

**AZERBAIJAN REPUBLIC**

*On the right of the manuscript*

**THE ROLE OF THE MATERIAL AND TECHNICAL  
RESOURCES MARKET IN THE ECONOMIC  
DEVELOPMENT OF THE AGRARIAN SECTOR**

Specialty:           **5312.01 – Field economy**  
Field of science:   **Economic sciences**  
Applicant:           **Minura Hacı Karimova**

**Dissertation submitted for obtaining a scientific degree  
Doctor of Philosophy**

**ABSTRACT**

**Ganja- 2022**

The work was performed at Azerbaijan Technological University.

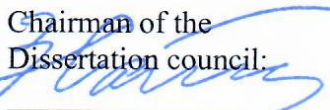
**Scientific consultant:** Doctor of economic sciences, professor  
**Veysal Seyfali Eyyubov**


**Official opponents:** Doctor of economic sciences, Ass.prof  
**Anar Fazil Abbasov**


Candidate on economics, Ass. prof  
**Raiba Mammadbagir Cafarova**

PhD in economics, Ass. prof  
**Zakir Qasham Abbasov**

Joint dissertation council of the Supreme Attestation Commission under the President of the Republic of Azerbaijan ED 2.42 of the Azerbaijan State Agrarian University and the Azerbaijan Cooperation University operating under the Azerbaijan State Agrarian University.

**Chairman of the Dissertation council:** Full member of ANAS, d.e.s., professor  
  
**Ziyad Aliabbas Samadzade**

**Scientific secretary of the Dissertation council:** Ph.D. in Economics, Associate Professor  
  
**Parvin Elman Mukhtarova**

**Chairman of the scientific seminar:** Honored agricultural worker,  
Doctor of economic sciences, professor  
  
**Islam Haji Ibrahimov**

## GENERAL OVERVIEW OF THE WORK

**Relevance and development of the topic:** The transformation of the country's economy in accordance with the requirements of market relations is not accidental. Thus, at all times, the main focus in meeting the needs of the population for food products falls on agriculture.

In the context of deepening reforms and the formation of entrepreneurship in agriculture, ensuring the needs of the population for food and industrial raw materials at the expense of domestic production, paired with other factors, depends on the provision of producers with material and technical resources.

Poor technical base of the agrarian sector, especially the newly established private farms in rural areas, in recent years the lack of necessary technical means, incomplete fulfillment of needs for material resources (seeds, fertilizers, toxic chemicals, spare parts, repair materials, etc.), deterioration of the existing equipment created serious difficulties in conducting economic activities in optimal agro-technical terms, which has had a negative impact on the implementation of effective large-scale reproduction in agriculture along with objective and subjective reasons.

Obsolescence of technical bases of private farms, limited financial resources, lack of formation of the market of material and technical resources created problems in meeting their needs for agricultural machinery, spare parts, mineral fertilizers, toxic chemicals, fuel, etc., which lead to proper difficulties for agricultural producers. From this point of view, one of the main tasks ahead is to completely re-equip agricultural production with the necessary material and technical means, and to make effective use of modern equipment.

It is obvious that, the disruption of the coordination of agricultural machinery has a negative impact on the pace of development of agricultural production. Non-compliance of the types and brands of machines, the composition of the tractor fleet or the level of their provision with specific production conditions does not allow to carry out technological operations in agriculture

in optimal time, agro-technical rules are not followed and as a result crop productivity decreases, labor and material costs increase. The financial situation of agricultural enterprises, including private ones, in our country does not fully enable them to obtain the necessary material and technical resources. Given that there are currently no agricultural engineering enterprises in the country, it is not difficult to imagine the complexity of the situation in this area.

As a result of the analysis of the current state of the material and technical base of agriculture and measures taken to strengthen it and scientific research, it was determined that the way out of the current situation in this area are the development of the market of material and technical resources, the establishment of service enterprises and the efficient organization of its activities. It is no coincidence that, a special attention was paid to the issues of development of the park of agricultural machinery, improvement of supply of innovative, small-scale machinery and equipment, as well as development of the market of agro-services for the purpose of *“improving the supply of agricultural producers with machinery and equipment and developing the market of agricultural services”* in the "Strategic Roadmap for the production and processing of agricultural products in the Republic of Azerbaijan". From this point of view, there is a need for large-scale measures to develop the market of material and technical resources, to provide the agricultural sector with material and technical resources in accordance with the requirements of market relations and to increase the efficiency of production and technical services.

