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DEVELOPMENT PROSPECTS ON FLAX GROWING IN SMOLENSK REGION

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Abstract

Throughout the entire history of the development of the Smolensk region, flax growing played an important role in agricultural production, giving a significant segment of the income of the enterprises, and determined the socio-economic development of the region. One of the first Decrees of Peter I in 1703 was a Decree on the development of flax and hemp growing in Russia. In the Soviet time, flax gave up to 70 % of the income of the Non-Black Earth Region. This situation is fraught with the special climatic conditions allowing growing this crop, with a high level of specialists qualification involving in selection work that was inherent in this territory, which is characterized by a rural bias of living among the residents. A feature of the Smolensk flax is a long fibre. The use of flax products is very diverse and this relates not only the production of fabrics (some of which contributes to the development of astronautics, the nuclear industry, the military purposes, and manufacturing ones in terms of producing the uniform for miners, and oil workers), but also the creation of flaxseed oil, which is used in pharmacology, and the wax used in spaceships. Modern technologies ensure the production of containers and composite materials from flax products. Flax is used as a component in some innovative products, such as shipboard, decoration materials, and insulation for houses in the North. Flax fibre is also used in the production of cellulose, carbon fibre, and also it is used in Boeing aircraft.

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1. Introduction

Active policy on the dismantling of large-scale agricultural ventures and the development of farming did not allow flax-cultivation to remain in the list of the effective commodity agricultural production of the region. It has become more profitable to import flax raw materials from abroad, which affected the development of flax growing in the region. Moreover, in neighbouring Belarus, the production of flax products is 4 times higher. Flax products are banned from export in the USA and China, while in France flax competes with grapes (Dyachenko, 2005). In conditions of the general destruction of agricultural production in the post-perestroika years, there happened a dismantling process, primarily of flax growing.

In 2001, flax was sown in the Smolensk region on an area of 15-kilo hectares, and by 2010 only 1.6-kilo hectares, occupying less than 1% of the sown area. Flax factories, other processing facilities, and infrastructure, as well as the State order for flax products were destroyed, which led to reduction of population in villages or rural territories. In general, a sharp decrease in the number of rural settlements in the region can be noted. Moreover, according to experts, in the world, the deficiency of flax fibre is more than 200-kilo tons, and in the country – 40-kilo tons.

2. Problem Statement

Under the market conditions, the main risks for the development of flax growing were highlighted: a high level of laboriousness, demanding crops for growing conditions, the need for a high-tech production and a diverse fleet of agricultural machinery, which is due to several types of agricultural products obtained from a sown area – flax straw, flax treads (united by the flax fibre indicator) and flaxseeds.

3. Research Questions

Since 2012, the Smolensk region has been included in the regional economically significant program “Development of flax production of the Smolensk region” within 2012–2015, bringing the area of flax by 2020 (up to 6-kilo hectares, with a specific gravity of up to 8 % in the whole structure of the sown area) (Chudakova & Ekimenkova, 2016). While in the days of the USSR, the Smolensk region was ranked as the first one in production of flax fibre, then in 2017, the indicators reflect the following successes: in the Central Federal District, flax is grown in 6 regions (the Smolensk region takes first place), and in the country scale from 18 regions with flax growing, the region is ranked as the second one. A new impetus in the industry development was given by the appeal of President V.V. Putin, on December 20, 2018, at the annual large press conference addressed flax production challenges. The president noted that flax is a “trademark and pride of the country”.

The regional authorities have proclaimed that flax growing is a priority industry in the Smolensk region. Over the past 6 years, more than 50 million rubles were allocated for the development of the industry; more than 300 million rubles were spent in total from the budget and more than 1 billion rubles as extra budgetary funds involved in investments were also spent on flax growing (Kiyashchenko et al., 2014). The State support in 2018 implying the reimbursement a part of the cost spent on purchasing elite

seeds amounted to 2.5 thousand rubles on 1 ha of the sown area, and for the provision of unrelated support in the field of crop production at a rate of 11.5 thousand rubles on 1 ha of the sown area occupied by fibre flax (in 2019 – 11 thousand rubles).

