

Formation and Development of Natural Reservoirs in Deep-Water Areas of the South Caspian Depression

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Abstract

The article deals with the problems of an effective regional economic management mechanism of agro-industrial complex (hereinafter AIC), uniting all sectors of agricultural production, its processing and bringing to consumers. We analyzed the characteristics of food supply security of the country by 80-85% in key product requirements by means of domestic production. The assertion that the excess of imports by more than 20% entails the termination of the accumulation effect was identified and justified. That is why many countries take measures to protect domestic producers in order to ensure food supply safety. In this regard, there is the need for modernization of agro-industrial complex in Kazakhstan, based on the formation of high technologies, implementation of modern management systems and effective involvement of innovations in economic turnover that allows achieving an economic growth in a globalized economy. The study notes that economic market-based mechanism in AIC of Kazakhstan regions has been formed defectively. This had a negative impact on the development of agricultural production in the region. The main reasons for this are the weakening of the role of state regulation and support of agriculture, lack of scientific concept of reforming, crudity of agrarian reforms. Analysis of AIC management system of the region and its effectiveness showed that organizational framework is not consistent with international practice. Villages as market entities are not involved in the management system; consequently, their interests and existing problems hindering the innovative development of the agricultural sector are not taken into account.

Keywords: agro-industrial complex, effective management mechanism, food supply security, high technologies, market economy.

Introduction

The need to improve management of the AIC economy of the region is determined by the importance creation of normal living conditions and food supply security (Abdymanapov et al., 2016; Vershinin et al., 2013). Deficit of material and financial resources, low technical level, lack of motivation of labor, violation of the intersectoral linkages, and social backwardness of villages necessitate a better state support for the industry in the first twenty years of reform.

In modern conditions of development of agriculture, state regulation measures should be systemic in order to stabilize agricultural production, increase of the number of food products and satisfy the population with food requests. Now is the time to reconsider many of the issues on the

AIC economy management in the context of radically changed economic conditions of state's assistance. In the context of the entry of the Republic of Kazakhstan into World Trade Organization, functioning in the market economy possesses issues of solving strategic business tasks for agricultural entrepreneurs. Successful implementation of tasks predetermine the possibility of the development of the agricultural sector in the long term, taking into account the conditions set by the WTO (Abdymanapov et al., 2016; Vershinin et al., 2013).

Today the AIC of Almaty region of Kazakhstan is a leader in many positions in the Republic. There are more than 1/3 of peasant (farmer) households of Kazakhstan and 33% of irrigated lands, as well as 70% of the sown areas of sugar beet, and 90% of soybean of the Republic of Kazakhstan (Smailov, 2016). Mentioned basic features of the region and the role of the above factors in the process of determining the optimal mechanism for regional economic management of AIC determine the relevance and novelty of the research that is important and has a new qualitative content. Complexity of problems arising in the process of formation of economic management mechanism of AIC determines the objective need to develop its optimal mechanism in the conditions of the market and practical recommendations on the economic substantiation of development AIC sectors and increase of its effectiveness.

Agro-industrial integration is an essential component of improving agricultural entrepreneurship. It is economically, legally sound process of merging of parties of agricultural production, through the creation of integrated holding-type units, aimed at strengthening the relationship between the parties and increase of production efficiency at all stages of cooperation.

AIC produces food in order to meet the needs of population and ensure country's food supply security (Feintrenie, 2014; Smirnov, 2015). A radical update of all economic elements, including the agricultural sector, objectively necessitates the mechanism of functioning of agriculture organization in a market environment. The implementation of economic interests of consumers and producers of agricultural products, the satisfaction of individual and social needs become the highest goal, the achievement of which could provide food supply security of Kazakhstan and lead to the progressive development of agrarian formations. These scientific prescriptions are of particular importance for the implementation of the strategic development program of Kazakhstan until 2050. Catastrophic consequences of the introduction of permissive management model, which prohibits managing of production, interference in the activity of entrepreneurs, has confirmed its practical failure, collapse of liberal ideas in Kazakhstan once again. In order to achieve the positive effect, it is necessary to switch to the production management model, as it was done by all developed countries. The Great Depression of the 30s signified the collapse of liberal ideas, the practical failure of the permissive management model. It forced the USA to move to a model of the regulated market on the principles of state regulation. According to the Law "On regulation of agriculture", agricultural producers were brought a government order, plans for sown areas, livestock population, quotas of production were established (Lima, 2015). Today, planned economy and regulated market are a daily practice of the developed capitalist countries (Feintrenie, 2014; Smirnov, 2015). This historic cornerstone should be put in the strategy for effective economic management of AIC of Kazakhstan.

