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International Conference «Land Economy and Rural Studies Essentials»**PROSPECTS FOR REGIONALIZATION OF AGRIBUSINESS IN
THE POST-GLOBAL ECONOMY**

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Abstract

The article discusses the prospects for the Russian agro-industrial complex functioning in the post-global economy, facing high risks of negative international socio-political development and the impending deep global recession. In these conditions, regionalization and multi-vector economic development become an objective operational reality. These principles are a reliable guarantor of the country's national security when the world order changes and the new international relations architecture are established. The primary task of the agri-food complex at the present stage is to ensure food security, which means reorientation of the Russian agricultural sector from an export-oriented strategy to an import-substituting one. Regionalization of agricultural production, the emergence of regionalized technological chains enhance the potential for product customization and increase the demand for micro-logistics. All these processes require a critical assessment of the existing mechanisms for the agricultural sector's spatial development. The authors explore issues of increasing the agricultural sector efficiency in the Baikal region, based on the promising areas of Russian subjects' economic specialization, forming the Baikal socio-ecological-economic system. Creation of an interterritorial agrarian cluster will lead to the strengthening of interregional ties, which will contribute to the implementation of the three regions single mission (Buryatia, Trans-Baikal Territory, Irkutsk), improve the sustainability and stability of the Baikal ecosystem, preserve it in the most pristine form by reducing the Anthropogenic load during the transition to organic animal husbandry. Such a transformation of regional agribusiness models requires the integrated implementation of digital solutions, ensuring the entry of the agro-industrial complex into a new technological structure.

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Keywords: Agribusiness, agricultural clusters, Baikal region, regionalization



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1. Introduction

Today the global economy is on the verge of a structural crisis, which is confirmed by the dynamics of leading macroeconomic indicators of an impending global recession, which began to grow from the end of 2019. So, the composite leading indicator (SDI) of the global economic crisis, developed by experts from the Center for Macroeconomic Analysis and Short-Term Forecasting (CMAAC), evaluates the likelihood a simultaneous drop in economic growth in the largest economies in the world, turned out to be below the average values for the previous five-year period. It means that likelihood of this event occurrence moving from a zone of low probability to a zone of average probability SDI was 0.66, which is above the threshold level (Belousov & Mikhailenko, 2020). The situation was aggravated by the pandemic of the coronavirus infection (COVID-19) and the drop in oil prices due to the destruction of the OPEC + regime. In Russia, with its extreme instability of economic growth, dependence on the energy market conditions, orientation some of the raw materials industries on China's and Western Europe countries' markets, and a huge share of imported components used in high-tech production, the likelihood of a hard recession scenario is over 50%; in this case, we should expect a drop in GDP by 3-3.3% in 2020 and by 0.8-1% in 2021.

The COVID-19 coronavirus pandemic in 2020 became the trigger for an overdue crisis, an official reason for States to take unprecedented security measures, quarantine, border closure, which affected the operation mode of individual companies, seaports, terminals and caused large-scale logistics problems. Nowadays, the processes of international economic ties destruction, financial and commodity flow redistribution, labor mobility decline, are gaining and cause a systemic transformation of society and the global economy with a transition from global to post-global. Regionalization was an objective trend that had arisen even before the pandemic, however, the difficult epidemiological situation and severe restrictions imposed by political elites will significantly accelerate the formation of new geo-economic macro-regions that operate on the principles of geo-economic self-sufficiency (Thissen et al., 2013). The primacy of the political dimension in the regionalization trend dictates the need to build self-sufficient technological and economic chains at the regional level with the necessary resources and investments (Evstafiev, 2020).

The list of countries that apply trade restrictions on the export of food and agricultural products is expanding. Thus, the Eurasian Economic Union limited the export of sunflower, buckwheat, rice, and rye seeds until June 30, 2020. Belarus, Armenia, and Kyrgyzstan refused to supply soybeans and some vegetables (such as onions) until the end of June. Kazakhstan introduced quotas for the export of wheat, flour, buckwheat, sugar, sunflower seeds, and some vegetables (onions, potatoes, etc.). India, Vietnam, and Cambodia temporarily suspend rice export contracts. In order to satisfy domestic demand, Egypt stopped exporting legumes for three months from March 28, 2020. The Government of the Russian Federation imposed restrictions on the export of grain crops (the volume of grain export will be reduced from 43.3 million tons per year to 7 million), which worried the World Health Organization and the World Trade Organization, they fear the destruction of the global food supply chain and the established food supply system in the world (Decree of the Government of the Russian Federation, 2020).