Thus, the research work aimed at providing the agricultural sector with material and technical resources and increasing the efficiency of their use is distinguished by its relevance.

Problems related to the development of the market of material and technical resources in the agricultural sector have been in the focus of attention of agrarian economists in modern conditions. Economists Z.A. Samadzade, A.I.Mammadov, A.Ch. Verdiyev, I.H. Ibrahimov, I.Sh. Garayev, Sh.A. Akhundov, A.J. Gasimov, R.B. Aliyev, S.V. Salahov, I.V. Ahmadov,

A.F.Abbasov, I.M. Heyirkhabarov, J.Ch. Mammadov and others conducted researches. Foreign economists V.V. Miloserdov, A.A. Nikonov, N.T. Ushachov, B.R. Boev, A.P. Borisenko, V.F. Mashlikov, E.I. Krylatykh and others studied different aspects of the problem.

However, despite all this, the development of the market of material and technical resources in the agricultural sector, its effective operation, its role in the sustainable development of the agricultural sector, etc. have not been comprehensively studied.

**The object and subject of the research.**The object of research is the agrarian sector and the market of material and technical resources. The development of the market of material and technical resources, its effective functioning and improving the impact on the development of the agricultural sector are the subject of research.

**The goal and objectives of the study.**The goal of the research is via studying the scientific and theoretical aspects of the development of the market of material and technical resources in the agricultural sector, to study its current state and development trends, to develop scientifically sound practical proposals on the formation and effective operation of the market of material and technical resources. The following tasks have been identified to achieve the objectives of the study:

- determining the nature and features of the development of the material and technical resources market in the agricultural sector;

- defining the role of the establishment of the material and technical resources market in the development of market relations;

- determining the role of production intensification in the development of the material and technical resources market;

- analysis of the current state of the material and technical resources market and material and technical base in the agricultural sector;

- identification of priority areas for the development of the material and technical resources market in the agricultural sector;

- defining the role of the state in the regulation of the market of material and technical resources;

- defining the role of agro-leasing services in the formation of the market of material and technical resources.

**Research methods:** In the dissertation work economic-statistical methods, as well as methods of observation, analysis, comparison, dynamics, etc. were used.

**The main provisions of dissertation to be defended:** The main provisions submitted for defense are characterized by the followings:

- generalization of theoretical and methodological approaches to the nature and features of the development of the material and technical resources market in the agricultural sector;

- factors determining the need to modernize the agricultural sector;

- determining the role of the establishment of the material and technical resources market in the development of the agricultural sector and its impact on the economic efficiency of production;

- determining the relationship between the intensification of production and the development of the market of material and technical resources;

- identification of development trends in the field of material and technical resources on the basis of research of the activity of the market and analysis of the current state of the material and technical base of the agricultural sector;

- identification of priority areas related to the effective functioning of the market of material and technical resources in the agricultural sector;

- determination of directions of regulation of the material and technical resources market;

- identification of opportunities for the use of agro-leasing services in the efficient operation of the market of material and technical resources.

**The scientific novelty of the research.** The scientific novelty of the research is as follows:

- the role of the market of material and technical resources in the building of new production relations is defined;

- the objective necessity of development of the material and technical resources market in the agrarian sector is substantiated;
- specific features of the market of material and technical resources and factors influencing it are defined;
- the economic mechanism of formation of the material and technical resources market in the agrarian sector is defined;
- priorities for the development of the market of material and technical resources have been identified, taking into account the specific features of the agricultural sector;
- the role of state regulation in the development of the material and technical resources market is specified;
- the main directions of the development of the material and technical resources market have been identified.

**The theoretical and practical significance of the research:** The theoretical significance of the research is characterized by scientifically substantiated provisions on the development of the material and technical resources market, its effective functioning and improving the impact on the development of the agricultural sector. The practical results presented in the dissertation can allow to determine the strategy of development of the agrarian sector and the market of material and technical resources, to economically justify the prepared measures.

