies in agriculture, the role and attitude of the main part of the peasantry, rural society and zemstvo system to this process are revealed.
Keywords: peasantry, agriculture, land cultivation, rural community, rural society, three-field system, multipolar system, zemstvo.

RESUMEN:
Basándose en una amplia gama de fuentes publicadas e inéditas, el artículo examina la experiencia histórica de la introducción y difusión de nuevas tecnologías de producción agrícola en la economía campesina de la provincia de Vyatka a fines del siglo XIX y principios del XX, cuando se produjeron los cambios más importantes en la agricultura de Rusia. El fenómeno más notable para la provincia agrícola fue la introducción de una rotación de cultivos de campo múltiple en las granjas campesinas. El artículo considera el estado de la agricultura campesina a finales del siglo XIX, las características regionales y nacionales de la difusión de las nuevas tecnologías en la agricultura, el papel y la actitud de la parte principal del campesinado, la sociedad rural y el sistema zemstvo para este proceso son revelado.
Palabras clave: campesinado, agricultura, cultivo de tierras, comunidad rural, sociedad rural, sistema de tres campos, sistema multipolar, zemstvo.

1. Introduction

As early as in the nineteenth century, various historiographic traditions, using their notions of the market and market economy, began to discuss the nature of peasant economy in Russia. At the end of the XIX century, the content and direction of agrarian evolution in the regions was largely determined by the consequences of global agrarian crisis and peculiarities of peasant farming in various parts of the Russian Empire. Researchers recognized the lowest undeveloped forms of capitalist relations and a special semi-patriarchal peace in the Russian village in agricultural production of pre-revolutionary Russia. Their results and analysis are described in sufficient detail in the generalizing works on the agrarian history of Russia (Anfimov A.M., 1980). At the same time, regional peculiarities of agrarian evolution were determined not only by natural and climatic, but also by historical and cultural traditions of the agricultural population. Historians and ethnographers have done a great deal of work in this direction and reflected it in monographs, articles and dissertations (Andreev I.A., Sepeev G.A. (1979), N.A. Khalikov (1995), A.A. Soloviev (2013, 2014, 2015, 2016, 2017), A.A. Ivanov (2016, 2017), A.A. Filonov (2014), et al).

This article examines the features of peasant farming and the spread of new technologies for land cultivating in the late XIX - early XX century on the basis of materials from Vyatka province . In the period under study, representatives of various peoples of Russia lived there compactly: the Russians, the Udmurts, the Maris, the Tatars, the Komi-Permyaks, the Bashkirs and the Besermyans. There also such ranks of rural population as former statesmen (90 % of all households), apanage people (6,1 %), landowners (3,4%), as well as mining workers, rural inhabitants (formerly craftsmen and factory workers), the patrimonials, the teptyars and others lived. The huge territory of the province combined various types of producing farms – fishing and farming ones. Studying the historical experience of peasant farms modernization in the region allows us to generalize the experience of social interaction of previous generations according to rational use of natural resources, to model the most optimal variant of effective cooperation for the successful implementation of agrarian technologies in the context of globalization and new challenges at the present stage of historical development.

2. Methodology

Methodology represented is based the following principles of historical science: historicism, involving the consideration of processes and events in their development and interrelationship; objectivity, orienting researchers to a comprehensive analysis and revealing complex and contradictory processes for drawing up an objective picture of historical development. The main means of solving these problems are special historical methods: a comparative and historical method allowing simultaneous studying and comparing the formation and development of agrarian technologies in different counties and natural and climatic zones of the studied region; historical and chronological method, allowing to consider events and phenomena in their chronological order; problem and chronological method allowing comprehensive examination of the selected problems in a comprehensive manner throughout the period under study. In the work archival (unpublished) sources, mass statistical sources (censuses of 1884-1893, 1900-1902), economic indicators, the development of branches of the national economy reports, etc. were used.

3. Results

In the post-reform years the peasant economy of Vyatka province underwent noticeable changes. This concerns the system of land ownership and land use, the introduction of the newest production technologies. The most notable phenomenon for the agricultural province was gradual introduction of a multi-field (grass-field) crop rotation in peasant farms.