¹ The authors cite data relevant at the time of writing (April 2020)

The unfolding crisis with massive closure of borders, cancellation of contracts, and delays in food supplies will force the Russian agro-industrial complex to switch back from an export-oriented development model to import-substituting. However, the imbalance of the country's spatial development and the environmental, socio-economic instability of its regional systems hinder efficient use of existing agricultural potential.

2. Problem Statement

Under the conditions of economic sanctions, agriculture was transformed from an unprofitable sector into one of the main drivers of Russian economic growth. However, agricultural system problems, such as the dominance of an outdated manufacturing paradigm and extensive way of farming, have not yet been resolved.

The development of agribusiness in the reformatted world is determined by post-global trends that affect the medium and long-term development of the agri-food complex in the socio-economic, environmental, political and technological aspects. Nowadays two trends are particularly relevant. The first one is the regionalization of the agro-industrial complex on the basis of the new geo-economic macro-regions formation. The second one is the digitalization by creating a unified national digital platform in the agricultural sector. The authors explore prospective agribusiness development models on the pattern of the Baikal region agro-industrial complex.

3. Research Questions

The subject of the study is the processes of regionalization of the agro-industrial complex in the context of the institutional transformation of the post-global economy, taking into account the factors of spatial development, the problem of agricultural sector digitalization and the business models changing in the regional agricultural sector.

The sliding of the world economy into recession due to the trade war, the slowdown of leading economies, growing bubbles in stock markets, cyclical factors were predicted in 2019. Forecasts worsen amid coronavirus pandemic (real global GDP is expected to fall by 2.8% in 2020 compared with a drawdown of 1.7% in 2009), which makes particularly relevant such problems, as national development, and search the optimal economic model adapting to the new hybrid political-economic space and domestic market comprehensive support aimed at restoring or expanding national industries in strategically important sectors such as agriculture and the food industry.

The priority direction of regionalization should be the rational combination achievement of territorial localization and interregional integration in the development of economic mechanisms for the growth of the agricultural sector (Ionov, 2004). This requires modification of existing agribusiness schemes, forms, models functioning, its transfer to digital platforms. Regionalization will affect all sectors and spheres of the national economy, including the agro-

industrial complex, its functioning effectiveness largely determined by the organized interaction between the socio-economic sphere and the natural environment.

4. Purpose of the Study

The purpose of this paper is revealing the trends of the post-crisis agro-industrial complex development taking into account its factors and mechanisms of regionalization in the post-global economy.

Global institutions' destruction and the new architecture of the world order establishment make relevant the issues of forming self-sufficient technological and economic chains that ensure the country's food independence. This requires a transition to a new agricultural production paradigm taking into account the logic of agro-industrial complex spatial development, increasing the dynamism of the regional organization forms, gaining the importance of inter-industry platform solutions (ICT, biotechnology, aerospace technology, etc.) in the agricultural sector development..

5. Research Methods

The main methods of this study are the analysis and generalization of federal and regional regulatory acts governing the development of Russian Federation subjects, analysis of macro- and mesoeconomic dynamics, methods of institutionalism, conceptual modeling, monographic survey.

6. Findings

In the 20s of the 21st-century Russian agro-industrial complex will face new challenges and threats that inevitably accompany the process of significant and structurally rigid transformation of the entire global economy architecture (Evstafiev & Ilitski, 2019). The coronavirus pandemic, which affected almost all countries in the first half of 2020, significantly affected food security, leading to disruption of supply chains and limiting the labor flow movement, which negatively affected the labor availability. The Food and Agriculture Organization of the United Nations (FAO) predicts that a food crisis attack will begin in the second quarter of 2020 if measures are not taken to protect the most vulnerable nodes, maintain the world's food supply chain and mitigate the pandemic impact on the food system. Despite the sufficient availability of staple food stocks, any restrictions from countries reserving strategic supplies can significantly increase risks. Some main crop-producing countries introduced export restrictions, for example Vietnam limited rice exports, Russia introduced quotas for the grain crops export (wheat, corn, barley, rye) until the end of June 2020. The situation further development with food export and food security depends on the epidemiological situation, however, since even according to the most optimistic scenario, the international economy will be covered by a two-year recession from 2020. So, the world food market will demonstrate instability in the medium term.

At the same time, according to the Strategy for the Development of Agriculture and Fisheries for the Period until 2030, approved by the Government of the Russian Federation on March 19, 2020, planned to increase agricultural exports to \$ 45 billion, increase the agricultural production by 25%, increase the volume index of agriculture fixed capital investments by a third, and will double the gross

value added (up to 7 trillion rubles) in the next decade. In crop production, compared with long-term average values, it is planned to increase grain production by 26.4 million tons, oilseeds - by 15.8 million tons, vegetables - by 2.3 million tons; animal husbandry is expected to increase livestock and poultry production by more than 3 million tons. In the current situation, such forecasts seem very optimistic.