The world practice shows that the sustainable functioning of the market and relatively high rates of progress are provided when the public sector of a planned economy is not less than 70%, unregulated - 30% (Lima, 2015). Production management system will be able to perform permissive functions with the reclamation of market balance. Today we are experiencing a period of transition from socialism to capitalism; and this period was not investigated by the founders of Marxism-Leninism. Learning of the basics of the modern market mechanism and the cycle global economic

crisis requires new classical thinking. In this context, the development of the concept of an effective regional economic management mechanism of agro-industrial complex should be aimed at the generalization of accumulated international and national experience in this field. Their transformation into an effective development of AIC of Kazakhstan taking into account the development of integration processes in the global community is an important task.

Government regulation of agro-industrial complex is the most important component of the market economy mechanism in all developed countries (Diaz et al., 2016; Richardson-Ngwenya, 2013). The need for such regulation is related to the features of the AIC, especially agriculture, which do not allow them to participate in the intersectoral competition fully and equally. Agriculture, which depends on natural factors and has highly seasonal nature of production, as a rule, is more technologically backward industry in comparison with manufacturing industry. Investments in agriculture bring fewer outcomes.

On this occasion, American economists McConnell and Brue have noted, "... agriculture is a mainstay of pure competition in the economy with other, imperfect competition. Thus, the state assistance is justified, which is necessary to agriculture in order to counteract the adverse terms of trade, which are the result of this circumstance" (McConnell & Brue, 2003). All foreign countries play an active role in the processes of state regulation of agriculture development. American professor Michael Porter states that, "The main purpose of the state in the economy is to provide its citizens with a high and rising standard of living" (Porter, 1993). We suppose, the main purpose of state regulation of agriculture development should be economic and social stability, strengthening and improving the structure of rural areas, adaptation to the changing conditions.

In the economic literature, problems of ACI competitiveness are often covered lopsided, considering only agriculture (Feintrenie, 2014; Vershinin et al., 2013). However, some competent studies on this issue are available.

Thus, Lapova determines the competitiveness of the national AIC as country's ability to conduct an independent agricultural policy and effective economic competition in the domestic and foreign markets. In her view, agriculture's competitiveness depends on the level of food sovereignty; balance of supply and demand in domestic food market, rapid technological and investment reproduction; improving the quality of agricultural products; social stability and living standards of the population.

Lapova defines the main factors of competitiveness of the national AIC:

- high quality products that meet international certification;
- level of investment in human capital assets;
- pricing strategy;
- level of investment in science and new technologies: state guarantees for the

protection of capital, property and resources of agricultural enterprises (Lapova, n.d.).

In the context of planned economy, production efficiency was measured by key performance utilization efficiency of land, labor, and material resources (Kuznetsov et al., 2012). Financial performance was also identified; however, the assessment of the enterprise was not carried out based on them. The accomplishment of plan for the production and sales of products were main indicators. With the development of market relations, the various forms of ownership and management, indicators reflecting manufacturers' competitiveness and ultimate economic effects become more relevant when assessing the effectiveness of their work (McConnell & Brue, 2003; Porter, 1993).

The active state's agricultural policy is a necessary condition for the normal development of agriculture in any country. However, depending on the specific historical conditions and terms of the nature of the tasks that have to be resolved by the state in relation to agriculture, are different.

The main strategic task of the state's agricultural policy is to maintain such a level of agricultural production that would satisfy the population's needs for food and other consumer goods, raw materials for which is supplied by agriculture.

In our opinion, the common criterion of efficiency of agricultural production is the degree of achievement of the ultimate goal of its functioning and development, which consists in providing the population with food at the expense of its own production.

The purpose of this study is to clarify and deepen scientific approaches of development an effective mechanism for regional economic management of agro-industrial complex. Modern approaches to the development of an effective mechanism for regional economic management of agro-industrial complex are not sufficiently focused on the solving of those priorities that are associated with the improvement of management and extrication of agricultural industry from the crisis. It is necessary to study the classical methods of state and market regulation mechanism of AIC deeply.

The purpose was determined by the necessity of the following tasks:

1. The study of the theoretical aspects of the system of government and market relations in AIC management and identification of its features in terms of industrial and innovative development of the country;
2. The investigation of the most significant regional factors determining the formation of an effective regional economic management mechanism of agro-industrial complex.

