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**Creating Regional Agro-Clusters as A Basis A Groindustrial
Integration in The Republics of Central Asia And Kazakhstan**

Orta Asya ve Kazakistan Cumhuriyetlerinde Tarımsal Bütünleşme
Temelinde Bölgesel Tarım Kümelenmesi Oluşturmak

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Öz

Orta Asya Cumhuriyetlerinin bağımsızlığı kazanmalarının ilk gününden günümüze değin ekonomik entegrasyon meselesi gündemden düşmemiştir. Ekonomik entegrasyonun Orta Asya Cumhuriyetlerinde vatandaşların refahının artıracığı ve makro ekonomik hedeflere ulaşılmasını kolaylaştıracağı düşünülmektedir. Ekonomik entegrasyon; Avrupa Birliği, ABD ve Çin ekonomilerinin karşısında güçlü bir rakibin ortaya çıkmasına vesile olabilecektir. Orta Asya Cumhuriyetlerinin ekonomik entegrasyonu konusunda bazı ilerlemeler olmasına rağmen bu konunun sonuçlanmasının önünde tarım sektöründeki sorunlar başta olmak üzere çok sayıda ekonomik ve örgütsel sorunlar bulunmaktadır. Bu sorunların başında arazi sahipliği biçimindeki farklılıklar, entegrasyon seviyelerindeki farklılıklar, tarımsal ürünlerin karşılıklı ticareti için standartların uyumlu olması bulunmaktadır. Bu makale genel ve özelde bölgenin tarım sektöründeki entegrasyon süreçlerinin, bu süreçte karşılaşılan sorunların analizini ve entegrasyona dair kavramsal yaklaşımların geliştirilmesini amaçlamıştır. Orta Asya Cumhuriyetlerinde entegrasyonun gerçekleştirilebilmesi için tarımsal endüstriler ile ilgili sektörlerin entegre edilmesini sağlayacak tarım reformları gerçekleştirilmelidir. Bu çalışmanın sonucunda tarımsal ürünlerin yerel ve bölgesel talep ve arz koşulları ile doğa ve iklim koşulları da dikkate alınarak bölgesel tarım kümelenmeleri gerçekleştirilmelidir. Bölgesel tarım kümelenmeleri için beş ana kümeden oluşan bir model geliştirilmiş ve Orta Asya Cumhuriyetlerinin bölgesel entegrasyona katılması için seçenekler sunulmuştur.

Anahtar Kelimeler: Türk Cumhuriyetleri, Tarım Sektörü, Tarım Ekonomisi, Tarım Reformu, Bölgesel Tarım Kümelmesi

Creating Regional Agro-Clusters as A Basis A Groindustrial Integration in The Republics of Central Asia And Kazakhstan

Abstract

The issue of economic integration from the first day of independence of the Central Asian republics to this day still has not been removed from the agenda. It is thought that economic integration will increase the welfare of citizens in the Central Asia Republics and facilitate the achievement of macroeconomic targets. Economic integration could create a strong



competitor to the economies of European Union, USA and China. Although the desire for integration processes yielded some results, there are many organizational and economic problems that require urgent solutions, especially in the Agricultural sector of the economy. One of such problems of the Agricultural sector is the difference in the forms of land ownership, in the levels of integration, the conformity of products of one republic to the standards of another, with mutual trade in Agricultural products. This article is devoted to the study and analysis of the course of integration processes in general and in the Agricultural sector of the region, as well as the development of conceptual approaches to regional agro-industrial integration as ways to solve the above problems. Studying the dynamics of the agrarian and land reforms of the republics of the region revealed a general trend in structural changes in Agriculture aimed at integrating industries directly related to Agricultural production. In this study, the possibilities of integration are revealed through the creation of regional Agro-Clusters taking into account natural and climatic conditions, as well as domestic and regional demand and supply of Agricultural products. A model of regional Agro-Clusters has also been developed, including five main clusters, and options have been proposed for the participation of republics in their creation.