**The approbation and application of research:** The content of the dissertation is reflected in 32 published scientific articles and theses. The results of the research on the topic of the dissertation were discussed and approved at the national and international scientific-practical and practical conferences. The results of the research were accepted for the use by the Samukh State Agrarian Development Center (reference No. 179 dated November 11, 2021).

**The name of the organization in which the dissertation was implemented:** The dissertation was completed at the Azerbaijan University of Technology.

**The volume and structure of the research paper:** The dissertation consists of an introduction, 3 chapters, a conclusion, a list of 112 references and 242599 characters. The introduction is 6 pages, 9199 characters, Chapter I is 55 pages, 95132 characters,

Chapter II is 24 pages, 41275 characters, Chapter III is 51 pages, 74309 characters, the conclusion is 9 pages, 14790 characters, the list of references is 9 pages, 11359 characters.

## **THE MAIN CONTENT OF THE RESEARCH**

In the introduction part of the dissertation the relevance of the topic is substantiated, the goals and objectives, methods of the research are characterized, the main provisions of the defense are explained, the scientific novelty, theoretical and practical significance and approbation of the research work are reflected.

**The first chapter of the dissertation is entitled "Scientific and theoretical issues of the formation of the market of material and technical resources".** This chapter embraces the nature and features of the formation of the material and technical resources market in the agricultural sector, the role of the establishment of the market of material and technical resources in the development of market relations and the impact of intensification of production on the development of the market of material and technical resources.

The development of the market economy system reflects the formation of commodity-money relations in all sectors of the economy on the basis of supply and demand, the formation of large-scale reproduction and the dominance of liberal values. The market economy system ensures the sustainable development of the economy if the necessary market modification, including market infrastructure, is formed from both sectoral and territorial complexes. Similarly, the diversity of the market performs the functions of a market infrastructure in terms of the development of a specific sector of the economy. In this regard, the formation of the market of material and technical resources has an important role in the sustainable development of the agrarian sector, which is the most strategically important sector of the economy. The market of material and technical resources is important for the formation and development of market relations in the agricultural sector, as well as other types of market diversity - financial market, investment market and so on.



The market of material and technical resources reflects the economic relations based on free competition between the institutions that produce or offer material and technical resources and their producers. The market of material and technical resources is not only an institution that carries out the process of purchase and sale. The market of material and technical resources is aimed at the formation of large-scale reproduction in the economy as a whole, serving to meet the demand for technical means of this and other economic entities, regardless of ownership.

Demand and supply are the most important components of the market of material and technical resources. Demand in the market of material and technical resources is the volume of agricultural machinery in terms of natural and value that will be used by agricultural producers in a particular period and is characterized mainly as a manifestation of demand. The basis of the market of material and technical resources in agriculture is the supply of resources. Resource supply - reflects the volume (amount) of funds released to the material and technical resource market during the specific period in terms of physical and value. The supply of resources in the market of material and technical resources ultimately creates favorable conditions for the efficient meeting of the needs of agricultural producers for material and technical resources. The higher the range and the wider the volume of resource supply in the market, the more it leads to the stabilization of the balance in the market and the level of prices.

The market of material and technical resources plays an important role in the development of market relations in the agricultural sector. The role of the market of material and technical resources in the development of market relations in the agricultural sector is directly related to the fact that it serves a wide range of reproduction. Physical obsolescence of resources leads to a decrease in productivity in the agricultural sector. This ultimately affects the economic efficiency of production. All these are the main issues that require intensive development of production.

Intensive development of the agrarian sector reflects the qualitative improvement of agricultural production, the reconstruction of technological processes, the application of new achievements of science and technology in agriculture, on the basis of which it is possible to ensure sustainable development. Intensification of production is ensured as a result of large-scale investments. The process of intensification reflects the concentration of large-scale investments in a specific area. In the process of large-scale reproduction, along with the increase in investment per unit, attention is paid to improving its structure so that the products produced in the field ultimately meet the needs of society and are quickly realized as marketable products.

