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**AGRICULTURE OF  
KAZAKHSTAN:  
LATE XIX – EARLY XXI CENTURIES**



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The book is written in the genre of economic history and is devoted to the evolution of agriculture in Kazakhstan from the end of the XIX century to the beginning of the XXI century. In it, for the first time in the framework of one study, a cross-cutting analysis of three epochs of the economic life of agriculture in the country is given: the first – the end of the XIX century - the beginning of the XX century; the second – the 1920-1990 of the XX century; the third – the end of the XX century - the beginning of the XXI century. The book is based on modern approaches to the periodization of the economic history of the rural economy of Kazakhstan. The peculiarity is that historical realities are accurately correlated with statistical indicators, attempts are made to move away from political assessments, focusing on the study of the retrospective and modern process of agrarian evolution. The work is based on new methods of studying the economic growth in agriculture, which include comparative historical research, statistical analysis of big data, graphical interpretation, study of economic growth cycles.

The book is of interest to a wide range of readers interested in economic history, problems of evolution and prospects for the development of agriculture in the countries of the East.

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## SUMMARY

The book is written in the genre of economic history and is devoted to the evolution of agriculture in Kazakhstan from the end of the XIX century to the beginning of the XXI century. The history of evolution of agriculture in Kazakhstan is divided into three major periods: the end of the XIX – beginning of the XX centuries; 1920–1990s of the XX century; the end of the XX – beginning of the XXI centuries. The work is based on new methods of studying the historical and economic process in agriculture, which include end-to-end statistical analysis, graphical interpretation, cyclical periodization of economic growth.

The first period of evolution (Chapter I), covering the late XIX – early XX centuries, is directly related to the colonial policy of the Russian Empire, which assumed the transformation of rural society through the resettlement of Russian peasants to the Kazakh steppes and the sedentarization of the local nomadic population.

The second period (Chapter II), including the 1920s–1990s of the XX century – is a time of harsh transformations that Kazakhstan experienced as part of the USSR. This period for agriculture was marked by economic and political shocks – collectivization, plowing of virgin lands and the tragedy of the War 1941–1945.

The third period (Chapter III), in which the agricultural sector of the Republic of Kazakhstan has been since the early 1990s, is a period of independence of the country. The leadership of the Republic of Kazakhstan, having taken a course to create a market economy, achieved relatively stable economic growth in agriculture by the second decade of the XXI century.

The Chapter IV presents a retrospective analysis of long statistical dates of grain yield from 1906 to 2020. The basis of this analysis was two original methods: the first is a trend method for studying the dynamic series of yields, the second is a method for studying the cyclic unevenness of the yield movement. The basis for the study of cyclic unevenness was the well-known technique of N.D. Kondratiev, which revealed three cycles of yield during the XX-XXI centuries. The greatest attention in this chapter is paid to the visualization and interpretation of graphical information.

In the first period of Kazakhstan's agrarian history under consideration (late XIX – early XX centuries), a series of reforms aimed at integrating Kazakhstan into the administrative system of the Russian Empire was implemented. In the field of agriculture, two processes were going on in parallel – the formation of an agricultural economy and the transformation of nomads into a settled population. Economic transformations began with the reforms of M.M. Speransky in 1820–1840. In the laws of 1867–1868, in which much attention was paid to the land issue, a course was taken for forced sedentarization, and the lands of the historical nomadism of the Kazakhs were declared state property. The law of 1891 finally approved the basics of land use of Kazakhs. In the field of land policy, the Government of the Russian Empire imposed strict restrictions on land use among nomads and semi-nomads. For the use of each Kazakh family that agreed to conduct a settled economy, a plot of land of forty acres was allocated, and the surplus land was transferred to the displaced peasants.

In 1920, the Soviet era began in the history of Kazakhstan and the formation of the socialist mode of production. The primary task of the Soviet government was the nationalization of land, followed by the confiscation of livestock and property from wealthy peasants and bais. To eliminate discrimination of nationalities, the land privileges of Russian peasants were destroyed, the rights to water of Kazakh peasants

were equalized with migrant peasants; equality of all nationalities was conditionally ensured when allotting land.

In 1928–1932, forced collectivization was carried out, reinforced by the oppression of non-economic coercive measures planned state procurement, pricing policy, etc. In close connection with collectivization, a massive sedentarization of nomadic and semi-nomadic farms was conceived, which were to be collectivized by the whole. There were an idea of consolidation and creation of kolkhoz-sovkhoz farms with one-sided livestock specialization, where the generalized cattle were collected on giant unequipped sites. The result was a sharp drop in the yield and harvest of grain crops, the number of cattle decreased almost seven times, and the number of sheep decreased thirteen times.

