

Supply Chain Management of Agriculture in Azerbaijan: Stages, Analysis and Perspective

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Abstract- The article considers economic supply chain management, which involves the intensification of the processing process by deepening the division of labor, the supply chain management of the material and technical base of production, the transformation of scientific and technical progress into productive force and the efficiency of the production management system. The article analyzes the issues of development of clusters in the agricultural sector, especially the supply chain management of the agricultural sector, the role of investments in supply chain management, technical and technological renewal in agricultural supply chain management, as well as improving its structuring in the modernization of the agricultural sector

Keywords: supply chain management, economic efficiency, general productivity of factors of production, modernization

1. Introduction

Supply chain has a crucial meaning for contemporary agriculture. Its development is necessary for satisfaction consumer's and farmer's demands. In other words, supply chain or value chain—is an important mechanism, which enables food security and rural development. Azerbaijan is an industrial country with highly developed industry and mechanized diversified agriculture. The most important place in the economy of Azerbaijan is occupied by the oil and gas pipeline, oil refining, chemical, engineering, mining and non-ferrous metallurgy. A variety of food and light industries. Agriculture specializes mainly in viticulture, horticulture, tobacco growing, vegetable growing, animal husbandry and sericulture.

Azerbaijan has close economic ties with many countries of the world, to which it exports about 350 types of industrial products, including mobile drilling rigs, lifting units, mobile towers, deep pumps, electric motors, geophysical instruments, oil products, light and food industry products (Azerbaijan economy). In modern conditions, the increase in production efficiency can be achieved mainly through the development of innovative processes that receive the final expression in new technologies, new types of competitive products [1-3].

As world experience shows, for the successful intensive development of the agricultural sector, the use of innovation is necessary. Innovation can be implemented by various methods. To apply each method, it is necessary to know the nature of the technology, the potential available, the market for the final product, the economic climate, and, most importantly, information on the competence of management. All this is interconnected with the removal of obstacles to success [4]. Therefore, in order to succeed, an innovative initiative is needed, including without high costs for social, organizational, human and production factors. The application of innovations in agriculture is very important at the moment. Here it is necessary to take into account the features of agriculture as an object of material production. The main distinguishing feature is that the main means of production are land and biological factors - plants and animals. The production process here is seasonal, and this is closely intertwined with biological factors. The results of agricultural production are significantly affected by climatic conditions. Land is an indispensable means of agricultural production. People are able to restore only its fertility, that is, the ability to provide plants with the nutrients necessary for their growth. The next distinctive feature is the production of a wide range of crop and livestock products, using technological processes that vary in length, vary from several weeks to several months, and this, in turn, negatively affects the process of its reproduction due to the fact that production costs are now paid, and income is received in a few months, and for winter crops even in a year. The third feature is that fixed assets like livestock and productive livestock and perennial plantations are reproduced in agriculture, and machines and equipment, buildings, structures and transmission devices are produced only at industrial enterprises. Working capital includes feedstock, materials, mineral fertilizers, various pesticides, energy carriers, they can be purchased at various industrial enterprises, as well as spent and replenished by revenue from the production process. Nevertheless, a significant part of working capital, including seeds of cultivated crops, feed, animals, poultry, are reproduced in agriculture in those volumes that ensure the continuous reproduction of material goods (final product) for the population and raw materials for the processing industry.

Azerbaijan pays special attention to the implementation of agricultural reforms and the development of agriculture,

which is one of the main areas of the non-oil sector. Agriculture is an important component of the country's economy; therefore, it is considered in the context of general development. It is no coincidence that the dynamic development of the Azerbaijani economy in recent years, the expansion of our financial capabilities has opened up new opportunities for agriculture [5].

Agriculture is one of the most important areas of the Azerbaijani economy. Compensation of population demand for food products, as well as processing of raw materials and other sectors of the economy is carried out by the agricultural sector. In the process of supply chain management of economic development in each region, the complexity of the economy of the republic, its normal regional development and integrity should be determined. The process of supply chain management of economic development in the republic, as in other countries, requires a new approach to economic management. The main goal of supply chain management is to build a modern society [6].

In order to modernize the economy, effectively implement its goals and objectives, the Declaration of the President of Azerbaijan entitled "Azerbaijan 2020: a vision for the future" was approved by Decree of December 29, 2012. The concept is based on an export-oriented economic model, increasing the competitiveness of the economy and improving its structure, the growth of non-oil exports, etc.

In the framework of the national environmental policy, the Decree of the President of the Republic of Azerbaijan No. 637 of November 1, 2018 approved the "National Strategy for Improving Solid Waste Management in the Republic of Azerbaijan for 2018-2022." The strategy covers the entire technical, financial, institutional analysis and analysis of the potential of the solid waste management system throughout the country, including detailed proposals to expand the scope of the collection, transportation and disposal of municipal solid waste.

Rural development remains the main focus of economic policy. At the beginning of 2019, the fourth "Program for the socio-economic development of the regions of Azerbaijan in 2019-2023" was approved. These regional development programs have been successfully implemented since 2004 and have significantly changed the image of cities, towns and villages in the regions of the country, and also opened up opportunities for them to build their capacity, improve infrastructure, improve the quality of public services, business and investment environment, and increase the welfare of the population (Center of Economic Reforms and Communication of the Azerbaijan Republic).