The past 2019 was generally favorable for agricultural exports, despite its decline to \$ 14.6 billion compared to \$ 16.2 billion in 2018, due to a decrease in exports of the key commodity - grain. The preliminary data results show that the legumes export in 2019 was 1220 thousand tons (-10.2%), which is giving away only to the indicators of the previous two years; in value terms, it increased by 10.5% compared to 2018 (reaching \$ 359 million). Legumes are one of the new specialization branches in Russia. So, until 2009, supplies did not exceed 150 thousand tons, but in the last few years, the Russian Federation became one of the top five world exporters. Potato exports in 2019 increased by 80% and amounted to 333 thousand tons. This is a new historical maximum (the previous record was 222 thousand tons in 2016). In value terms, exports amounted to \$ 36.8 million (+ 62%). Fresh vegetable export increased by 21% and amounted to 164 thousand tons (\$ 32.1 million in value terms). In 2019, fish exports decreased by 3.5% and amounted to 1,490 thousand tons, which is giving way only to the record in 2018; in value terms, exports decreased by 2.8% and amounted to \$ 2502 million (for comparison: USSR peak export rate was 1041 thousand tons of all species fish in 1990). The export of meat and offal grew in 2019 by 17.1% to 362 thousand tons. Thus, a significant increase has been recorded in kind terms (+53 thousand tons) in sequence four years, and in general, positive dynamics have been noted since the end of the 2000s. Meat and poultry offal are the main export volume and amount to 210 thousand tons (+ 13%), cattle offal - 68 thousand tons (-2.2%) and pork - 59 thousand tons (+ 76%). In value terms, exports grew by 42% and amounted to \$ 623 million. It was the result of a large-scale ASF epidemic in China, leading to meat shortages and prices jump (Made by us, 2020).

In 2019, the food industry in Russia continued its progressive development in the manufacturing and export sectors as well. Last year finished food exports amounted to a record \$ 8.3 billion compared to \$ 7 billion in 2018; feed exports - \$ 1.26 billion against \$ 1.09 billion in 2018. The main goods that contributed to increasing the value exports: vegetable oils (+ 38% in-kind terms compared to the previous year, thereby Russia rose to 5th place in the world among vegetable oil exporters; in value terms, exports amounted to \$ 3,168 million) and all types feed (+ 17.1% in-kind terms; exports amounted to \$ 1258 million in value terms). In monetary terms, non-primary non-energy exports from Russia to China grew by 19% compared to 2018 and amounted to \$ 14.5 billion. Significant volumes of fish, crustaceans and mollusks (36.2% of total food exports), oilseeds and fruits (36.1%), meat and meat products (24.4%) are supplied to China. Based on the data of the Federal Customs Service, TsMAKP in 2020 predicts stabilization of agricultural exports at the level of the previous year and an increase in the food products export by 27% in-kind terms. At the same time as China was the main Russian agricultural products importer in recent years, they predict the probability of a drop in Russian foreign trade turnover. The world economy reformatting by now leads to a change in global trends in international trade, to huge structural shifts in exports and imports, which together with the expected economic recession in China casts doubt on the possibility of restoring Russian supplies in full.

They say the stability of national and regional socio-economic systems in the post-global world can be achieved if countries become self-sufficient and independent from external suppliers in the food industry, industrial production, financial, credit and monetary policies (Bianchi, 2008; Moretti, 2012). Nowadays such economic stability countries can achieve only if they have a developed and balanced domestic market. Customization of goods flows through new management systems will create the effect of micro-logistics, increasing the importance of micro- and especially medium-sized markets, accelerating and qualitatively tightening the processes of global economy regionalization. This requires a search for economically motivated points of Russia economic and socio-political space connectedness, which, most likely, will be located beyond the Urals and belong to a new wave of economic development of Siberia and the Far East.

Economic regionalization tightens requirements for the management quality of the country's internal socio-economic development (Andersson et al., 2004; Kutsenko et al., 2019). It is necessary to optimize for the territorial, but not marginal, factor in the location of industrial, agricultural, and especially food industry facilities, including the possibility of producing a basic set of products limited by simple logistics. The contours of a hybrid political and economic space are gradually being established, where the political, economic, and sociocultural aspects of development are becoming almost inseparable. Such hybrid spaces are a natural element of the economy regionalization process and, in particular, of the systemic connections that arise around the real sector.