Intensification is a complex and multifaceted process and depends on the level of development of the national economy, the investment orientation of the economic policy, as well as the level of development of a particular sector. The practice of developed countries shows that increasing the competitiveness of one or another sector, especially agricultural production, primarily involves improving the quality of products and reducing unit costs, depending on the concentration of investment. The process of intensification in the agricultural sector is aimed at ensuring sustainable development.

In general, the process of intensification of agricultural production creates favorable conditions for increasing production and decreasing the unit cost of production through the concentration and qualitative improvement of means of production, the application of advanced technology and advanced forms of labor organization, serving the formation of large-scale reproduction in a particular field. Thus, intensification, as a form of large-scale reproduction, serves to expand the application of the latest achievements of scientific and technological progress in agricultural production and the effective use of the constituent elements of production potential.

Intensification of production in the agricultural sector plays an important role in improving the system of supply of agricultural material and technical resources. The effective

development of the market of material and technical resources in the agrarian sector directly depends on the mutual integration of areas related to agriculture at the present stage.

**Chapter II of the dissertation is entitled "Analysis of the current state of the market of material and technical resources in the agricultural sector"**. This chapter analyzes the current state of the market of material and technical resources in the agricultural sector, the factors affecting it, as well as the provision of the agricultural sector with material resources and the level of its use.

Regardless of the form of ownership and farming, logistics and maintenance is a structural unit of the agricultural sector and plays an important role in the intensification of agriculture and increasing the economic efficiency of production. Without creating the necessary material and technical base in agriculture, it is impossible to achieve labor productivity, reduce labor costs per unit of output, increase the economic efficiency of production.

When determining the direction of development of the material and technical base in agriculture, the nature of the elements that make it up must be taken into account. It is obvious that, there is a difference in the quality of lands in terms of fertility in the country, and different costs are required for material and technical resources required for production. Thus, the level of land use affects the level of use of other means of production.

The organization and intensification of production in agriculture cannot be imagined without its material and technical base. Intensification of agriculture is a form of large-scale reproduction in a specific field of production, which allows to increase production through the concentration and qualitative improvement of the means of production, the application of advanced technology and advanced forms of labor organization. Intensification as a form of large-scale reproduction is based on the achievements of scientific and technological progress, as well as the improvement of all factors of production.

From the point of view of the mentioned above, if we look at the park of the main types of agricultural machinery in the country, it becomes clear that the technical supply of the agricultural sector in

2016-2020 increased from 21,236 units to 51,470 units, an increase of 2.4 times. Number of tractors, 2.05 times in 2020 compared to 2016, number of ploughs 4.5 times, number of cultivators 16.2 times, number of seeders 1.09 times, number of mowers 10.25 times, number of mineral fertilizer spreaders 6.2 times, the number of sprayers and dusters increased 9.9 times, the total number of combines increased 2.37 times (Table 1).

**Table 1. Types of main agricultural machinery in the Republic of Azerbaijan (unit)**

Agricultural machinery	Years				
	2016	2017	2018	2019	2020
Tractors	17043	21787	34829	34936	34954
Ploughs	1002	1624	4350	4413	4519
Cultivators	79	192	589	1094	1277
Seeders	294	603	1697	1797	3233
Mowers	128	440	660	755	1312
Squeezers	683	824	1656	1580	1512
Combines:					
- wheat harvester	1285	1621	3671	3817	3642
- corn harvester	2	2	10	8	7
- forage harvester	441	70	277	172	111
- potato harvester	5	12	39	43	49
- cotton harvester	89	311	487	482	485
- beetroot harvester	1	8	31	35	34
Solid mineral fertilizer spreaders	54	82	211	281	335
Sprayers and dusters	130	194	849	961	1299

The table was compiled by the author on the basis of data from the State Statistics Committee [11, p.69].

Number of tractors, 2.05 times in 2020 compared to 2016, number of cotans 4.5 times, number of cultivators 16.2 times, number of seeders 1.09 times, number of mowers 10.25 times, number of mineral fertilizer spreaders 6.2 times, the number of sprayers and sprayers increased 9.9 times, the total number of combines increased 2.37 times (Table1).