The reimbursement in figures: agricultural machinery and equipment for production and primary processing – 25–70 % depending on the type of machinery, domestic machinery (made in Russia) – with a 15 % discount, including on leasing terms, preferential short-term and investment loans at the interest of 1 up to 5 % per annum, for the purchase of land – 15–20 % of the cadastral cost. Technological maps for growing flax and accompanying investment projects based on the principle "one window" are provided. It is important to highlight such a point that since 2018, all regions included in this trend of agricultural production development receive preferential loans aimed at sowing (at 1 %) and the purchase of equipment (at 5 % per annum on the security of this equipment) for up to 3 years.

A supporting mechanism has also been created for providing subsidies to the enterprises covering the reimbursing regarding the costs the enterprises spent on seeds purchasing and agricultural machinery (Kostyuchenko et al., 2016). However, in our opinion, in order to ensure economic security, it is also necessary to restore infrastructure – creating your own seed base (including breeding work), seed storage, organizing specialized flaxseed, chemical seed treatment, etc., as it used to be in the USSR. Moreover, in the Smolensk region, there is a practice of creating new elite varieties, such as Smolensk, Soyuz, etc.

The stable dependence on the quantity and quality of seeds imported from other countries does not ensure the stability of the industry development and the work efficiency of agricultural producers. In 2012, the Smolensk Flax Cluster, a non-profit partnership for the development of flax growing, was created in the Smolensk region. It included flax seeding enterprises, factories dealing with flax initial processing (0.5-kilo ton of fibre flax and 2-kilo ton of flax beaten tow) using 4 CHARLE lines (although there is a need to purchase more modern flax processing lines as VYZ13419E010), including Yartsevsky Linen Factory (OJSC), and Roslavlenn Factory (OJSC).

Modernization (45 million rubles) of Vyazemsky Linen Factory with a production capacity of up to 4-kilo tons of monofilament for the production of blended yarn (about 30 tons), yarn (about 1.3-kilo tons), canvas (more than 300 linear meters). Also, the machine-building plant producing agricultural machines (including flax harvesting equipment) and one Linen Factory producing linen fabrics were modernized, and the sales network was created that was assigned to do the trading issue with finished goods to consumers (Podobay & Podobay, 2018).

In the Smolensk region, with the support of the Ministry of Agriculture of the Russian Federation and the Ministry of Industrial Trade, a flax cluster is being created, a part of which since 2017 is Russky Lyon, which is a division of agricultural holding "Promagro". It was announced that by 2020 the Flax Factory will be constructed (the first in 30 years with 146 job places) in the territory of Safonovo industrial park, which will be able to process up to 10-kilo tons of flax straw and the Spinning Factory with the capacity of 3.5-kilo tons of flax blended yarn per year. Flax production purposed investments involve more than 2 billion rubles.

Based on the general concept, it is assumed that the region will cover more than 10% of the Russian flax fibre market, of which more than half will be exported, and this will increase the level of regional gross product (Pogonyshchev et al., 2018). As of 2019, the sown area of fibre flax covered more

than 5-kilo ha, and this company has taken 2.3-kilo ha and 100 ha crops has been reserved for receiving seeds. Already, over 400 tons of flax straw are stored in the warehouse, which will be processed by the end of 2019.

In accordance with the Regional Program for the technical and technological modernization of flax production and processing, a joint Russian-Belgian enterprise UNION-BM was created on the basis of Vyazemsky Machine-Building Plant (OJSC), where self-propelled double-row flax sawmills and flax wrappers, self-propelled and mobile flax mills are created (for about 10 cars are produced per year for the amount of about 150 million rubles). The dynamics in the flax industry development dynamics in the Smolensk region can be seen in figures in Table 1.