There are 3 stages of the Russian institutional environment transformation of agro-industrial complex:

- 90s of the XX century - the stage of market expansion. This stage is characterized by the disintegration and deindustrialization of agriculture, the widespread use of the profit institution as the main criterion for efficiency, which negatively affected the ability of agribusiness entities to ensure food security of the country;
- 2000s - the stage of vertical integration. This stage is characterized by the expansion of agricultural holdings that did not adhere to the principles of socio-environmental responsibility of business, which are mostly dependent on foreign capital, embedded in the technological chains of Western economies;
- the sanctions period, which began in 2014 and was marked by the imposition of food and other sanctions on Russia, forcing the country to take a course towards import substitution and increasing food self-sufficiency. The processes of the agro-industrial complex institutional environment hybridization and agriculture clustering are intensifying (Ivanova & Merkulova, 2018; Ivanova & Nikitin, 2018). Clusters are considered as the interaction hybrid forms in local mesosystems, which differs from the soft forms of the hierarchy in the degree of economic units' autonomy and is implemented subject to the three factors unity - local (geographical), industry (technological) and institutional (Gareev, 2012).

We apply the principles of spatial development and hybridization of the institutional environment to the Baikal region agricultural sector, which includes the Republic of Buryatia (RB), the Irkutsk region (IR), and the Trans-Baikal Territory (TBT). The Baikal region is considered as a unified socio-ecological-

economic system, the subjects of which have a common mission and similar resources, conditions and development potential (Dorzhieva & Dugina, 2019).

The main directions of the Baikal region subjects' spatial development from the federal authorities' point of view are defined in the Strategy for the spatial development of the Russian Federation for the period until 2025 (Table 01), (Decree of the Government of the Russian Federation, 2019).

Table 1. Characteristics of the spatial development of the Russian Federation subjects included in the Baikal region

Characteristics	RB	TBT	IR
Russian Federation macro region	Far Eastern	Far Eastern	Angara-Yenisei
Russian Federation priority geostrategic territories	+	+	-
Perspective centers of Russian Federation economic growth, which will contribute to the Russian Federation economic growth:	-	-	Irkutsk
- more than 1% annually;	Ulan-Ude	-	-
- from 0.2 to 1%;	-	Chita	-
- up to 0.2%.			
Perspective centers of economic growth, where conditions for the formation of world-class research and educational centers have arisen	-	-	+
Economic specialization:			
- crop and livestock production, provision related services in these areas;	- perspective;	- perspective;	- perspective;
- food production;	- perspective;	- unpromising but critical important;	- perspective;
- beverage production	-unpromising;	- unpromising but critical important	- perspective

We note that the RB and the TBT were included in the Far Eastern Federal District only on November 4, 2018, before that they were part of the Siberian Federal District, as the IR. In our opinion, such a separation is artificial, due to the persistently depressing socio-economic situation in the RB and the TBT and the need to apply special measures of state support for the socio-economic development of these territories, which are institutionally more convenient to implement within the Far Eastern Federal District (the Far East, being a strategic priority in Russian regional policy, enjoys several benefits and preferences, such as the possibility of creating priority development areas, infrastructure subsidies for investment projects, providing citizens with a free hectare of land, etc.). However, in terms of development inter-regional and inter-municipal cooperation, rational nature management, preserving the natural and historical-cultural heritage, preventing degradation of Lake Baikal unique natural ecosystem, the Baikal socio-ecological-economic system should be considered as a separate macro-region that needs

special mechanisms for implementing its natural resource and transit potential (as stipulated by the Strategy for the socio-economic development of the Far East and the Baikal region for the period until 2025, approved by the decree of the Russian Federation government, dated December 28, 2009, No. 2094-p.).

Based on the perspective and critically important for the regional economy areas of economic specialization and the need to take into account both socio-economic and environmental consequences of the Baikal region development (it is, first of all, about preserving the ecosystem of Lake Baikal without compromising the level and population life quality living on this territory), the authors suggest the priority project for the creation of an inter-territorial agricultural cluster with a specialization in the manufacturing of organic livestock products (Dorzhieva & Dugina, 2019).