Studies shows that according to the development programs of the agricultural sector, the indicators of agricultural technical support have also increased due to the provision of soft loans. Thus, compared to 2016, the number of tractors per 1,000 hectares in

2020 increased 2.02 times and, accordingly, the area under one tractor decreased by 51% to 47 hectares. In addition, there was an increase in the number of cultivators, ploughs, seeders and mowers per 100 tractors. A similar situation is observed in the number of combines per thousand hectares. Thus, this indicator increased 2.71 times for grain harvesters, 2 times for corn harvesters, 9 times for potato harvesters, 68 times for beet harvesters and 2.82 times for cotton harvesters. (Table 2).

**Table 2. Provision of agriculture with machinery in the Republic of Azerbaijan**

Indicators	Years				
	2016	2017	2018	2019	2020
Tractor per 1000 ha planting area, unit	10,5	13,1	20,0	20,4	21,3
Planting per tractor, ha	96	76	50	49	47
Combine per thousand hectares of relevant crops, units					
Grain harvesters	1,4	1,8	3,5	3,7	3,8
Corn harvesters	0,1	0,1	0,3	0,2	0,2
Potato harvesters	0,1	0,2	0,7	0,8	0,9
Beet harvesters	0,1	0,6	3,6	4,8	6,8
Cotton harvesters	1,7	2,3	3,7	4,8	4,8
Appropriate plantings per combine, ha					
Grain harvesters	736	567	286	272	262
Corn harvesters	17928	17845	3175	4105	4812
Potato harvesters	12558	4898	1521	1324	1163
Beet harvesters	7061	1740	276	210	146
Cotton harvesters	577	439	272	208	207
per 100 tractors, unit					
Ploughs	6	8	12	13	13
Cultivators	0,5	1	2	3	4
Seeders	2	3	5	5	9
Mowers	1	2	2	2	4

The table was compiled by the author on the basis of data from the State Statistics Committee [11, p.70].

However, the modernization of the agricultural sector and the automation of processes are among the priorities of the agrarian policy of our country.

In recent years, attention has been paid to the sale of agricultural machinery on preferential terms in agriculture. However, the analysis shows that the preferential sales of most

agricultural machinery have a downward trend for 2016-2020. Thus, compared to 2016, sales of tractors in 2020 decreased by 77.9% to 266 units.

**Table 3. Sale of agricultural machinery and equipment by the state to agricultural producers on preferential terms, unit**

Name of machinery and equipment	Years				
	2016	2017	2018	2019	2020
Tractors	1204	1645	1346	662	266
Ploughs	670	838	692	197	134
Cultivators	140	751	259	188	54
Sowing aggregates	565	961	652	180	147
Mowers	8	95	89	64	10
Grass pressing machine	24	34	60	21	34
Cotton harvesters	94	179	101	45	12
Wheat combine harvester	126	2	118	225	54
Fertilizer spreader	187	92	65	64	6
Spraying and dusting machines	231	394	212	77	88
Softeners	1	-	21	2	133
Grain cleaners	15	33	30	28	12
Harrow	226	343	219	80	131
Grass rakes	51	29	32	29	9
Bull milling cutters	23	31	25	13	71
Tractor trailers	292	1370	588	180	115
Lawn mowing combine	14	12	27	20	14
Other agricultural machinery and equipment	216	1066	626	260	479
Cost of machinery sold and delivered, million manats	138,7	269,4	197,9	130,6	52,3

The table was compiled by the author on the basis of data from the State Statistics Committee [11, p.71].

During the mentioned period, there was a 80% decrease in the sale of ploughs, 61.4% of the number of cultivators, 73.9% of the number of sowing units, 87.2% of the number of cotton harvesters, 96.8% of the number of fertilizer spreaders, 82.4% of the number of grass rakes, 60.6% in the number of tractor trailers. The meanwhile, the total cost of machinery and equipment sold in 2020 decreased by 62.3% compared to 2016 and calculated for 52.3 million manats. In addition, it should be noted that in 2016-2020, the highest sales of most agricultural machinery and

equipment were observed in 2017. So, starting from 2017, preferential sales have tended to decline. In addition to the general downward trend, it should be highlighted that in 2017, preferential sales of tractors 36.63%, sales of ploughs 25.07%, sales of cultivators 5.36 times, sales of sowing aggregates 70.08%, sales of cotton harvesters 90.4%, sales of spraying and dusting machines 70.6%, sales of other agricultural machinery and equipment increased by 4.9 times. The cost of machines and equipment sold, increased by 94.2% in 2017 and accounted for 269.4 million manats (Table 3).