A huge contribution to the development of this sector was made by laws and infrastructure measures implemented in the tourism sector. Last year, 2.85 million foreign tourists visited the country, which is 6% more than the previous year. According to statistics, foreign visitors spent in our country over \$ 2 billion. Currently, there are more than 500 hotels in Azerbaijan, 150 of which are located in Baku.

The main objective of these reforms was to increase the welfare of the population, including the minimum standards of social security. As a result of the measures taken, in addition to increasing the size of social benefits and labor pensions, from March 1 of this year, the minimum wage was increased by more than 38%. In 2018, according to the

relevant decree of the President of the Republic of Azerbaijan, a lot of work was done to create a new Agency and DOST centers (sustainable and operational social security) under the Ministry of Labor and Social Protection of the Population. They cover 126 services in the areas of labor, employment, social security, targeted state social assistance, disability, pension, social insurance and other related areas. The first DOST center is planned to open in the coming months. Recent changes in the Tax Code have led to higher wages, the introduction of benefits for the private sector, and the expansion of the employment system. An important measure of social policy was introduced by the presidential decree "On additional measures in connection with resolving the issue of problem loans to individuals in the Azerbaijan Republic", which provides for the payment of compensation to citizens whose credit burden increased as a result of the devaluation of the local currency - manat - in 2015.

The positive results of the reforms carried out by the Azerbaijani government are also highly appreciated by international organizations and financial institutions. According to the World Bank's Doing Business report for 2019, Azerbaijan showed the most noticeable improvement in Doing Business indicators, having implemented a record number of reforms and entering the list of 10 countries that maximized their performance. Azerbaijan ranks 25th among 190 countries in terms of ease of doing business (Speech in writing by Mr. Rufat Mammadov, Acting Deputy Governor of the EBRD from Azerbaijan. EBRD Annual Meeting in Bosnia and Herzegovina).

The supply chain management of agriculture leads to an increase in the overall factor in this area. The growth of aggregate factor productivity compensates and even exceeds the rate of decline in production factors, and then there is an increase in agricultural production. Since the use of labor and land use factors for the development of the agricultural sector in Azerbaijan is steadily growing, an increase in the overall factor productivity is of particular importance. Especially at the first stage of supply chain management, it is necessary to increase investment [7-10].

It should be noted that one cannot talk about supply chain management if a targeted, adequate investment policy is not implemented in the country. In 2017, the National Entrepreneurship Support Fund provided 146 million manat of a preferential loan to finance more than 1950 investment projects worth a total of 635.6 million manat. Implementation of investment projects using these loans will provide up to 6,600 new jobs. 65% of loans fall to the regions of the republic, and 35% - to the settlements of the city of Baku. In addition, 67.6% of soft loans were directed to the agricultural sector. In general, during the 20-year period since the beginning of the first stage of agrarian reforms in Azerbaijan, agricultural production increased 2.4 times, including production in the field of crop production 2.3 times and livestock 2.5 times. Between 2001 and 2015, export of agricultural and food products abroad increased 11.1 times due to domestic production. There is also high export growth. Thus, the export of basic agricultural products in 2016 increased by 20.7 percent and in the first two months of 2017 it increased by 69.7 percent. The task of the State program for the development of clusters in the agricultural industry is to determine the main directions and directions of cluster development in the agro-industrial fields with a competitive advantage.

According to the Strategic Roadmap, work is to be done on the agricultural sector to increase real GDP by 2020 to 535 million US dollars and 660 million US dollars, respectively, to 1235 million manat (Strategic roadmap of the Republic of Azerbaijan on the prospects of the national economy, 2016).

During the development of agro-industrial clusters in Azerbaijan, one should carefully study world practice and choose the most suitable options. For example, in the case of Russia and Kazakhstan, the state is dominant in the formation and development of clusters. At the present stage, the Republic of Kazakhstan sets itself the goal of implementing a model for creating a competitive economy with priority sectors having the potential to increase competitiveness [11]. Government programs have been adopted to develop clusters in both countries. Thus, cluster development contributes to greater regional balance and diversification of the economy. Such motivation is more consistent with public policy. From international experience, Azerbaijan can implement and appropriate programs for the development of the agro-industrial cluster in the framework of cooperation with state research centers, business and experienced donors. The task of the State program for the development of clusters in the agricultural industry is to determine the main directions and directions of cluster development in the agro-industrial fields with a competitive advantage. Thus, scientific innovations will be transferred to the practical conclusions of public policy. The directions of the "State Agribusiness Development Program" can be classified as follows:

1. The choice of competitive areas in the agricultural industry using various scientific approaches.
2. Determine what is more important for cluster development than competitive areas.
3. Creating an educational policy to improve cluster performance.
4. Improve the mechanism for the implementation of scientific and technical policy.
5. Improving information policy in the direction of cluster development of the economy.
6. Creating a marketing strategy to ensure access to end products of the cluster.
7. Providing feedback on the preparation of the regulatory framework to ensure cluster development.
8. Development of the fundamentals of investment policy in agricultural clusters.
9. Creating a conceptual framework for an action plan for the development of agricultural industrial clusters.

Once a cluster's nuclear product has been identified, it must develop in the economic, institutional and institutional fields in order to increase the efficiency of the product at all stages of its production chain.