Table 01. Flax growing development in Smolensk region

Indicators	1995	2005	2010	2012	2013	2014	2015	2016	2017	2018	2018 % to 1995
Crop acreage, kilo ha	26	9.7	1.6	3.9	4	3.1	3.9	5	5.1	5.1	19.6
Flax fibre, kilo tons	10.3	4.6	0.8	2.1	2.7	2.8	3.8	5.1	4.8	3.3	32.0
Productivity, dt/ha	5.2	6.1	6.1	6.1	7.0	9.3	9.7	10.3	8.9	7.9	151.9

Consider the dynamics of the flax growing development in the Smolensk region, which reflects a reduction in sown areas, gross harvest, with an increase in yield. There are currently no statistics on flaxseeds (Reichert, 2017). Although it can be noted that in 2014, 778-kilo tons of seeds were received and the pool of our own seed material is beginning to take shape.

4. Purpose of the Study

The purpose is to assess the state of flax growing, we considered the problems of the Smolensk region on the development of this industry with further recommendations that might be to follow as possible solutions.

5. Research Methods

The methodological basis of the work consists of some approaches: competency-based, systematic, terminological, communication and development; and some methods: analysis and synthesis, induction and deduction.

6. Findings

When organizing the flax production in the Smolensk region, agricultural producers faced the following challenges:

- lack of personnel, specialists in farming;
- the need to clear arable land from shrubs and trees;
- high costs of land cultivation with herbicides and fertilizers;
- the need for further modernization of equipment and purchasing new equipment;

- part of the equipment can only be purchased abroad (self-propelled tillers, wrappers, balers), which requires high expenses in the face of ruble depreciation;
- unfavourable situation with seed material, poor selection (we have to sow 10 varieties at once instead of one or two);
- the long payback period of investments requires the development of several large linen agricultural holdings since farmers can only be included as subsidiary structures;
- processing done by a limited number of flax factories leads to the monopolization of prices and borrowing the raw materials from agricultural producers;
- improving the quality of processing to obtain more flax fibre (quality control of incoming raw materials), using chaff in construction to manufacture heat-insulating materials (bone concrete, slabs) and as a filler for materials with improved thermal performance (with a wall thickness of 400mm using insulation from chaff for heating a room with an area of 100m² it requires only 3 kW/h of electricity), using it in the construction of private houses with a wooden frame, in manufacture of floors and walls;
- orientation to the production of raw materials and their initial processing leads to dependence on customers who produce the finished product (fabrics, etc.), which requires the creation of sustainable contacts with the agricultural holding: 1) a significant part in the production of flax fibre falls on farms (0.7-kilo tons in 2018), which cannot organize production and delivery in a quality manner without outside assistance and the latter requires additional logistics and transportation systems, 2) the State support is restricted with the financial and consulting component, without organizing logistics, government procurement and pricing policies; and 3) the main customers of raw materials and initial processing of flax products are the Chinese entrepreneurs, who intend to purchase from 20-kilo tons of flax fibre per year, while the Russian buyers are not involved much in this process (Ulyanova, 2013).

This creates an export-oriented industry trend, which depends on the global demand and without the State support it can lead to high risks at which the Defence Industry will be left without the necessary raw materials.

7. Conclusion

Based on the foregoing, in our opinion, it is necessary to carry out the following actions for the further development of flax growing in the region:

1. Create a mechanism for the flax growing development in the Smolensk region, which could include such entities as the regional executive and legislative authorities, agricultural producers, processing factories, logistics, traders, customs authorities and light industry enterprises in other regions of the country.
2. Construction of weaving factories should be envisaged in the Smolensk region, which will have raw materials for processing, and possibly for deep processing.
3. It is necessary to provide the State support not only at the sowing stage but also at the harvesting and marketing stages, where the State, currently, takes quite passive positions;
4. To develop selection work and methods-techniques to store seeds;

5. Organize a system of restoration of arable land, irrigation, drainage, improve the quality of the arable layer, sell fertilizers at an affordable price for national producers;
6. Develop a program capable to attract the residents to live and work in rural places and create infrastructure for rural regions development;
7. Develop some innovative projects aimed at using flax raw materials and its initial processing to produce new goods, which will give impetus to the development of light, food industry, pharmacology, aircraft construction, and the military sector (Chirkov, 2018).

The proposed actions will not only create the conditions for the Smolensk region development but also ensure the defence capability and quality of life for the population in the country.

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