In 1942, the Council of People's Commissars of the USSR adopted a resolution «On measures to preserve young animals and increase the number of livestock in collective farms and state farms», in which a course was taken to organize various forms of animal husbandry. By the beginning of the 1950s, the pre-collectivization livestock was restored. However, the program for the development of the livestock base in Kazakhstan was curtailed, and in the mid-1950s a course was taken for the plowing of virgin lands and the creation of a large grain-producing economy.

In the middle of the XX century. since the plowing of virgin lands, there has been a sharp change in the very nature of agriculture, a new technological mode of production (TMP) began to be created – labor-saving TMP. For the formation of this technological mode of production, the grain sector of the country had all the classic features. The vast spaces available for agricultural development allowed the introduction of capital-intensive mechanical means of labor, thereby contributing to the promotion of high labor productivity as a priority growth factor in the grain economy of Kazakhstan. The shortage of labor (this shortage was compensated by the mass movement of the

population from the central regions of the USSR organized by the authorities to the Kazakh SSR) for the implementation of large-scale projects for the development of virgin lands created a powerful additional incentive to save labor through the mechanization of agricultural operations. As a result, the grain sector of Kazakhstan began to develop as an export-oriented economy, which in the second half of the XX century acted as a supplier of wheat to the republics of the USSR, and subsequently, from the 1990s – in the third period we are considering – to the world market.

In the third period of agrarian evolution (since the beginning of the 1990s) of the now independent Republic of Kazakhstan, contradictions historically embedded in the agricultural economy manifested themselves in the strongest way. During its time in the USSR, Kazakhstan occupied a special place in the inter-republican division of labor. It was a region that had an excess (relative to domestic consumption) of basic agricultural resources. The dependence of Kazakhstan's agriculture on the economic complex of the USSR to it led at the beginning of the period of independence to the fact that economic perturbations that took place outside directly affected the country's agriculture. In other words, the inter-republican division of labor that developed in the USSR, in which the agricultural sector of Kazakhstan was involved, created additional difficulties on the way of moving the Republic to a new economic model of agriculture. Among the largest economic metamorphoses experienced by Kazakhstan, it is necessary to attribute a radical change in the proportion of agriculture in the national economy of the country, and first – a reduction in its share in the gross domestic product, as there was a multilateral diversification of the economy.

The beginning of the period of independent development was marked by the rupture of the existing economic external ties, and as a result, the decline in agricultural production. Over the period 1992-2000, the gross value added of agriculture decreased by 51%, and the

annual rate of decline was (–)6.8%. Since 2000, Kazakhstan has entered the era of sustainable development of agriculture. Over the period 2000–2020, the value of gross value added doubled, and the annual growth rate was (+)3.7%.

The land reform, which really began in 1995, was of crucial importance for the formation of a market economy. However, there is still strong opposition to the introduction of private ownership of agricultural land. In 2015, articles allowing the transfer of agricultural land to private ownership were introduced into the Land Code, but their effect was first suspended until January 1, 2022.

Currently, three types of farms are functioning effectively: agricultural enterprises focused on grain production and grain supplies to the world market, peasant and individual farms specializing mainly in the production of vegetables and melons, households that produce up to 70% of all livestock products.

Animal husbandry occupies a special place in the agricultural sector. Having survived the destruction of the nomadic type of economy, which absolutely could not exist either in the structure of the economy of the Russian Empire or in the national economy of the USSR, independent Kazakhstan faces a dichotomy of the development of the livestock industry – a pasture farm versus a large stable livestock farm. The book focuses on the transformation of the livestock sector during the designated three periods, while the nomadic cattle breeding options are considered not as a frozen traditional form, but as a structure reborn in historical dynamics, which changed from a classically nomadic to semi-nomadic, semi-sedentary, pasture driven. In this aspect, the thesis of «renomadization» appears in Kazakh society, and the question arises whether nomadic animal husbandry can be considered as a specific «nomadic» technological mode of production (TMP).

The grain sector of agriculture has an export orientation. However, the basis of the export potential of the agricultural sector in

Kazakhstan is made up of raw materials. About 80% of the export products of the agriculture and food industry are sold in the form of raw materials, while 42% are cereals. Among the important problems of the agricultural sector is the high import dependence on several products, for example, such as meat products, confectionery products.

Since the beginning of the 2010s, the government has increased attention to the development of agriculture, several state programs have been adopted aimed at modernizing agricultural production.

I'd like to draw attention to the fact that Applications have a separate independent meaning. Since the districts and regions of Kazakhstan have changed their names and borders throughout the historical range.

Appendices 1 and 2 provide maps and descriptions for their exact comparison.