Azerbaijan, historically having deep traditions of farming, is one of the few countries that meet these international calls. Back in the Soviet period, under the leadership of national leader Heydar Aliyev, Azerbaijan turned from a backward republic into a dynamically developing country, where an agro-industrial complex with great potential was formed, resources that were effectively used, and intensive development mechanisms were widely used. After the restoration of independence, under the leadership of a national leader, agrarian reforms of historical significance were successfully implemented and a strong foundation was created for the sustainable

development of agriculture. While in 1990-1995, the country experienced a sharp decline in agricultural production, after 1995 steady growth was achieved in this area. And most importantly, thanks to agrarian reforms carried out by the political will of the great leader, a successful transition to a new system based on free market relations and private property was ensured.

Thanks to the large-scale comprehensive work carried out over the past 15 years, Azerbaijan today entered the modern stage of development. The basis of this development is the policy set by the President of the Republic of Azerbaijan Ilham Aliyev to ensure our independence, security, progress, supply chain management, social well-being and economic development. Like others, the agrarian sector, also responding to these calls with its dynamic development, has entered a qualitatively new stage. The political decisions adopted by the head of state in connection with the development of agriculture created real ground for the widespread use of advanced regulatory and support mechanisms in our country.

The strategic approach at the present stage of agrarian reforms is based on diversification and supply chain management of the economy, reducing dependence on oil, closer integration into global markets, reducing production costs by increasing productivity and increasing the material well-being of farmers.

SCM concepts are already consolidated as an essential part of modern management thinking. Its tools and techniques have helped companies in traditional areas such as manufacturing and retailing to achieve unprecedented levels of operational performance and efficiency in transaction coordination with suppliers and customers. Yet, the discipline is still rather incipient in the agrifood domain. While managerial literature abounds with textbooks and publications about SCM in general, publications specific to agrifood enterprises are few and far between. The present publication represents a contribution to fill this gap.

2. Research Methods

agri-food supply chain is a complicated and flexible process. Notwithstanding the globalization processes of the agri-food supply chain, changing the mode of connectivity between food production and consumption requires reconnecting food to the social, cultural and environment contexts in which it produced. Due to the large-scale agrarian reforms carried out in Azerbaijan, the growth rates in agriculture are stable. Real growth in agricultural production in 2003-2017 as a whole amounted to 166.4 percent, including in the field of crop production - 156.7 percent, in the livestock sector - 177.8 percent. According to the World Bank, over the years, real growth in the agricultural sector in Azerbaijan has been above the world average, as well as the corresponding indicator for the countries of the region. The trend of dynamic development in the field of agriculture continued this year, over the first 9 months, the total volume of agricultural products increased by 4.3 percent compared to the corresponding period last year, including crop production by 5.8 percent, and production livestock products - by 2.7 times. The current stage of agrarian reforms from the point of view of the development of traditional industries that create high added value, can also be described as a historical turning point. So, within the framework of the adopted state sector

programs, measures for the development of cotton growing, tobacco growing, rice growing, silkworm breeding, tea growing, viticulture and citrus growing were carried out in a consistent and systematic form. As a result, the dynamics of significant development was achieved in industrial and export industries that create high additional cost and the possibility of wide employment in rural areas. As a result of the expansion of the use of the intensive farm model in recent years, growth in livestock production has been achieved mainly due to intensive development.

Due to the growth of comparative advantages in agricultural production in Azerbaijan, high dynamics have been achieved in their exports. Over the past 15 years, the export of agricultural products has grown 6.3 times, including the export of fruit and vegetable products - 10.4 times, and over the 8 months of this year, the export of vegetables - 8.4 percent, fruit export - 32.5 percent, export of raw cotton - 2.2 times.

As a result of the country's successful agricultural policy in agriculture, favorable market conditions have formed and business activity has increased significantly. It also affected the increase in the number of employees and the growth in investment.

Due to increased local production potential and increased competitiveness in the country, the level of self-sufficiency in food has grown substantially. If during the periods of restoration of state independence by Azerbaijan this indicator for meat and dairy products amounted to 30-35 percent, now it is approaching 90 percent. The level of self-sufficiency in all types of fruits and vegetables exceeds 100 percent.

In order to increase the level of self-sufficiency due to local production in a number of sectors, to regulate development and management more flexibly, to apply a programmatic approach to relevant sectors with increased government support, and to create a mechanism for targeted political measures, according to the order of the head of state, the work carried out in the direction of developing "State Program for the Intensive Development of Livestock Production and the Effective Use of Pasture Territories", "State Program for the Development of grain production" and "State program for the development of seed production", is at the final stage.

Reforms defined to ensure continued development in the agricultural sector, based on scientific approaches, are based on a strategy to serve the interests of farmers and rural workers. Given this, the Ministry of Agriculture is guided in its activities by 3 basic principles - proximity to peasants and farmers, effective management and application of innovations.

Based on the fundamental principles, the ministry took five strategic directions as the basis for organizing its functional activities in accordance with modern requirements:

1. Agrarian analysis. In order to conduct analysis, evaluation and forecasting in the agricultural sector, prepare programs and projects, strategic planning of the industry and ensure fulfillment of obligations for its innovative development, the Center for Agricultural Research with the status of legal entity of public law has been created under the Ministry. To solve these problems, the Center is being formed as a professional structure engaged in research and analytical information services

based on scientific approaches and meeting international challenges.