Method

Methods of the study include systemic, economics and statistics, abstract-logical, monographic, constructive-calculation and others methods.

The systemic approach is based on a holistic consideration of an object as a set of elements in relations and connections between them, that is, the consideration of the object as a system. Systemic approach focuses on the study of the elements not as such, but the structure of the object and elements in it.

Rationality of decision comparing its economic indicators with the same indicators of a number of similar decisions was evaluated by the means of economics and statistics method.

On the basis of the abstract-logical method, the level of knowledge reflects the essence of objects and phenomena in the form of conclusions, and the results are expressed in the form of concepts, laws and theories. These two levels of knowledge in science correspond to two levels of research: empirical and theoretical. Separation of holistic research process into two levels (empirical and theoretical) derives from fundamental principles of philosophy: the unity of theory and practice.

Monographic method was used for deep, thorough, longitudinal study of age and individual characteristics of individual research subjects with fixation of their behavior, activities and relationships with others in all major spheres of life.

Constructive-calculation method was used to study the characteristics of the phenomena and processes, as well as to identify the potency of established regularities between them and the elaboration of science-based development of the phenomena and processes in the future. This method allowed developing projects, forecasts and recommendations for the future.

Theoretical and methodological basis of the research is composed of the works of domestic and foreign experts on the problems of the market economy, optimization of management decisions, simulation of production processes in agriculture, economic and mathematical modeling.

Results

Theoretical study of the content of the “efficiency” category made it possible to identify its subject-objectivity, resource, efficient, targeted and comparative characteristics. In most cases, the purpose of the studies on the efficiency is to compare the effectiveness of two or more situations: either different objects or different states of the same object at different times. Thus, the initial content of the concept of efficiency is comparative in nature and reflects the effectiveness of quantitative and qualitative changes in the economic system in the process of its development. It allows us to use the term “development effectiveness”, which can be seen as a long-term, non-linear, controlled process of transformation and enhance of economic potential, providing its transfer to a new qualitative state, allowing to compete at a higher level on the basis of consecutive steps to the effectiveness. The process of enterprise development does not occur in isolation from the external environment, but in cooperation with it, forming various types of coordination, expressed in various forms of hard and soft integration.

The authors proposed a methodological approach to the study of the effectiveness of enterprises development, involving the selection of stages on the sources of their formation depending on the type of development of economic systems, which are reflected in the form of progressive advance from the mobilization to behavioral and further to an innovative type (Figure 1).