Appendix 3 contains long series (1880–2020) of statistical data comparable by the studied territories, by time intervals, by prices, units of measurement, obtained based on a single methodology.

Appendix 4 is devoted to the theoretical analysis of two technological modes of production (TMP) operating in agriculture in the countries of the East and West – land-saving and labor-saving. Based on the economic and technological factors that determine the features of the two TMP, the differences and historical origin of the formation of these TMP are shown.

Appendix 5 describes animal husbandry systems that can be identified in modern agricultural activities. The mechanisms of modernization and ways of intensification of animal husbandry systems that are of the greatest importance for agricultural production in Kazakhstan are shown. From an economic point of view, the question of the existence of a specific «nomadic» technological mode of production (TMP) is also touched upon.

And a little bit about the methodology of the study, which covered almost a century and a half of the historical evolution of

agriculture in Kazakhstan. The method of comparative historical research was taken as a basis, in which the transitions between various political, social, economic, and corresponding organizational forms of the existence of agriculture in Kazakhstan were determined, and typological features of the existence and transformation of the agricultural sector were identified. Both spatial and dynamic analysis were used here.

From the point of view of technical analysis, when comparing long series of statistical dates and identifying transitions (stages) in the evolution of agriculture in Kazakhstan, we relied on the technology of «big data».

Of the technical solutions developed for the analysis of «big data», the following were used: data mining (intelligent analysis necessary to identify patterns in an array of heterogeneous information), mixing and integration of data (a set of techniques that allow integrating heterogeneous data from various sources), spatial analysis (a class of methods using topological, geometric and geographical information extracted from data), statistical analysis (economic and statistical analysis of time series, including regression analysis), visualization of analytical data (presentation of information in the form of graphs, figures, diagrams, both for obtaining results and for use as source data for further analysis, in particular, according to the method of Kondratiev's Big cycles).

Let us note some theoretical aspects on which the study of the agricultural evolution of Kazakhstan is based. Agriculture of Kazakhstan from the end of the XIX century to the beginning of the XXI century, moving from the colonial territory of the Russian Empire to the independent Republic of Kazakhstan, has experienced many difficulties and contradictions, ups and downs. In this book, an attempt is made, considering the political realities through which Kazakhstan has passed, to conduct a cross-cutting historical and economic analysis of the evolution of the country's agriculture.

Considering the evolution of agriculture in Kazakhstan over a century and a half, we first showed the chronology of modernization of the industry. The modernization of Kazakhstan's agriculture throughout the period under review was embedded in the Procrustean bed – on the one hand, «*social revolution*», and, on the other, economic «*reforms*».

According to A.I. Yakovlev's definition: «A *social revolution* is a violent upheaval in the socio-economic structure of society with the denial of the previous social and political system, with the denial of tradition», and «*Reform* is a complex process of rebuilding society on new beginnings, but without breaking with tradition».

Exploring the evolution of agriculture, we did not spend the entire society, but touched exclusively on the rural community, its economic structure, social ties, traditions, and ways of life. Therefore, both the *reform* and the *social revolution* were described in relation to the agricultural reproduction process.

Two sectors of the agricultural economy in Kazakhstan – animal husbandry and grain sector – were in historical retrospect not just disintegrated but were in conflict relations. In the XX century they underwent transformations, the results in the two sectors were completely different. The «nomadic» TMP, which had existed for centuries in animal husbandry, was partially destroyed, and partially reformed into structures with a predominance of pasture-driven farming. In agriculture in the 1950s. a large agricultural and industrial economy was created, based on a labor-saving TMP.

I take the liberty to assert that in the animal husbandry sector, the leading direction of modernization can be described as a process of *reform*, although there is enough evidence of the destruction of old social structures here. This is confirmed by the reduction of the indigenous population in 1928–1932 by 36%. At the same time, large livestock collective farms were created on the principle of pasture cattle breeding, which testifies to the preservation of traditions in the field of production. The modernization in the grain sector, which was forcibly

planted during the annexation of the Kazakh territories to the Russian Empire, can be described as a *social revolution*. Thanks to the creation of grain sovkhoz (grain growing factories) in the 1950s, a fundamentally new type of agricultural production emerged for Kazakhstan – the classic labor-saving TMP. This process took place with the scrapping of previous social and economic structures – the denial of tradition.

To explain the direction of modernization of agriculture, it should be considered that this process is possible through the *reform* of production structures - the transformation of economic space, or their scrapping – the liberation of economic space from old forms. Thus, during modernization, the problem of the availability of free and occupied space arises, both in physical and economic terms. Is there a free economic space where new institutions and economic agents – subjects of these relations, alien to this society, can be planted, or are the transformations carried out within the limits occupied by the old institutions of the economic space?