According to researches, the development of the material and technical resources market is closely linked with the intensification of agriculture, the transition of technological processes to industrial methods, the complex mechanization and automation of operations in various fields. Therefore, there is a need to take the necessary measures in this area.

**Table 4. Import dynamics of various types of mineral fertilizers, thousand tons**

Type of fertilizers	Years					Change in 2020 compared to 2016, in%
	2016	2017	2018	2019	2020	
Total mineral fertilizer, including:	166,9	180,6	286,7	335,5	350,5	2,1 times
Nitrogenous	96,2	120,6	194,9	148,7	212,4	2,2 times
Phosphated	0,1	0,01	0,02	0,50	-	-
Potassium	8,0	8,1	8,1	9,2	7,7	96.3
Other	62,6	51,9	83,7	177,1	130,4	2,1 times

The table was compiled by the author on the basis of data from the State Statistics Committee [11, p.72].

Imports play a significant role in providing the agricultural sector with material and technical resources. Studies show that in 2016-2020, the import of mineral fertilizers has a positive dynamics, increasing from 166.9 thousand tons to 350.5 thousand tons. Thus, the import of nitrogen fertilizers increased by 2.2 times during the reporting period, the import of other types of

fertilizers increased by 2.08 times, the import of potassium fertilizers decreased by 3.75%. (Table 4).

The increase in imports of mineral fertilizers is also due to the increase in sown areas of agricultural crops in our country in 2016-2020. Thus, the sown area in 2016 was 1628.3 thousand hectares, in 2017 - 1665.7 thousand hectares, in 2018 - 1738.0 thousand hectares, in 2019 - 1717.1 thousand hectares, in 2020 – 1630,9 thousand hectares. According to the analysis of the dynamics of the application of mineral fertilizers to agricultural crops in 2016-2020, it can be noted that the use of fertilizers in agricultural crops has an increasing trend. In addition, the specific weight of the fertilized area in the total sown area also has an increasing dynamics.

**Table 5. Provision of mineral fertilizers to crops in agriculture, at the expense of 100% nutrients**

Indicators	Years					Dynamics of change in 2020 compared to 2016, %
	2016	2017	2018	2019	2020	
Total thousand tons	80,7	118,7	141,3	159,3	151,6	189
Per sowing ha, kg.	44	63	72	82	81	184
from it:						
Wheat	51	62	86	89	88	172
Cotton	101	144	84	127	131	129
Tobacco	120	114	141	131	137	114
Potato	34	41	81	81	87	2.6 times
Vegetables and melons	53	62	91	96	98	184
Forage crops	14	18	35	26	29	2.07 times
Orchards	43	52	63	64	73	169
Vineyards	43	60	40	51	54	125
The specific weight of the fertilized area in the total sowing, %	70	72	84	80	79	112

The table was compiled by the author on the basis of data from the State Statistics Committee [11, p.72].

Thus, compared to the base year, this dynamic is characterized by an increase of 2.86% in 2017, 16.7% in 2018, 4.76% in 2019 and 1.25% in 2020. In general, compared to 2016,



the share of fertilized areas in the total sowing in 2020 increased by 12% (Table 5).

The increase in the use of fertilizers is also characterized by an increase in demand for products in agricultural markets. The increase in fertilizer yields means the normal financial situation of agricultural entities, including access to credit, as well as the effective implementation of the state subsidy mechanism. The growth dynamics of fertilizer yields results in an increase in agricultural productivity, an increase in product quality and, accordingly, an increase in production and export potential. The low level of use of mineral fertilizers leads to underutilization of the genetic potential of agricultural products, as well as low soil fertility.

Thus, the above indicates that the improved nature of the development of the material and technical resources market is reflected in the sustainable development of the agricultural sector as a whole, ensuring the satisfaction of the needs of agricultural entities in material and technical resources.

**Chapter III, entitled "Development trends of the market of material and technical resources in the agricultural sector"** defines the directions of improving the market of material and technical resources in the agricultural sector, the role of the state in regulating the market of material and technical resources and opportunities for agroleasing services.