According to the data basing on the land survey of 1905, there were 7814132 dessiatins in peasants' of Vyatka province use. Only 96164 dessiatins or 1.3% of which were in the private property of peasant societies, associations and individual owners. Private peasant landownership of Vyatka province consisted mostly of forest areas. According to the survey of 1887 the part of farm field presented there was not great – 14.7% (The most important data of land statistics in 1887, 1898, з. 7).

The distribution of arable lands according to the rural population ranks, nationalities and counties was uneven. Due to objective reasons former state peasants were provided by arable land best of all. According to the first household survey of Vyatka province (1884-1893), former state peasants accounted for 87.1% of all peasant households and they owned 91% of arable land. (Vyatka province statistics materials, 1898, pp. 336-341).

Zemsky household censuses make it possible to reveal changes in the structure of peasant lands. So, according to the first household survey, the greatest plowing of allotment land ownership was registered among the Mari people – 63.4% and the Besermyans – 60.2% of the whole farm land. The Russians and the Udmurts had the same share of arable land in the farm land – 57.2%. The Tatars had 56.4% of allotment plowed land, the Bashkirs – 44.6%, the Komi-Permyaks –43.9%. According to the second, selective census at the beginning of the twentieth century the first place is still kept by the Mari people, then there are the Tatars, the Besermyans, the Udmurts, the Russians, the Bashkirs and the Komi-Permyaks. In comparison with the first household census, the structure of the Komi-Permyaks, the Tatars, the Mari people and the Bashkirs has undergone the greatest change. (Vyatka province statistics materials, 1900, pp. 336-341; Materials collection on Vyatka province lands evaluation, 1908, pp. 28-33, 54-59).

In the period under study, the fallow system in the form of a three-field system allowing annual rest of about a third of arable land was most widespread in the territory of Vyatka province. Sometimes in the low-land areas there was also a two-field, but the arable land was usually cultivated according to the three-pole principle. In multi-land areas, due to the lack of fertilizers or other reasons, it was widely practiced to periodically neglect arable land for using it as laylands to restore soil fertility in a natural way. Such lands were usually located in the fields being remoted from the manor. In forest areas, the three-field system was often combined with a slash-and-burn system. Wood clearing or forest fell for arable land was usually done in autumn or winter, after that the cut wood and bushes remained on the site for a whole year. If it was intended for autumn sowing, the forest was burned in spring, if for spring crops – in autumn. The ash was scattered across the field.

According to the land survey in 1887, rye occupied 99.8% of the winter field of the province. The second most important crop was oats. Barley was not widely spread and distributed unevenly in the province. Its largest share was in the Vyatka county – 11% of the sown area. In contrast to others Vyatka province was also distinguished by the winter wheat sowing. In the spring field, wheat was found more often in Yaransk, Sarapul, Glazov, Elabuga and Kotelnichesky counties.

Yelabuga, Sarapul and Malmyzhsky counties contained 92% of buckwheat crops and 99% of polish crops in the province. Kotelnichesky county was fax-producing. Here, 6.6% of the sown area was assigned to flax (The most important data of land statistics in 1887, pp. 14-19).

By the beginning of the twentieth century the total area of three grain crops – rye, oats and barley decreased in all counties, except for Sarapul and Urzhum. However, there oat crops also decreased. The share of the other four peasant crops – wheat, buckwheat, potatoes and flax increased in all the counties, except for Urzhum. In the flax-growing districts of the province, the zemstvo did everything in their power to support the peasantry. In Kotelnichesky county Arban flax procession point was established with an instructor in its staff (State Archives of the Kirov Oblast, f. 616, item 6, d. 207, pp. 1-2).

The main type of fertilizer in Vyatka province was manure. Time for the manure export to the

fields depended on various conditions. The nearest lands were better enriched. In the villages of Udmurtia, it was considered "sinful" to export manure to the fields in summer and in autumn (harvesting period) the poor lacked draft-cattle and manpower" (Martynova M.M., 1981, p. 19). The chief of Glazov county noted the difference between Udmurt and Russian farms as follows: "... the first ones fertilize fields in autumn, and the second ones – in spring, before sowing ..."