Keywords: Turkic Republics, Agricultural Sector, Agricultural Economics, Agricultural Reforms, Regional Agro-clusters

1. Introduction.

From the first day of independence, the republics of Central Asia, embarking on a phased transition to a market economy, simultaneously looked for ways of economic integration in order to preserve the economic ties created in a planned economy. The reason of this is all the republics have felt the gap in the economic thread in all sectors of the economy, especially in Agriculture. Due to the climatic conditions and the available land resources of the neighboring republics, already for the years of the planned economy, a replenishing regional economy was created. If the Republic of Kazakhstan has supplied wheat and flour to its neighbors, Kyrgyzstan has meat and dairy products and Uzbekistan has vegetables and fruits. Widespread steps towards integration have yielded results, creating intriguing structures such as the "Central Asian Economic Community" and the organization "Central Asian Cooperation". In 1994, between Uzbekistan and Kazakhstan was signed the "Agreement on a Common Economic Space", which was later joined Kyrgyzstan, Tajikistan and Turkmenistan. The former president of Kazakhstan N. Nazarbayev focused on the economic union of the Central Asian republics, noting that "...it is better to create an economic union of the Central Asian republics. All over the world there is a need to create a union. In Latin America, this is MERCOSUR - Brazil, Argentina and Chile, in Europe Benelüks - Belgium, Luxembourg and the Netherlands. ...the region



of 55 million people without a language barrier, without the needs for an external market, can satisfy food needs by itself... "(2007) (Tasam, 2019). Despite the fact that the attempts to integrate have yielded results and many agreements have been signed on customs union and basic movement of labor, etc., full integration has not been achieved (Alibekovna, 2017, p.66). Of course, there are a number of factors affecting regional integration, such as population, labor resources, availability of Agricultural land, economic and geographical position, and others (Omarov, 2019).

Many studies have been devoted to the dynamics of integration processes, where the main, positive aspects, as well as the problems and factors hindering integration in this region are highlighted (Demir, 2019, p.252-257). According to researchers in this field, the economic base of the countries of the region is very strong for integration, as they possess raw materials, huge energy and labor resources, and great human capital (Alibekovna, 2017, p.68). Without going into controversy regarding integration issues, we note that the current President of Uzbekistan Sh. Mirziyayev also emphasized integration of the neighboring republics, noting that "...that increasing the economic potential of Central Asia and the region's competitiveness on the world stage is impossible without implementing effective regional cooperation projects (<https://www.uzbekistan.de/de/node/9704>. 07/07/2019).

To achieve these goals, regional integration should cover all sectors of the economy. But today there are certain problems (Ryskulova, 2020, p.68). In particular, these reasons are problems in customs, regarding energy resources and on the use of transboundary waters, sharing of pasture areas, on a rental basis. In our opinion, the region's food security should be at the forefront of regional integration. That is why a regional agrarian strategy should be developed, taking into account the joint use of production capacity and natural resources attracted to the Agricultural sector.

At the present stage of reforming the agrarian sector, the process of cooperation and integration has moved from segment attempts to establish links between sectors to a systematic approach to establishing links. In this regard, in the context of the adaptation of agrarian production and enterprises associated with this sector, the formation of conceptual forms of cooperation and integration is of particular importance. In this aspect, a promising integration step, in our opinion, is the creation of regional Agro-Clusters.

As noted above, environmental conditions dictate the specialization of the Agricultural sector. In addition, based on the available enterprises for the processing of Agricultural products and their capacity, the republics sell raw materials or finished products. In the framework of this study, we proposed conceptual approaches to the creation of regional Agro-Clusters, covering



vertically integrating sectors of the Agricultural and industrial complexes, also serving the Agricultural sector of neighboring republics.