Agriculture not only meets the needs of the population for food products, but also meets the raw material needs of many processing industries. Fulfillment of these strategically important tasks, first of all, creates reliable employment in the national economy, increasing the income of the population, as well as ensures the food independence of the state. From this point of view, the development of the agrarian sector directly depends on strengthening its material and technical base, increasing the level of mechanization of production, meeting the demand for material and technical resources with agricultural producers. Studies indicate that there are certain problems in this area. One of the existing problems in meeting the needs of the agricultural

sector for material and technical resources is the extremely low volume of land at the disposal of private enterprises. This does not allow agricultural producers to effectively use high-yielding equipment imported from abroad. The meanwhile, the profitability of business entities operating in the agricultural sector depends on the timely and optimal implementation of agro-technical measures in agriculture, timely and lossless harvesting of products, their delivery to consumers. Although the growing demand for material and technical resources of private enterprises regardless of the form of ownership, the failure to meet this demand due to lack of funding has created great difficulties in providing technical services to agricultural producers.

In general, in order to solve such problems, it is necessary to create service markets in the country and to form cooperatives, wholesale fairs, to organize exchanges, to provide local economic entities with consulting services on equipment usage parameters and prices. In addition, taking the specialization of the regions of the country into account the establishment of wholesale and retail stores that organize the sale of spare parts for agricultural machinery can also help to eliminate the problem. The solution of the above-mentioned problems can provide practical assistance in the effective organization of transport services in agriculture of the republics undergoing the process of transformation.

It is obvious that, one of the most important conditions for the effective use of equipment is to provide them with the necessary backup. In this regard, it should be noted that due to technical malfunctions, especially during seasonal agricultural work related to harvesting, sowing and planting, agricultural machinery is often forced to stand idle, which has a negative impact on a wide range of activities of agricultural producers and the process of large-scale reproduction in agriculture as a whole. To prevent this downtime, the required spare parts must be procured in a timely manner to ensure uninterrupted and efficient use of agricultural machinery.

According to the practice of developed countries, one of the main directions in ensuring the sustainable development of the

agricultural sector is to maintain the interaction and integration of the transport system with other services. It should be highlighted that the lack of agricultural machinery, including vehicles creates problems in the organization of maintenance of various types of transport, which exist in retail, both in households with the status of individuals, and in legal entities, negatively affects the economic efficiency of production. A system of mutually beneficial relations that meets the requirements of a market economy should be established in order to ensure the efficient use of transport services. In our opinion, the establishment of such mutual relations and their organizational strategies in each region and village of the country and having the proper cost level of these services for agricultural producers will also contribute to the development of entrepreneurship and strengthening the material and technical base in agriculture.

The study shows that many technical, technological, socio-economic and other measures taken in our country for the development of the agricultural sector should allow to achieve higher results. In this regard, the development of the market production also plays a significant role. The establishment and functioning of the market production requires the development of complex measures and the improvement of the management structure. The system of complex measures for the development of the market production should focus on two main issues: on the one hand, the creation of favorable conditions for free exchange with commodity producers, on the other hand, the provision of national goals. From this point of view, the application of the following methods of realization of production and technical products in the sphere of turnover of means of production confirms expediency:

- placement of production and distribution of products in accordance with state orders;
- partially centralized distribution of missing goods with the help of intermediaries and wholesalers;
- sale of products through wholesale trade, etc..

In the new economic conditions, the organization, management and improvement of production and technical services arise from an objective necessity.

The experience of developed countries shows that the development of a market economy system depends on the operation of market infrastructure, meeting the needs of businesses in the country for material and technical resources through leasing services. The essence of this advanced method of service is that the enterprise engaged in leasing activities buys and leases the material and technical resources of agricultural producers by order. Leasing is the most important form of market infrastructure and is characterized as the most reliable and efficient means of investing in the acquisition of equipment, machinery and mechanisms. Leasing plays an important role in meeting the needs of commodity producers in material and technical resources in developed countries. Therefore, it is important to pay special attention to these issues.