Some peasants preferred to export manure in winter, since repair and maintenance of sleds were cheaper. People began to apply mineral fertilizers in small amounts at the end of the nineteenth century with the assistance of zemstvo in Orlovsky, Glazovsky, Slobodskoy, Kotelnichesky and Sarapul counties. At this time in most cases mineral fertilizers were given by the zemstvo to the population free of charge for propaganda purposes. In 1901, in Sloboda county, there were cases when phosphorite was sold in insignificant quantities for money (Memorable Book of Vyatka province and Calendar in 1903, p. 170). The Tatars, according to N.P. Steinfeldt fertilized "... fields close to the villages ..." (Steinfeldt N.P., 1893, pp. 311). Best of all the Mari fertilized the stubble – the nearest field of the farming field, where hemp was most often sown (Andreev I.A., Sepeev G.A., 1979, p.78).

Thus, in connection with the increasingly escalated crisis of the three-field and the decline in the rate of agricultural production growth in the late 1880s, a significant part of the Vyatka peasantry and zemstvo self-government bodies became acutely aware of the need to introduce new technologies in agriculture.

The Vyatka provincial zemstvo reported the peasants about agricultural improvements as well as implemented the newest technologies in the province. The beginning of great agronomical changes on the spread of herb crops to be done by zemstvo was preceded by a series of lean and unfavorable for agricultural production years – 1891 and 1892. In Glazov county, grass-growing was started in 1890. Agronomist A.N. Sukhin made experience of grass-sowing in 10 townships with 81 householders.

Since 1891, herb crops have appeared in Yelabuga, Yaransk, Orel and Urzhum counties. In total, more than 14 dessiatines were cultivated. In 1892, the herb crops occupied already more than 62 dessiatines. Of the 12 public crops, 11 were in Yaran district. The need to introduce a multi-field was very relevant in connection with the increasingly perceived problem of sown areas scarcity, their depletion and long interruptions in the taxes payment receipt.

In the applications of county agronomists, the most popular were the cheapest ones: clover, timothy, black vetch, etc. In addition, a number of other cultures spread among the peasants: "Swedish and white clover, meadow foxtail, meadow fescue grass, white bentgrass, orchard grass, English ryegrass, sweet vernal grass, seradella, spurrey common, licorice, deervetch, kidney vetch, Saxon wheat, Chinese naked oat, dragon head, cucumber grass, French alfalfa, Chinese alfalfa, hop alfalfa, esparcet, smooth bromegrass, horse beans, etc.

According to available applications in 1893, it was selected and planned to sow grasses in the area: in Yaransky county – 50-70 dessiatins (1 dessiatin = 1.09 ha), Malmyzhsky county – 18 dessiatines, Slobodsky county – 5 dessiatines, Orlovsky county – 42 dessiatines, Kotelnichesky county – 9 dessiatins, Glazovsky county – 23 dessiatins. (February-March 1893). Initially, the peasants readily accepted the innovation. One agronomist from Malmyzhsky county noted that "peasants are amazed to tell such facts when the horses left the "bag" thickly covered with flour and greedily grabbed the clover ..." N. Golubev, Nolinsky county agronomist reported: "... Some sarcastically smile, judge, others are more cautious, they wait for the results of mass sowing of herbs ..." Due to harsh climatic conditions, there was no the expected result of the herb crops in Glazovsky county. Apparently peasant caution to innovations is explained not just by "indecisiveness and culture absence", as contemporaries noted, but also by practical mother wit and experience that have been developed for centuries (State Archives of the Kirov Region, f. 616, item 3, d. 99, p. 254). Besides, herb seeds prices were high. In 1892, pood (1 pood = 16.3 kg.) of red clover seeds, for example, cost 8, timothy – 5 rubles.