2. Agricultural decisions. Currently, the main task in the field of agriculture is to ensure competitiveness and food security by increasing productivity. And this requires widespread adoption in all areas of technology of innovative production and management, modern and progressive methods and solutions.

Having carried out institutional reforms to strengthen the provision of agrarian-oriented scientific institutions, to bring innovative innovations to farmers, to turn these structures into a network of advisory services, the Center for Agricultural Science and Innovation was formed.

Currently, reforms to modernize agricultural science are ongoing. As part of these reforms, the overhaul of the administrative and laboratory buildings of all research institutes has been completed. In the institutes, laboratories of agroecology and agrochemistry, genetics and selection for the analysis of soil, plants and water, primary seed production and seedling cultivation, control of diseases and pests equipped with modern equipment were created, a boiler room and seed processing stations were built, modern and fertile orchards were laid. Due to the potential created in research institutes, producers will be provided with seeds and seedlings with high productivity.

In order to provide farmers with highly conditional and productive grain, seeds of grain, barley and corn in Khachmaz, Sheki, Agdzhebedinsky, Gobustan and Tovuz districts, plants for the processing of seeds of cereal plants are being built.

3. Agricultural knowledge and skills. In the modern period, called the "Century of Knowledge", the sustainable development of the agricultural sector is primarily associated with the organization of science and education in accordance with modern requirements. To this end, the curricula and programs of the Azerbaijan State Agrarian University (ASAU), which is the center for training the country's agricultural personnel, are being improved in the framework of cooperation with leading universities of the world. After a complete upgrade, all laboratories were equipped with modern equipment, new practical bases were created, incentive steps (measures) were taken to train professional specialists. According to the order of the head of state, from this year, students who scored above 400 and 500 points in entrance exams and entered the agrarian-oriented specialties of the ASAU began to issue an additional scholarship in the amount of 100 and 200 manat, respectively.

The presence in the agricultural sector of a training system and informational advisory services that meet modern requirements is one of the important conditions for ensuring the competitiveness of the industry. To this end, the Ministry has developed a "Strategy for the Organization of Trainings and Advisory Services" and conducts professional courses and educational activities for farmers.

In order to systematically carry out activities to form a system of advisory services for modernized scientific research, as well as education and training in the field of agriculture, the State Program for the Development of Agricultural Science and Education was prepared and presented as intended.

4. Agricultural support. In order to stimulate producers of products, reduce their production costs and increase opportunities for profit, the state is implementing major

support measures. As part of various support measures over the past 10 years, agricultural producers received subsidies in the amount of about 1.2 billion manat.

Measures to support and provide services are ongoing to improve the supply of the agricultural sector in all areas, in particular, agricultural machinery. From the side of OJSC Agroleasing, about 44 thousand agricultural machinery, 843 thousand tons of mineral fertilizers and over 30 thousand heads of pedigree cattle were brought to the country, which were transferred for use on favorable terms.

The introduction of the e-Agriculture information system created by the Ministry will serve to ensure transparency and flexibility in the agricultural sector, including in the provision of subsidies. The implementation of all services through e-government will create additional benefits for farmers. They will increase their awareness, productivity and forecasting opportunities for sales, as well as the opportunity will be created to simplify public services and reduce documents, access to services, as well as introduce new market mechanisms.

In order to improve the institutional mechanisms of state care provided to farmers, as well as implement educational measures to provide preferences for activities in the field of agricultural services, strengthen work with farmers, use innovations, according to the relevant Decree of the President of Azerbaijan, based on district (city) agricultural departments State Agrarian Development Centers (SADC) were created. Along with this, a Council of Farmers and an Agrarian Advisory Council were established under the Ministry. The process of the formation of the SADC and the farmers' councils operating here has been completed.

5. Agricultural trade. Currently, in the agricultural sector there is an increase in economic activity, interest in this sector, as well as productivity. In order to improve the market conditions for farmers, as well as assist in eliminating problems arising during the sale of products, a State Agrarian Trading Company was created under the ministry.

3. Results and Discussion

Global supply chain defined as the set of economic, administrative and political agents that work along the economic itinerary of a product from the initial production stage to the final consumption stage; or as a linked set of value creating activities encompassing product design, input procurement, primary production and processing, marketing, distribution and service. An important contribution to the development of agriculture in Azerbaijan is made by international cooperation. Collaboration with international organizations such as the IMF, the World Bank, the Food Organization of the United Nations (FAO), the International Fund for Agricultural Development (IFAD) and some others have attracted significant investment in agricultural projects. Most successfully, the country cooperates with the International Fund for Agricultural Development. Over the past years, Azerbaijan has implemented several large projects with the participation of IFAD. To date, 4 projects have already been completed, another one is ongoing. IFAD's total investment amounted to \$ 67.4 million with a total project value of \$ 199.8 million. Interaction with international organizations, using best practices, improving infrastructure and creating economic institutions in the framework of this cooperation