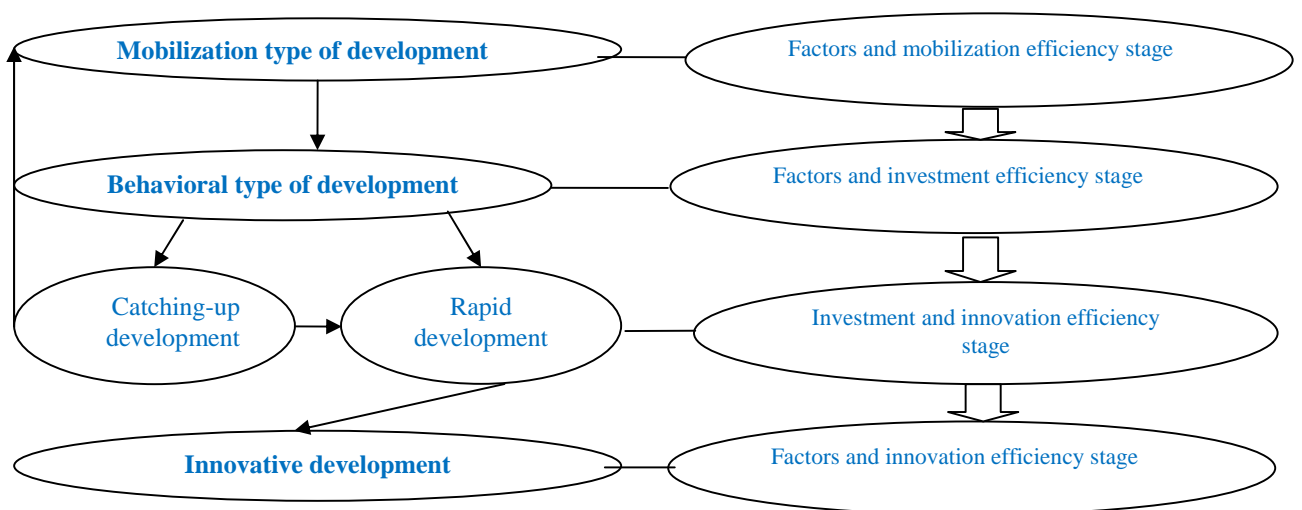


Figure 1: Stages of efficiency and of economic systems' types of development

Imperfection of market mechanisms, innovation-oriented character of the productive forces, globalization of economic relations reinforce the need for coordination and integration, which are objective processes of socialization of labor and production, corporate forms of property development, have a significant impact on the efficiency of economic systems at different levels. Mobilization type of development corresponds to the stage of factors and mobilization efficiency, the essence of which is, on the one hand, the consolidation and the formation of the necessary set of factors - general and fundamental through existing capacity and increase of resource availability for the production and sales of products required by the market. On the other hand, it is a reducing of the proportion of unused resources due to their inclusion in the economic turnover with a more rational use of resources.

The objective function of this stage is survival and overcoming crisis by agricultural enterprises, management style is reactive and anti-crisis.

Factors and investment efficiency stage corresponds to the behavioral type of development in terms of which new market motivation, objective functions, properties of all market participants are being developed. Depending on the selected priority at this stage of development, effectiveness can be achieved through the usage of factors borrowed from other countries. This efficiency stage is characterized by copying of management technologies and standards of behavior without considering the peculiarities of the Kazakh economy, mentality and traditions of Kazakh society. Thus, catching-up development is being formed and preserved. In the event when local investments are made in new facilities or the creation of innovation, their scale and efficiency are increasing, management technologies are improving, strategic type of managers and owners' behavior is forming, and then we can talk about the transition to a higher stage of efficiency and correspondingly rapid development. The objective function of this stage is to create long-term sustainable competitive advantages and high dynamic development. Effectiveness at the stage of investment and innovation efficiency would largely depend on the target settings, behavior and related policies as well as the integrated units or asset management companies in the holding companies operating in the food market, and the state. At this stage, ensuring factors are following: shaping the investment and innovation institutions and communications, usage of technologies of enterprises strategic management and the formation of innovative behavior.

Innovative type of development characterizes factors and innovation efficiency stage, where the organization of industrial production is based on transformed factors. Changes in the economic potential of industrial enterprises, leading to greater efficiency, are qualitative in nature and are provided by new technologies and techniques, methods of labor and production management, innovative character of human potential. Feature of this stage is the elaboration of innovative long-term development strategies, based on the merger of the strategic and innovative behavior using network integration.

Theoretical investigation of conceptual and methodological approaches allowed us to determine that the integration process is the transformation of factors of production and the objectively necessary process of reproduction and transformation of the economic potential in order to create long-term competitive advantages. The efficiency of economic system development is achieved at the transition to the stage of a higher level of efficiency.

Agro-industrial complex is a qualitatively new integrated system, and economic mechanism of management is the basis of its relations. This mechanism includes self-repayment, self-financing, alignment of economic business conditions, economic incentives in production, sales, processing and agricultural service maintenance, effective utilization of productive capacities, financing, credit provision, pricing, taxation (Bokov, 2013).

A necessary condition for successful implementation of improvements in the Republic of Kazakhstan is an introduction of comprehensive and coherent strategy for the development of agro-industrial complex. The main task of transition to a market economy is an achieving the formation of a new economic mechanism, based on the use of market-based instruments. Such an approach to its transformation, which would take into account the characteristics and complexity of the process, involve compulsory testing of various forms of economic activity, compound of economic growth with social objectives and requirements of the society, should be developed for abovementioned purposes. Problems of diverse forms of ownership on means of production (private, public) become important in these circumstances.

Reforming of public ownership in the agro-industrial complex occurred in following ways:

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- transformation of large and single households (collective and state farms) in peasant household, cooperatives, small businesses, their associations and other non-state forms of economic management, based on private property with rights of legal entity;
- formation of joint stock companies;
- sale of property by tender or auction.

Structural changes in the agro-industrial complex of Kazakhstan for 1990-2016 are shown in Table 1.