Special attention provincial zemstvo was paid to the spread of grass-growing to rural societies

that wished to introduce a multifield. Such villages were encouraged initially by free seeds. "To some individuals 1 pood of seeds was sold at 1/2 of the harvested price of 2 rubles. 50 k. Such attention to rural societies was justified, because the application of grass growing in a separate peasant farm caused great difficulties. In 1896, in Yaransky county, rural communities sowed 124 dessiatins of grasslands (2040 square fathoms), individuals sowed 19 dessiatins of grasslands (412 square fathoms). Mainly clover and timothy were sowed. Total public crops in the province included 643 dessiatins. In 1901 in 53 villages of Vyatka province folk sowed herbs on the area of 357 dessiatins (1666 square fathoms) constituting 53%, private individuals – on the area of 315 dessiatins (236 square fathoms constituting 47%. All in all there were 673 dessiatins (1901) (1 square fathom = 4.55 square meters).

In 1902, public herbs were already available on 95 sites with an area of 884 dessiatins. The ratio of crops for individuals and rural communities was 28.1 % and 71.9 % respectively. In multi-field farms, the herb crops occupied 399 dessiatines. In total, 1283 dessiatines of grass were occupied in the province. Zemstvo released 1420 poods of grass seeds, 307 poods of which were sold for money. Assistance of zemstvo in the spread of grass growing was felt in the future. Peasants' attitude to grass-growing was cautious: "...Sometimes young people strive to improve the household, but old people raise the devil: "... why sow grass? No, it seems that young people are too clever – they want God to force the bread to give birth!!! "And they neglected the agronomist's words: "What can he know: we have been using a plow for years, but he can not even see a plow, still he wants to learn us to plow. He promises us the seeds for free, and money for a hedge, but zemstvo will take three times with taxes after all..." (Memorable book of Vyatka province and calendar for 1905, 1904, p. 169).

In 1898, the area of grass crops in the multi-field farms of Vyatka province was 8 dessiatins, in 1899 - 30 dessiatines, in 1900 - 202 dessiatins, in 1901 - 226 dessiatins, in 1902 - 399 dessiatins. Out of 32 multipolar farms, 11 settlements became multipolar in 1902 (State Archives of the Kirov Region, f. 616, item 3, d.167, p. 168). Multifield farms were organized with 5, 6, 8, 9 and 12-year alternating lands. With the eight-field, for example, the land alternated in such an order: 1. fallow; 2. winter crops; 3. oats (spring); 4. herbs; 5. herbs; 6. fallow; 7. winter crops; 8. oats. The largest number of craft areas and the largest area of grass plantations in Vyatka province were presented by such agricultural counties as Yaransk, Urzhum and Nolinsk, where the communal pillars were strong. This became possible thanks to the material support of the zemstvo of providing peasants with free seeds.

4. Conclusions

At the end of XIX – early XX century in most of the counties of Vyatka province there was a crisis of the three-field system of farming. Due to haymaking and forest lands reduction, the peasant stock increased, which in turn decreased the fodder base for peasant livestock. In the absence of mineral fertilizers, the reduction of livestock number had an adverse effect on fertilization of peasant fields and led to their depletion. At the same time, a variety of soil-climatic and historical conditions in the territory of Vyatka province at the end of the nineteenth and beginning of the twentieth centuries allowed to preserve the most diverse forms of agricultural production. Recognizing predominantly extensive nature of agriculture of this period, it should be noted that a turning point in the peasant economy was outlined. In some small-scale counties peasants switched to new, intensive forms of agricultural production. Depending on the degree of development of infrastructure and market conditions, specialization areas for agricultural production have also been outlined. An important role in the evolution of the structure of farming structure was played by ethnic traditions. In the late XIX - early XX century with the zemstvo support, important changes in the agricultural culture of the peasantry in Vyatka province took place. The foundations for spreading the multipolar crop rotation and the newest technologies in agriculture were laid.

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1. Mari State University, Yoshkar-Ola, Russian Federation

2. Mari State University, Yoshkar-Ola, Russian Federation; E-mail: anani@marsu.ru

3. Mari State University, Yoshkar-Ola, Russian Federation; E-mail: aleksei.oshaev@mail.ru
4. Mari State University, Yoshkar-Ola, Russian Federation; E-mail: solowaa@mail.ru
5. Mari State University, Yoshkar-Ola, Yoshkar-Ola, Russian Federation; E-mail: fil88meat@rambler.ru

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