are fully consistent with the state policy on the development of agriculture and rural areas, and will continue to be effective tools for the development of agriculture in Azerbaijan. Great prospects for Azerbaijani agriculture represent the supply of products to foreign countries. The export of agricultural products and food products from Azerbaijan in 2013 amounted to \$ 734.6 million (The State Statistical Committee of the Republic of Azerbaijan). Despite growing export volumes, the share of agricultural products and food products in the total export of the republic amounted to only 3.7%, the leading role still belongs to hydrocarbon raw materials (The State Statistical Committee of the Republic of Azerbaijan). The main export direction of Azerbaijani agricultural products and food products is Iraq. Export to this Middle Eastern country amounted to \$ 255.1 million, mainly vegetable oil, sugar and margarine (The State Statistical Committee of the Republic of Azerbaijan). For a long time, Russia has been one of the main export markets for Azerbaijani agricultural products and food products. In 2013, the volume of exports from Azerbaijan to Russia amounted to \$ 240.4 million, which amounted to more than a third (37%) of exports of goods of all categories from Azerbaijan to Russia (The State Statistical Committee of the Republic of Azerbaijan).

Azerbaijan strengthens its foreign economic relations with Asian countries. Agricultural and food products play an important role in trade with the countries of the Middle East and Central Asia. In these circumstances, Azerbaijan often acts as an important partner to meet the needs of some countries for certain types of goods (for example, sugar). Niche markets exist for the republic and in Europe. So, in some years, Azerbaijan has satisfied the need for sturgeon caviar of such countries as Germany and Switzerland. Thus, for the agriculture of Azerbaijan, the priority directions of export and sale of products are separate groups of goods. Regarding cooperation with Russia, the second largest market for Azerbaijan, significant potential remains for increasing exports [13-17].

First of all, it is necessary to develop fields (fertilizers, seeds, machinery, pesticides, etc.) serving agricultural production (nuclear product). In order to increase the efficiency of agricultural production, plowing the soil, sowing, harvesting, etc. At the same time, services should be organized to support the production of nuclear products. After the product is ready, packs, stores, dries, etc. technology must be installed that performs the processes. Storage, transportation and logistics of nuclear products, as well as marketing and sales, are an integral part of the cluster approach. The cluster supporting infrastructure is also important: education, research, trade organizations and associations. Supply chain management involves technical and technological updating of the agricultural sector. In recent years, the quantitative growth of agricultural machinery in Azerbaijan has been one of the positive aspects. One of the main features of the agricultural equipment supply in Azerbaijan is the return attention to the average increase in capacity. Currently, Azerbaijan has a capacity of 100 horsepower, which is 2-3 times less than in developed countries. In recent years, a new approach has been developed to increase the efficiency of the technical productivity of the agricultural sector with an increase in productivity. According to this approach, the strength of technology should be increased for high productivity, crop loss. In the USA, tractors with a capacity of 300 horsepower

are used for sowing, and combines with a capacity of 400 horsepower are used for harvesting grain [16].

It should be noted that currently the agricultural sector needs additional financial resources. Unlike other areas, it is impossible to work effectively without state support in the agricultural sector. In this regard, he uses state subsidies and subsidies to regulate the income of agricultural producers. In the country, 50 manats of subsidies are given per hectare of cultivated area of agricultural production, and this amount also applies to the second sowing on the same plot. In addition, 40 manats of budget funds will be paid for each hectare of wheat and rice landing site. Producers receive subsidies for the production of cotton, tobacco and sugar beets, in other words, producers receive subsidies for the final product. About 70 percent of mineral fertilizers, as well as natural fertilizers (vermicompost) and pesticides are sold to manufacturers. At the same time, 40 percent of the cost of agricultural machinery and modern irrigation systems sold to leasing companies of Agroleasing OJSC is paid from the state budget. In addition, irrigation water is sold to manufacturers at a reduced price. Modern seed farms are also being created to provide agricultural producers with quality seeds and seeds. The results of these events have shown themselves in the near future. Thus, the use of fertilizers and pesticides in 2016 increased by about 2 times compared to 2013. Also, during the 12-year period of activity of OJSC Agroleasing, 40 percent of the purchased agricultural machinery was accounted for in 2014-2016. Thus, the issue of providing farmers with agricultural equipment was resolved in a short time and the problem of lack of equipment was eliminated. In support of livestock, 50% of high-performance goods are sold to manufacturers through long-term lease payments from the budget. In addition, 100 manat is given for artificial insemination for each calf (Agriculture of the Republic of Azerbaijan. State Statistics Committee of Azerbaijan).

In Azerbaijan's agriculture, livestock productivity is 39%, and agriculture - 61%, the main area of which is grain farming. Studies show that the geographical proximity of related economic activities provides productivity and innovative development. Clusters are key factors in regional economic development — end-producers, suppliers, service providers, research laboratories, educational institutions, and other institutions in a particular area of the economy [15]. The latest trends in the science of management are key activities/competencies, focusing on companies has strengthened trust in their close partners [14].