In the first case, new economic systems and new institutions corresponding to them are introduced in a free space and the destruction of old economic structures does not occur. In the second case, modernization is accompanied by the scrapping or *reform* of old institutions. It is the combination of free and occupied economic space that is one of the factors determining the modernization model.

Historical experience shows that the conflict most often manifests itself in the agricultural sphere, where the economic space is occupied by traditional structures, and in order to break or reform them, the state must exert political will, which is associated with severe social consequences.

The ratio of free and employed economic space in the sectors of agriculture and animal husbandry determined the ways of modernization in agriculture in Kazakhstan.

For the development of agriculture, physical space became available after the reduction of the area of nomadism during the period of collectivization and the plowing of virgin lands. The economic space was initially free, since historically there were no agents producing grain crops in these territories, except for a small number of peasant migrants from Russia. Thus, since the 1950s, completely new production structures have been created, based on the classic labor-saving TMP, and having no traditional analogues. Here we can talk about a *social revolution*.

The situation was quite different in the livestock sector of agriculture in Kazakhstan, the economic space of which was occupied by a «nomadic» TMP (nomadic/semi-nomadic/semi-sedentary cattle breeding), where its established traditions and institutions operated. The imperatives of modernization required changes in the old institutions. The authorities did not completely scrap these institutions, attempts were made to reform them – at the beginning of the twentieth century through the policy of forced sedentarization, and in the middle of the twentieth century – by creating large livestock collective farms based on pasture cattle breeding. Thus, the modernization of the livestock sector in Kazakhstan was carried out through *reforms* with the preservation of basic traditions.

As a result of revolutionary transformations in the agriculture sector, a classic labor-saving TMP was formed. This type of TMP arose in the resettlement countries during the colonization of territories with vacant land suitable for cultivation. An example of such an economy can be the agricultural economy of the USA, Canada, Australia, Kazakhstan, Russia. In the resettlement countries, this type of agricultural economy began to form since the large-scale development of new lands in North America and Australia, in Russia – in the second third of the XX century, since the transition to a large collective farm and the expansion of cultivated areas in the South-Eastern regions and the Volga region, in Kazakhstan – since the middle of the XX century,

since the beginning of the development of virgin lands. Agriculture of this type was initially developed on dry lands, there was no integration of agriculture and animal husbandry. The relatively low yield, which arose due to the lack of organic fertilizers, low economic efficiency of mineral fertilizers and a weak irrigation system, was compensated by an increase in the area per employee. The increase in the output of the product per employee in such an economy was achieved by expanding the cultivated area, which was possible only with the widespread use of agricultural machines.

Modernization in the livestock sector in Kazakhstan has not yet shown the results that would correspond to modern standards adopted for pasture breeding of livestock. Traditional pasture-based animal husbandry prevails in Kazakhstan.

On a much smaller scale, stable animal husbandry is practiced, based on the creation of large animal and livestock farms. Such large farms to produce animal products, characterized by a high degree of mechanization of production, specially created, often imported, feeds, artificial breeding of animals, in which various biotechnological methods are used.

The experience of various countries of the world shows that pastoral animal husbandry is moving to an intensive stage of growth. Intensive pastoral animal husbandry was formed in the countries of North America, South America, Australia for the cultivation of cattle and sheep meat in open spaces. Two types of organization of intensive technologies of pasture animal husbandry can be traced. The first type is the development of intensive technologies on green pastures. Intensive pasture technology provides for the extension of the pasture period by creating special late-autumn and winter pastures, radical improvement of pastures by sowing grasses in pre-plowed or cultivated land, the use of new fencing and water supply technologies, the development of a special diet and mineral feed.

The second type of industrialization of pasture animal husbandry is the creation of feedlots, or special sites, where tens of thousands of cattle are being fattened at the same time. Today, feedlots are the most highly productive way of producing cattle meat. How are feedlots fundamentally different from the usual pasture animal husbandry? There are practically no pastures in our perception of this word – in fenced open areas cleared of grass, for several months animals receive specially developed enriched grain feeds for rapid weight gain. Certain breeds of cattle are bred for feedlots, biotechnological methods of herd reproduction are used, all stages of production are highly mechanized, including the distribution of cows. Accordingly, to produce cattle meat on feedlots, a significantly smaller amount of area is required, compared with the maintenance of livestock on ordinary green pastures, even with intensive technology.

The question was raised is it possible to modernize the pasture cattle breeding? There is no definite answer to it yet. Some scientists (A.M. Khazanov) believe that modernization is impossible with the nomadic method of production. But, remembering the «green revolution», it can be assumed that it is possible to reform traditional pasture animal husbandry without affecting historically established informal institutions.