2. Agriculture of Central Asia Countries.

Central Asia Countries (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan) comprise an area of approximately 400 million hectares (Kienzler et.al. 2012, p.95). Results of agrarian and land reforms formed integration in the agrarian sector. As a result of the ongoing agrarian and land reform, fundamental changes in the legal and economic aspects of land ownership relations took place in all CIS countries. In the republics of Central Asia, the transfer of land collective and state farms in possession occurred in various forms. Lerman and Sedik (2017, p.907) reported that individual share of arable land in individual use and share of the value of gross Agricultural output from individual farms increased in all Central Asia Countries. While private ownership of land was recognized in one republic, others retained state ownership of land with the right to a long-term lease with a subsequent legacy. Addition to this, transition in economic system and privatization has caused increase in Agricultural productivity (Lerman and Sedik, 2017, p.908). The effects of Agricultural reform on poverty are unknown and unpredictable (Varga, 2020).

Table 1. Share of Arable Land In Individual Use (%)

Country	1991	2010
Kazakhstan	1	39
Kyrgyzstan	3	76
Tajikistan	7	86
Turkmenistan	5	93
Uzbekistan	8	98
Average Central Asia	5	78

Source: Lerman and Sedik (2017).

The stages of reform in almost all republics covered the same processes. At the first stage, the creation of a regulatory framework and economic mechanisms for regulating agrarian-land relations should be provided. Differences in government regulation, or rather, government intervention in land-market and agrarian relations depended on the forms of land ownership and the degree of liberalization of the Agricultural sector. For example, the Kyrgyz Republic promulgating private ownership of land and liberalizing the agrarian market today has 429,000 active business entities operating in the field of Agriculture, forestry and fisheries. Among them, about 323 thousand, or 75.4 percent of the total number of such entities accounted for peasant (farm) farms, 105 thousand entities, or 24.6 percent - for individual entrepreneurs engaged in Agricultural production (<http://www.stat.kg/media/publicationarchive/1b8f2394-7681-49d8-adf3-b7babb600fe3.pdf>). Of the cultivated area of 1207.1 thousand hectares, the main part is owned by private farms and the inhibiting factor of



modernization of the Agricultural sector is small-scale farming with an average size of arable land of only 2.7 hectares, including irrigated 1.9 hectares (<https://www.krsu.edu.kg/vestnik/2014/v8/a15.pdf>). To overcome this situation, the state adopted a series of decrees aimed at consolidating farms through cooperation. However, according to scientists, the process of cooperation in the republic has not yielded tangible results and in recent years because of the imperfection of the legislation, the number of cooperatives has decreased. Considering that the formation of Agro-Clusters not only allows to solve sectoral tasks, but also contributes to the multipolar distribution of regional growth points throughout the country, ensuring the development on the basis of the emergence of new innovation centers (Abdurashitov, 2015). To overcome this situation, a cluster form of co-operation and integration is proposed.

With vast areas of Agricultural land, the Republic of Kazakhstan in the region is one of the largest world grain exporters. In the region, the main importer of grain and meslin is Uzbekistan, the volume of imports in 2018 amounted to 2,039.2 thousand tons. or 36, 9% of total exports. The export of grain to other republics of the region is Tajikistan - 928.4 thousand tons, Turkmenistan 218.8 thousand tons and Kyrgyzstan 129.8 thousand tons <https://kursiv.kz/news/otraslevye-temy/2019-01/kazakhstan-naraschivaet-eksport-zerna>. Although the republic has a huge potential but the agrarian sector is characterized by low labor productivity and small volumes of Agricultural products processing. The main reasons are considered the use of outdated technologies, low innovation activity and inefficient forms of management <https://articlekz.com/article/12775>. 07/08/2019.

In contrast to the neighboring republics of Uzbekistan, retaining state ownership of land in the agrarian sector formed farmer and diykan farms. In the course of the agrarian reforms, the size of the farms was repeatedly optimized for specialization. According to the results of optimization in 2015, the average size of a single farm in the republic was 58.7 hectares. <http://www.lex.uz/acts/2842780>. 07/08/2019. In order to modernize and develop the agrarian sector, the government of the republic sticking a number of resolutions on the commercialization of innovative projects and on the creation of Agro-Clusters. In addition, investors from US, UK, India and Russia companies are willing to invest to create Agro-Clusters (<http://gtn.uz/news/moi-gorod/amerikanskaya-kompaniya-planiruyet-investirovat-v-agroklaster-v-ruz>).