Supply chain management of the agricultural sector of Azerbaijan has a number of features:

1. As a result of supply chain management, agrarian sectors increase capital productivity;
2. Supply chain management creates a higher demand for skilled labor;
3. Increases the competitiveness of modernized agricultural production;
4. Supply chain management contributes to the creation of a new organizational and managerial mechanism in the agricultural sector;
5. Supply chain management creates a practical need in certain areas of science in Azerbaijan and promotes the commercialization of science;
6. Supply chain management creates the basis for training specialists in higher education in the field of

education and stimulates the complex nature of educational and business relations;

7. Supply chain management ensures the development of economic sectors that will serve the agricultural sector in a chain reaction;

8. Supply chain management expands the export potential of the agricultural sector;

9. Supply chain management of the agricultural sector will accelerate the socio-economic development of the regions;

10. Supply chain management creates the basis for the influx of foreign investment in the agricultural sector;

11. Supply chain management reduces the demand for labor in the agricultural sector and creates the conditions for urbanization [14].

The main feature of innovation in agriculture is closely related to the specific characteristics of the production process. Innovations in the field of agriculture can be divided into several stages:

- economic innovation;
- manufacturing and technological innovations;
- material and technical support;
- agricultural innovation innovations;
- investments aimed at improving the social conditions of the rural population;
- investments aimed at preserving productive species and limiting mutant (GMO) varieties;
- environmental innovation, etc.

The development of innovation, which plays an important role in accelerating the supply chain management of agriculture, should be carried out through the necessary scientific research. It should also be determined by the application of the obtained scientific results in the production process, and the system should be organized in accordance with this content.

The expansion of the globalization process has created favorable conditions for the achievements of the scientific and technological revolution in the formation and development of entrepreneurship. For the development of the agricultural economy, the following areas of scientific research are needed:

- Improving the competitiveness of the agricultural sector;
- Study of ways to increase the productivity of production factors;
- Improving the well-being of the village and involving the process of urbanization in the general socio-economic interests of the country, etc.

The development of supply chain management of the agricultural sector should serve not only the content of the region, but also the renewal of its internal harmony. Since agriculture is more important than other sectors of the economy, it needs a more social and economic approach. Therefore, supply chain management should be carried out on a socio-economic basis.

In modern conditions, one of the key issues in the supply chain management of agriculture is the further improvement of its structure. It should be noted that structured production of commercial products should be considered more. At the same time, farms producing agricultural products must be economically free to carry out commercial activities. To implement all these processes, market infrastructure must also be sufficiently developed. According to the experience of foreign countries,

agriculture should develop in accordance with a multifunctional concept. The main goal here is that agriculture should not only produce food. At the same time, industry needs raw materials. As a result, it is important to create social benefits. The main areas of the agricultural sector are:

- the maximum cost of domestic food security of the country;
- continuous protection of the ecological environment and balance;
- conservation and restoration of the agronomic landscape;
- creating a market environment in which large, medium and small types of agriculture are printed;
- strengthening control over the efficient use of useful land;
- expansion of the insurance system in agriculture and its supply chain management;
- increasing agricultural productivity using modern technology;
- ensuring the standard of living of the population employed in agriculture;
- stabilization of the agricultural sector;
- ensuring the regular supply of entrepreneurs.

Important conditions for achieving these goals are the full and most effective use of all the country's capabilities, available economic, social and political resources, the creation of conditions for strengthening the potential of the republic. From this point of view, the development of energy, transport, transit and logistics infrastructure is provided, as well as special attention is paid to the development of regions, the formation of regional development centers taking into account the competitive advantages of each region, the development of infrastructure and social services in urban and rural areas.

In the future, the provision of agricultural producers with modern equipment, fertilizers, seeds and seedlings will be improved. Further improvement of scientific support and training in the agricultural sector is envisaged. Stimulating measures will be implemented for the intensive development of various branches of agriculture, and initiatives to create large grain farms will be supported. From the point of view of intensive agricultural development, measures will continue to be taken to create warehouse complexes in the regions based on the most modern technologies, regulate seasonal prices, prevent product losses, protect the domestic market and increase the country's export potential [17].

It should be noted that a number of state programs have been implemented (including 2004-2008, 2009-2013, 2014-2018), providing for the continued development of the republic's agricultural industry in rural areas. Due to their implementation, thousands of modern and modernized objects of agricultural infrastructure in rural areas have been created.

One of the important conditions for the successful implementation of agrarian reform was the effective privatization of property. For its implementation in the republic, the required regulatory framework was created. As a result of privatization in the republic, 70.9% of the total value of the property went to private households, 22.6% was transferred to the ownership of municipalities and 6.5% to the state. In the agricultural sector of the republic in the field of privatization of certain types of state

property, great successes have been achieved. So, trucks, tractors, cotton pickers, grain harvesters, farms with cattle and small cattle are completely privatized and transferred to entrepreneurs.

As it known, the natural, human and material resources in different territories both quantitatively and qualitatively differ from each other. To accelerate the country's socio-economic development, their accurate accounting and effective management are an objective necessity. Therefore, the adopted state programs to accelerate the socio-economic development of the regions of the Republic of Azerbaijan take into account the features, sizes, significance and other characteristics of each region. All these features should be taken into account in the management of the agricultural sector, in the appropriate use of its capabilities and resources.

The successful implementation of reforms, the government's concern for the development of agriculture, the introduction of advanced technologies and innovations, the allocation of subsidies, mineral fertilizers at preferential prices allowed farmers to grow record crops and increase export-oriented products. And as a result, the pace of development of the agricultural sector of Azerbaijan has increased significantly, amounting to 7 percent this year. And this, in turn, suggests that every year the country's food security is strengthening, and the welfare of citizens is growing. In the review offered to the attention of readers, we will demonstrate on concrete facts what we have achieved and what awaits us in the near future.