Table 1: Structural changes in the agro-industrial complex of Kazakhstan for 1990-2016

Name	1990	2000	2016	In % up to 2016	
				1990	100%
The number of registered agricultural entities	4454	200876	199267	44,3	100
Among them working	4454	175636	181322	38,8	91
Including: agricultural enterprises	4454	5443	8675	1,9	4,4
peasant households	-	170193	172647		86,5
Note - Calculated by the author on the basis of the Committee on statistics of Ministry of National economy of the Republic of Kazakhstan (Smailov, 2016)					

During 1990-2016, the number of registered agricultural entities has increased by 44.3 times, mainly due to peasant households. On the basis of diversity and equality of all forms of ownership on the means of production in agriculture, mixed economy was developing, consisting of 4,4% of various forms of agricultural enterprises and 91% of peasant households. Despite these changes, the country did not reach the level of 1992 in the main types of products: 43,2% of grain, 13,9 % of sugar beet, 82,2% of meat, 92,1% of milk and 39,8% of wool (Smailov, 2016). In this context, improving of the methods of AIC effective management of the Republic of Kazakhstan as well as government regulation is essential. State regulation requires science-based forecast of its consequences in social and economic development of the republic. In this regard, the importance of integrated forecasting, taking into account all changes in ecological and economic problems, is increasing.

The world practice shows that the sustainable functioning of the market and relatively high rates of progress are provided when the public sector of a planned economy is not less than 70%, unregulated - 30%. On this basis, the state order for agricultural entities, partial planning of sown areas and determination of the size of the subsidy has to be everyday attributes of an effective regional AIC management system.

The system of regional forecasts for the development of agro-industrial complex, consisting of three key steps - comprehensive forecast of the program of scientific and technological progress and arrangement of productive forces in the distant future - should be supplemented by targeted programs and short-term (1-3 years) forecasts. It is important to match the scale of the usage of these tools to the costs and revenues of the state budget, the volume of gross agricultural production, the incomes of agricultural producers, etc.

However, effective government regulation demands not only the funds issued on direct needs of agriculture, but also other resources used by the state to support the agricultural sector, weighed these resources with tools that agricultural sector consumes through taxation, pricing, distribution and redistribution of income, etc. Such an approach would allow estimating the impact of government measures on the economy of agriculture systematically and in a generalized form. This aspect is important for the analysis of sectors of agriculture, showing how the government supports the production of a particular agricultural product.

First, we should indicate the absolute figures of state agriculture regulation: overall size of the budget; amount of subsidies and grants, recorded in the budget and actually allocated; amount of concessional loans; amount of tax deductions, including the types of taxes; volume of centralized capital investments. The analysis of these indicators should be supplemented with an analysis of the relative indicators: share of budgetary funds in the gross domestic product, national income, total amount of the expenditure side of the budget, etc. They characterize the overall change in the scope of state agriculture regulation, and allow tailoring the volume of state support and regulation of the agricultural sector with the most important macroeconomic indicators, as well as total expenditures of the state budget.

The methods of the state support of farmers' prices used in foreign countries establish a level of indicative (taking into account the upper and lower limits of market fluctuations) price that is guaranteed by state at the expense of budgetary funds. Mechanisms for strategic tracking of dynamics of prices for means of production, costs and incomes in agriculture, the final prices of products and services should be provided. Pricing mechanisms in the field of agricultural production include the introduction of targeted, guaranteed, thresholds and other prices.

In the US and EU farmers' production prices are set at a level exceeding the world's level (Lima, 2015). The difference is covered by the expense of duties on imported products, and the value added tax (VAT) on the sale of all goods.

The EU has established a system for tracking the cost of production in agriculture and farmers' incomes. Statistical studies covered 62% of all farms that produce 83% of agricultural production. It examines the costs and income of farmers in 17 types of specialization of production and 44 regions. All this makes it possible to monitor the prices and farm income dynamics efficiently, and on this basis to determine the level of price support for agricultural producers (Inghelbrecht et al., 2014). Similar statistical surveys of peasant households were conducted in Kazakhstan.

In the EU, government agencies form a system of market prices supporting agricultural products and foodstuffs. The level of the minimal price is being set in order to guarantee the minimum income for producers; the target price is upper limit for the protection of producers from the price competition in the world market; threshold price is a single price for the EU countries, which is set based on target prices and tariffs, etc.

Russia also uses guaranteed price in order to calculate subsidies and compensation for agricultural producers. They are considered as the lower limit of the functioning of the free market prices and provide an adequate level of income for producers (Kuznetsov et al., 2012).

Thus, we see the principle in action – market controls (demand, supply), and state corrects, determining the extent of its intervention in the process of pricing in order to support agricultural incomes through price parity, and at the same time ensuring affordability of food to the population.

Taxes are an important measure of government regulation. Among the relative indicators characterizing the value of tax control methods, ratio of taxes paid by agricultural producers to the

total amount of revenues, to gross agricultural output, to gross income, to net income, to received subsidies and grants is distinguished.