3. Model of formation of regional Agro-Clusters.

Clusters are geographical concentrated structures that include firms, suppliers, service suppliers, and other institutions (Dilek, 2017, p.87-88). According to the cluster theory, created and existed in 1985, the former agro-industrial complex was a cluster of Agriculture. The attention of state



authorities was focused on the interests and problems of Agriculture. The food industry processing Agricultural raw materials was financed on the residual basis. The transition to a market economy contributed to a change in the situation not in favor of Agriculture and the monopolism of the food industry, processing Agricultural raw materials, became obvious. In economic theory, monopolies cause unwanted solutions for markets such as inefficient production (Dilek, 2017, p.121-123). Regional clusters can be defined as a dynamic and a systematic process where a cluster goes through different phases of development (Bronisz and Heijman, 2008, p.36). Problems of Agro-Clusters were not studied deeply in literature (Anokhina et.al. 2019, p.1102).

Thus the agrarian reforms carried out in the republics of the region were liberalized in agrarian production. Pricing for Agricultural products, the problem of price disparity has not been resolved. In this regard, at the current stage of reforms, the task of state regulation of Agricultural production and the processing industry is to promote the formation of mutually beneficial economic relations between producers of raw materials and processing enterprises, and to accelerate the processes of integration and cooperation. The modern method of integration, scientists in this field consider the creation of Agro-Clusters, as well as the development of methodological approaches in the field of Agro-Clusters. According to a number of scientists, an important aspect when creating agro-clusters is the distance between the raw material zone and the processing company. In addition, yield loss during collection, storage and transportation. In this connection, there is a need to modernize the existing storage of perishable goods (Abdullaev et.al.2016). Therefore, it is very important not only to increase the production of the Agricultural sector on a national or regional scale, but also to preserve it, process it and bring it to the final consumer. Realization of this goal contributes to the formation of regional Agro-Clusters that take into account both the interests of the national economy and the interests of the regional economy. Agro-Clusters decrease the competitive pressure which is felt by small farmers. Competitive pressure can be defined as activities firms do or do not because of competition (Dilek, 2017, p. 199). Also Agro-Clusters help small farmers in having competition power. There are many definitions of competitive power in literature (Dilek et.al. 2017, 114). One of these definitions is due to Porter (2000). Competitive power is a positional attribute resulting from the firm's lower cost or difference to its customers compared to its competitors. Competitive power provides productivity, profitability and efficiency to firms. Agro-Clusters provide small farmers to survive in competition with big farmers. Generally big farms have competitive advantage because of scale economics in Agriculture sector. If firms produce more, their costs will be decreased in Agriculture sector which means that positive scale economics (Dilek and İnan, 2017, p.26). They can produce their products with lower costs.



Ultimately, the formation of regional Agro-Clusters contribute to economic stimulation in all branches of Agriculture in the region, seed production, processing industry, Agricultural and food, textile engineering. In our opinion, the predominant factors in creating regional Agro-Clusters are the conjuncture of the internal and external markets, the demographic situation in the region, which determines supply and demand, as well as the availability of economic and other resources. Agro-Clusters affect the demand of labor, landing, material and technical, financial, scientific, technical, innovative. Also it affects supply of grain grocery, meat and dairy, fruit and vegetable, sugar beet, cotton textile. In other words Agro-Clusters help other industries as well. So Agro-Clusters are important for achieving macroeconomic goals of state such as decreasing poverty and unemployment. Agro-Clusters generate opportunities for employment and income in a region (Wardhana et.al. 2017, p.161). Several researches found that small farms located in Agro-Clusters generally have opportunity to earn more (Wardhana et.al. 2020, p.15). Therefore policymakers generally prefer to support production of Agro-Clusters.