The areas of winter barley and wheat laid in the autumn of last year reached 1 million 39 thousand 500 hectares. At the beginning of October, harvested from over 1 million 34 thousand hectares of these areas. Thus, 3 million 236 thousand tons of barley and wheat were produced, which is 6.1 percent more than last year. The average yield per hectare was 32.3 centers. In addition, almost 150 thousand tons were harvested from an area of 23.5 thousand. With this in mind, the total production of grain crops amounted to 3 million 385 thousand 900 tons. We have already published reports on summer suffering, a number of farmers have achieved record harvests, and they exceeded 40, 50, 60 and even 70 centners per hectare. All this indicates the interest of farmers in obtaining high profits in grain production. If this continues from year to year, then in a few years the volume of production of food grain can grow up to 2.5 million tons. Along with this, farmers are increasing the production of feed grain and crops for the development of livestock and poultry farming. Reforms carried out in the industry have fundamentally changed the attitude of farmers towards the production of bread. In order to achieve high yields, they improve fertility, acquire certified seeds of high quality, pay attention to planning, strictly adhere to the rules of agrotechnical measures, apply advanced irrigation methods, use mineral fertilizers, medicines against weeds and agricultural pests. In most rural areas, laboratories operate, and grain cleaning and certification enterprises are built and commissioned. All this allows us to say that the grain yield in most farms can increase to 50 centners per hectare.

Over the years of agrarian reforms, vegetable growing has fundamentally changed. The industry has become a leading agricultural industry, where all year-round quality vegetables of the widest assortment are grown, including early and early vegetables. Vegetable growers fully meet

the needs of the population in vitamin products, export it to the markets of near and far abroad. Azerbaijani tomatoes are delivered to Russia, Kazakhstan, countries of Europe and the Arab region. Over the indicated period, 1 million 443 thousand 300 tons of vegetable crops were collected and harvested from vegetable gardens and greenhouse complexes of the country, which is 11 percent more than last year. Harvesting vegetables continues. According to the Goskomstat of the republic, the production of domestic potatoes has increased significantly and reached 939 thousand 700 tons. This is a profitable and always sought-after product, not without reason it is called second bread. The Research Institute of Vegetable Growing has strengthened its breeding work, agricultural scientists offer farmers the most promising varieties of potatoes. Today, in many rural areas of the country, delicious potatoes are grown. High yields of this crop are harvested not only in Jalilabad, Tovuz, Shamkir, but also in the Gazakh, Kurdamir, Agsu regions of the country.

For example, earlier experts believed that it was impossible to grow potatoes in the Agjabadi district, but an agronomist from Turkey proved the opposite. Today, potatoes are grown in the region with an average yield of 5-6 tons per hectare. In the future, sown areas for this crop will expand markedly.

Noting the successes of farmers in crop production, it should be noted that for 9 months of this year, the villagers grew 445 thousand tons of melons. They continue to go on sale today. Our domestic gardeners have also achieved success. The production of berries and fruits amounted to 658.8 thousand tons.

Azerbaijani hazelnuts rank third in the world in terms of production. Every year new gardens are laid, they appeared in the mountainous regions of Lerik and Yardimly, the production of our nuts, which are in high demand in international markets, has increased.

From year to year, vineyards are expanding. Volumes of production of table berries and technical varieties have grown. Azerbaijan wine is famous abroad. For 9 months of this year, grape production increased, amounting to 165 thousand 400 tons.

67.6 thousand tons of green tea leaf, 67.6 thousand tons of sugar beets, 65 thousand tons of sunflower, 4.3 thousand tons of sweet tobacco, over 200 thousand tons of raw cotton were harvested in the republic. His cleaning continues.

As you know, domestic animal husbandry is developing by intensive methods, in order to obtain better products in European countries, pedigree cattle and small cattle were bought, which are kept on stalls on farms. They are provided with special care under the control of the veterinary public service. In January-August 2019, livestock production amounted to 2 billion 557 million manat, crop production - 2 billion 649.7 million manat, growth in livestock production amounted to 3.1 percent, crop production - 9.2 percent.

During this period, 332.6 thousand tons of meat were produced in the republic (an increase of 3%), 1 million 386 thousand tons of milk (an increase of 1.5%), 1 billion 242.2 million eggs (an increase of 6.9%), 15.4 thousand tons of wool (an increase of 1.5%). In 2019, villagers produced 643.7 tons of silkworm cocoons, providing growth of 25.3 percent.

Poultry farming is developing, the products of which fully satisfy the needs of the urban and rural population, as well as being shipped to neighboring countries.

The positive point is that in recent years the number of agricultural parks has increased in rural areas, each of them has a livestock complex, which contains pedigree cattle. Large financial loans, state subsidies are allocated for this industry, and all this qualitatively changes the industry, bringing it closer to international standards. The task of farmers is to provide the population with high quality products, food security of the country.

Azerbaijan's foreign trade turnover is growing every year. For nine months of 2019, agricultural products worth \$ 501.5 million were exported from the republic to international sales markets. This volume increased by 16.3 percent compared to last year.