We highlight the following Baikal agrocluster development trends in the context of regionalization: the problems of reorienting sales markets due to the tourism industry crisis will come to the forefront (according to preliminary estimates, 2020 will turn out to be the worst for the industry over the past 30 years: a decrease in incoming tourist flow by 25-50% is predicted due to epidemiological threats) and the activation of innovative processes in the agricultural sector (despite the sufficient scientific potential, the share of innovative products and technologies in regional agricultural production is negligible). So if the negative dynamics of the incoming tourist flow is able to partially compensate for the intensive development of domestic tourism (it is expected to equalize the imbalance between foreign and domestic spending of Russian tourists), then the agricultural clusters' innovative development without the integrated use of digital solutions is unrepresentable. Meanwhile, the technological and digital lag of the domestic agro-industrial complex from foreign markets makes the prospects for its entry into the sixth technological mode by 2030 very doubtful. Despite the current federal project "Digital Agriculture", implemented in the framework of the national project "Digital Economy", agribusiness still prefers extensive development and further production mechanization. According to a study conducted by the Forecasting and Monitoring Center, 33% of farm managers in Russia are restrained about IT because of their high cost, the same number do not have enough information about the benefits of digitalization, 15% doubt the functionality of the technology and the reliability of modern technology, and 9 % of respondents believe that the introduction of innovations will entail the costs of retraining personnel (Gavrilov, 2019). The testing of smart technologies is carried out mainly by large agricultural holdings of the Southern Federal District, which have financial, human and information resources. Small and medium-sized businesses use only some elements of digital systems.

The Baikal region is characterized by a low level of the digital economy development, especially in rural areas: in many settlements, there are difficulties with access to the Internet due to the information infrastructure underdevelopment (the number of subscribers of fixed / mobile broadband Internet access per 100 people in the RB is 14.5 / 71.9, TBT - 15.6 / 63.7, IR - 20.5 / 93.1 units, respectively, while the average indicators in Russia - 21.7 / 86.2). However, even in IR, where the values of the indicators are close to the national average, there is a significant gap between the level of informatization of urban and rural areas, the infrastructure for storage and processing, logistics chains of sales of agricultural products are absent or inefficient, technological reserves are not formed, and the profiles of research competencies lag decades behind. Digital agriculture implies that soon the goods Internet and the Internet of everything

will unite the entire production chain into a unified ecosystem - from the creation of new fertilizers and species of animals and plants to the release of functional products that can radically improve human properties. This will cause the potential competitiveness of the Baikal region livestock complex will be determined by the effectiveness of advanced technical and technological solutions introduction in the direction of Smart Farm.

The creation of such farms is possible as part of an inter-territorial agrocluster, the hallmarks of which should be the innovations diffusion and the new business models based on end-to-end (platform) information and communication technologies that can significantly expand sales markets by establishing direct ties with food consumers. According to experts, when implementing the optimistic scenario of digitizing the agricultural process, the level of digitalization in the next decade may grow 3-4 times in index terms, the total increase in agricultural production will amount to 361.4 billion rubles, costs will decrease by 23%. Thus, the inter-territorial agro cluster formation on a digital platform will be a significant step towards ensuring the sustainable and stable development of the Baikal socio-ecological-economic system.

7. Conclusion

The priority goal of Russia in the reformatting international relations conditions, accompanied by the inevitable recession, is to ensure the national economic self-sufficiency in a new geo-economic and technological context. Nowadays the satisfaction of the domestic market needs comes to the fore. As for the agro-industrial complex it means reaching threshold values for the self-sufficiency level in basic foodstuffs by building regionalized technological and economic chains combined into a unified ecosystem on the base of end-to-end digital technologies.

On the example of the Baikal region, which includes 3 Russian Federation subjects, the prospects of the regional agro-industrial sphere development were considered. This imposes certain restrictions on business activity, forcing us to look for ways of environmentally-friendly innovative development, which involves the transformation of the production organization forms and the business model modernization.

One of the interregional cooperation perspective areas in the Baikal socio-ecological-economic system is an interterritorial agro cluster specializing in organic livestock products. We highlight the following decisive factors:

- with the development of domestic tourism, the demand for organic and local products will increase. The unique natural recreational resources will diversify the rural economy and complement the agricultural production function by the recreational;
- it is easier for small farms and personal (individual) subsidiary farms that dominate livestock production to minimize environmental risks and implement the principles of natural resources rational use;
- the consequence of the transition of the agro-industrial complex to platform solutions will be the development of a data transmission infrastructure, which will have a favorable effect on the social sphere (return migration to the village of certain population groups is expected), economic (followed by expansion of distribution channels through purchases through social networks and instant messengers) and environmental (distance education will allow update

competency profiles, which will make it possible to fully utilize the resource and energy-saving technologies of other industries.

- the consequence of the agribusiness transition to platform solutions will be the data transmission infrastructure development which will favorably affect the social sphere (occurrence of return migration to the village), economic (expansion of sales channels through social networks and instant messengers) and environmental (distance education actualizes competency profiles, which will make it possible to fully use the resource and energy-saving technologies of other industries).

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