When creating regional agro-clusters, the processing enterprises, purchasing raw materials in large batches, in the republics participating in the creation of the cluster contribute to increasing the concentration and specialization in Agriculture and more efficiently use their production facilities. The establishment of sustainable relations with Agriculture in the regional raw material zone reduces the costs of processing plants arising from the acquisition of raw materials in certain areas, and the accounting of transport infrastructure helps to reduce transport costs when selling products to external consumers.

We note that the cost of by-products and production wastes obtained from the processing of raw materials is much higher than the cost of the main product, which creates conditions for obtaining more profit in the integrated processing of raw materials and diversification of production.

Demographic situation in the republic and in the region affects domestic and regional market. Also it is affected by domestic and regional market. While creating regional agro-clusters, policy makers should care about resources (labor, landing, material and technical, financial, scientific, technical and innovative capacity) and sectors (grain-grocery, meat and dairy, fruit and vegetable, sugar beet, cotton textile). These finished products should be sold to regional and foreign markets. By this way demand and supply structures in the region will be shaped.

Along with the existing measures of support of the states of the region, in order to accelerate the creation and introduction of new high-yielding varieties and hybrids of cotton, beets, fruits and vegetables meeting the requirements of international standards, interstate support is needed in



expanding the network of elite seeds and creating conditions for the organization of seed farms for growing crops of high reproductions for seeds.

Taking into account the existing potential and the volume of exports and imports of Agricultural products between neighboring republics, as well as infrastructures for transporting products to external partners from near and far abroad, the following variants of companies in the Republic of Central Asia and Kazakhstan are possible when creating regional Agro-Clusters.

Grain baked grocery products are imported by Kazakhstan and Uzbekistan, meat and milk are imported by Turkmenistan, fruit and vegetable are imported by Tajiksitan, cotton textile products are imported by Tajikistan. Also all of these products can be sold to foreign countries.

Among the above-mentioned factors, the regional specialization of Agriculture is important when creating Agro-Clusters. For example, for the beet sugar industry cluster, the northern region of Kyrgyzstan can become a source of raw materials, where the production of beets passes other regions. The meat and dairy cluster can be provided for in the Chui and Osh regions of Kyrgyzstan, since by the end of 2018 there are 13 million 520 thousand livestock in the country, most of which are grown in the Chui region - 3 million 743 thousand and Osh - 2 million 555 thousand goals <http://www.tazabek.kg/news:1547664?from=portal&place=last&b=9>.

07.03.2019. When creating cotton-textile clusters, many options are possible, covering areas of cotton specialization and textile factories and oil factories, as well as other cluster infrastructures. This model also includes tacit vertical integration. For example; Kazakhstan and Uzbekistan companies also should concentrate on macaroni and flour industry. Vertical integration gives opportunity to provide high quality input with cheaper prices to industries and by this way vertical integration develops industrial production.

4. Conclusion

Agro-Clusters are important opportunities for small firms in earning competitive advantage, competitive power and increasing their income. Because of this reason it is preferred to support establishment of Agro-Clusters in rural areas so that they decrease poverty and unemployment. In this research we try to make new model for Central Asia Countries (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan).

Summarizing the above, we can conclude that the current stage of development of the agrarian sector of the economy is undoubtedly largely connected with the modernization of production and the creation of modern forms of agrarian and industrial integration.



During the implementation of agrarian and land reforms, the republics of Central Asia created various forms of vertical and horizontal integration. Agricultural cooperatives, agro firms, joint-stock companies, holdings, agrarian-industrial-financial groups and other forms became the most common form of integration.

More progressive form of modernization of the Agricultural sector will everywhere become agrarian clusters both within the country and on a regional scale. The co-founders of agro-clusters can be both private companies and state-owned enterprises. When creating regional agro-clusters, both national and regional interests should be taken into account, i.e. Agro-Clusters should act as locomotives in deciding the food security of the country and the region as a whole. Also Agro-Clusters can give opportunity to increase Agricultural exports of countries. Further researches should concentrate on the success of agro-clusters in Central Asia. In the future we will have better opportunity to evaluate the results and advantages of Agro-Clusters.

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