Trading houses have been opened in neighboring countries where products under the national brand Made in Azerbaijan are sold. Along with traditional markets such as Russia and Turkey, foreign trade volumes with Sweden and Asian countries are growing. China is showing interest in Azerbaijani wines, and as a result, the supply of alcoholic and fruit drinks has more than doubled. The export of Azerbaijani tea also increased significantly.

The results of 9 months of 2019 once again show how the potential of the republic's agriculture has grown, the culture of agriculture has increased, and the industry's transition to the digital economy, the skillful use of e-agriculture opportunities in the future will ensure the dynamic development of all agricultural structures.

4. Conclusion

In every country a supply chain process is based on the connection of its actors, therefore culture and traditions have direct impact on these relationships. In described Italian example high level of farmers and producers pulverization has an influence on supply chain and, as a consequence, on food prices. As agri-food supply chain is multifaceted process, its enhancing requires a holistic approach. Summing up, it should be noted that Azerbaijan over the years of independence has made significant progress in the development of agriculture. The main role in this is played by focused state policy. It can be stated that by choosing the path of import substitution of grain and the development of its own grain base, Azerbaijan has strengthened its own food security. However, while maintaining a number of negative factors, one hundred percent supply with own products has been achieved so far only in the production of salt and sugar. The leadership of the republic has the primary task of finding the necessary balance in agriculture and overcoming structural problems, while increasing its productivity. Given the experience gained, the government's awareness of the importance of the agricultural sector in the life of the state and the availability of financial resources, Azerbaijan should be able to solve this difficult task.

The successes and high results achieved in all areas of the country's economy, including in the agricultural sector, are an indicator of the dynamic development in Azerbaijan. This prosperity and prosperity, the improvement of the material condition of the population to a large extent are the fruit of a focused state policy. For the development of the innovative policy of the state in the agricultural sector, the formulation and implementation of a unified system of

strategic planning and forecasting is necessary. It should include the following components: long-term socio-economic, environmental and technological forecasts; long-term strategic plans; it is necessary to draw up short-term plans and projects for the development of specific areas of innovative agriculture, the solution of certain problems facing the social sphere of the village.

References

- [1] Amirov, I.B.O. & Gadzhieva, Z.E.K. Social and economic efficiency of agricultural management in the regions of Azerbaijan. *Society, Economics, Management*, (2018). 3, pp. 5-10.
- [2] Azerbaijan economy. Retrieved from <https://geographyofrussia.com/xozyajstvo-azerbajdzhana/>
- [3] Center of Economic Reforms and Communication of the Azerbaijan Republic. (2018). Azerbaijan economy review reform. Retrieved from http://www.iqtisadiislahat.org/store//media/documents/islahatlar_icmali/2018/dekabr/Islahat_avqust_RUS.pdf
- [4] Chesbrough, H.W. (2004). *Open innovation: the new imperative for creating and profiting from technology*. Harvard Business School Press. Cambridge. MA.
- [5] Decree of the President of the Republic of Azerbaijan on approval of the Development Concept “Azerbaijan 2020: a look into the future” December 29, 2012.
- [6] Dzhavadov, N.A. (2009). *Structural changes in the agricultural sector*. Baku: Maarif.
- [7] Gambarova, R.M.K. Supply chain management of the agricultural sector and agricultural development in Azerbaijan. *Bulletin of science and education*, (2018). 1(4), pp. 49-53.
- [8] Gasanov, A. Azerbaijani experience of reforms: everything is just beginning. Retrieved from https://lb.ua/blog/akper_gasanov/440564_azerbaydzhanskiy_opit_reform.html (2019).
- [9] Guseinov, M.M. Agriculture of Azerbaijan and directions of its innovative development. *Naukovyy visnyk Poltavskoho universytetu ekonomiky i torhivli*, (2016). 2(74), 87-93
- [10] Imanov, S. (2018). Azerbaijan takes agriculture to a new level. Retrieved from <https://news.day.az/politics/1062651.html>
- [11] IFAD in Azerbaijan (2015). Retrieved from <http://operations.ifad.org/web/ifad/operations/country/home/tags/azerbaijan>
- [12] Karaev, I.Sh. (2011). *Economics and Agricultural Management*. Baku: Izdatelstvo Ekonom.univer-ta.
- [13] Kasumly, V. Economic supply chain management. Baku, (2014). p. 312.
- [14] Ketels, C. & Solvell, O. *Innovation clusters in the 10 new member states of the European Union*, Luxembourg: Office for Official Publications of the European Communities(2006)..
- [15] Kharitonov, D.V. Azerbaijan's agricultural policy: main trends, problems and new perspectives. *Molodoi uchenyi*, (2015). 8, pp. 407-413. Retrieved from <https://moluch.ru/archive/88/17447/>
- [16] Sholpanbaeva, K. G., Apysheva, A. A., Shaihanova, N. K. Tourism market development, accounting features in travel agencies of Kazakhstan and the East Kazakhstan Region of the Republic of Kazakhstan. *Eurasian Journal of Biosciences*, (2020). no 14 (1), pp. 877-887.
- [17] Sholpanbaeva, K. G., Apysheva, A. A., Shaihanova, N. K. Importance of tax regulation of SME innovations in the economic management. *Opcion*, no (2019). 19 (35), pp. 272-306.