Credit is even more important for the development of agricultural production. Following relative indicators can be used in the analysis of credit instruments of agriculture regulation: part of the budget allocated for the provision of concessional lending in the total budget expenditure on the development of agriculture; ratio of the amount of concessional lending and the total amount of credits received by agricultural producers; ratio of received loans in notes and accounts receivable, etc.

The borders of the state regulation of agro-industrial complex should be determined by the economic situation in the food market and of agricultural raw materials, stabilization of prices on basic material-and-technical and agricultural products, stability of domestic currency. The mechanism of market self-regulation of agrarian economy in Kazakhstan should be based on the principle of free enterprise, where each person or entity has the right to be engaged in any economic activity not prohibited by law. Despite all the obvious advantages of such a market, there are certain problems that can be solved only by government regulation.

Discussion

The system of scientific approaches on development an effective mechanism for regional economic management of agroindustrial complex is a complex problem. Modern approaches to the development of an effective mechanism for regional economic management of agro-industrial complex are not sufficiently focused on the solving of those priorities that are associated with the improvement of management and extrication of agricultural industry from the crisis (Kuznetsov et al., 2012; Lapova, n.d.). It is stated that the excess of imports by more than 20% entails the termination of the accumulation effect, or loss of effect on the industry's economic growth. That is why in order to ensure food security, it is necessary to take measures to protect domestic producers. Based on the study, we observed that economic market-based mechanism in AIC of Kazakhstan regions has been formed defectively. This had a negative impact on the development of agricultural production in the region. The main reasons for this are the weakening of the role of state regulation and support of agriculture, lack of scientific concept of reforming, crudity of agrarian reforms. State regulation does not cover such important functions as the formation of a well-functioning agricultural market. As a result, agricultural producers are deprived of opportunities of realization of production at market prices; their interests are infringed by enterprises of storage and processing and intermediate sellers. The practical implementation of innovative development program for agro-industrial complex of Kazakhstan is not possible at the current situation. Complexity of problems arising in the process of formation of economic management mechanism of AIC determines the objective need to develop its optimal mechanism in the conditions of the market and practical recommendations on the economic substantiation of development AIC sectors and increase of its effectiveness. Today we are experiencing a period of transition from socialism to capitalism; and this period was not investigated by the founders of Marxism-Leninism. Many researchers did not openly talk about it, associating it with the transition to a market economy. In this context, planned development of the economy inherent to the socialist system of society is being denied. Meanwhile, the history of the development of the world's economy shows that the sustainable functioning of the market and relatively high rates of progress are provided when the public sector of a planned economy is not less than 70%, unregulated - 30%. On this basis, the state order for agricultural entities, partial planning of sown areas and determination of the size of the subsidy have to be everyday attributes of an effective regional AIC management system. In our opinion, the main

purpose of state regulation of agriculture development should be economic and social stability, strengthening and improving the structure of rural areas, adaptation to the changing conditions.

Conclusion

In the context of the entry of the Republic of Kazakhstan into World Trade Organization, functioning in the market economy possesses issues of solving strategic business tasks for agricultural entrepreneurs. Successful implementation of tasks predetermines the possibility of the development of the agricultural sector in the long term, taking into account the conditions set by the WTO. In this regard, it should be noted that the main directions of effective management of the regional agro-industrial complex economy of Kazakhstan should be following:

- formation of laws and government regulations that promote the development of market relations, and control over their implementation;
- development of public policy on agricultural structural stabilization, support of producers incomes;
- development of individual industries and regions in order to accelerate the qualitative restructuring of production due to the rapid and large-scale application of science and technology;
- solving of problems of employment by means of state budget;
- funding and organization of scientific researches, breeding, introduction of scientific achievements into production;
- formation of food resources and agricultural raw materials for the state needs;
- providing agricultural producers with reliable information on the production and sales of agricultural products;
- control over the use of natural resources and environment, food quality, sanitary control, superintendence of land management, plant protection and veterinary wellbeing;
- state regulation of the market of agricultural products should be carried out mainly by economic methods using targeted, pricing, financial and tax institutions;
- state should become an equal market entity; develop large engineering production factors (water supply, transport and energy networks, etc.); promote competition, develop a system of information and marketing services; ensure monitoring over agricultural lands, the environment; to prevent and eliminate consequences of natural disasters;
- state support system for agricultural producers should be aimed at creating a market mechanism, development of market infrastructure, foreign trade activities.

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