## **CONCLUSION**

The market of material and technical resources includes the purchase and sale of means of production and economic resources. As subjects of the market of material and technical resources, producers, households and farms act as buyers of means of production. Companies and the state also participate to some extent in the market of material and technical resources. The formation of this market is the same as the formation of the consumer market. However, here the demand of firms for resources depends on the demand for final products and services, and in fact arises from this, therefore, the demand of firms for material and technical resources is accepted as a derivative demand.

The market of material and technical resources is important in the development of market relations in the agricultural sector. The role of the market of material and technical resources in the development of market relations in the agricultural sector is

directly related to its widespread reproduction. Physical deterioration of resources leads to a decline in productivity in agriculture. This, in turn, has an impact on the economic efficiency of production.

Research shows that in the structure of expenditures on agricultural products, the cost of material and technical resources has a significant share. The physical depreciation of resources leads to crop losses and, ultimately, to the loss of economic activity.

The market of material and technical resources also performs service functions in terms of the development of the agricultural sector. Therefore, the provision of material and technical resources in the agricultural sector can be characterized as an integral part of a wide range of service infrastructure.

The market of material and technical resources is important for the formation and development of market relations in the agricultural sector, as well as other types of market diversity - financial market, investment market and so on.

1. The market of material and technical resources plays a very important role in the development of a market economy in the agricultural sector. The market of material and technical resources reflects the economic relations based on fierce competition between the institutions that produce or offer material and technical resources and their producers. The market of material and technical resources is not only an institution that carries out the process of purchase and sale. The market of material and technical resources is aimed at the formation of large-scale reproduction in the economy as a whole, serving to meet the demand for technical means of this and other economic entities, regardless of ownership.

2. It can be concluded from the research that the formation of the market of material and technical resources is the main direction of meeting the needs of the agricultural sector in technology in the conditions of new production relations. The formation of the market of material and technical resources in the agricultural sector at the expense of enterprises producing local

agricultural machinery will cover a long period. Therefore, it is possible to organize the work in the sphere of means of production in accordance with the requirements of market relations, as well as to carry out this process in stages at the expense of the necessary state support and regulatory mechanisms. At the same time, the legal basis for the interaction of production and supply entities operating in the conditions of market relations must be formed, and the necessary organizational structure must be achieved for the realization of the market mechanism of the economy. The establishment of such infrastructure in the liberated territories should be considered. Preference should be given to the establishment of special financing funds for the organization of agrarian market infrastructure.

3. As a result of the agrarian reforms, new private enterprises have been established on the basis of privatization of land and property at the disposal of former agricultural enterprises. Naturally, according to the laws of market relations, the funds required for the logistics and maintenance of these private farms must be made at the expense of their own funds. Therefore, the import of technical resources from abroad to the republic through private institutions is becoming an objective necessity. For this purpose, a legal framework is created for entrepreneurs to import technical resources from abroad, and the issue of providing them with loans from the state is considered one of the main priorities of agrarian policy. The practice of providing soft loans at low interest rates or continuous loans is being tested. All this has a significant impact on the formation of the market of material and technical resources in the agricultural sector.

4. Establishment of new agricultural machine-building enterprises by attracting foreign investments to form a market of material and technical resources in the agrarian sector, transformation of some existing industrial machine-building enterprises into agricultural machine-building enterprises and various types of machinery and equipment used in agriculture, the

production of parts and assemblies should be given priority. We think that this issue should be taken into account in the liberated territories.

5. It should be noted that in the independent Republic of Azerbaijan, as a result of measures taken to transform the economic system, other market modifications have begun to take shape in the economy, but the market for material and technical resources is not yet perfect. Thus, the market of efficient and flexible material and technical resources in the agricultural sector has not been formed. One of the objective reasons for the formation of the market of material and technical resources in the agricultural sector of the Republic of Azerbaijan is the non-operation of enterprises producing agricultural machinery, equipment and spare parts. This ultimately precludes the possibility of a technical supply on the market at the expense of local production. Meeting the demand for material and technical resources of local producers at the expense of domestic resource supply leads to the expansion of import channels. This ultimately leads to both a lack of technical resources and the failure to meet the needs of local producers due to the high cost of equipment.

6. Assistance in the formation of the market of material and technical resources in the agricultural sector can be carried out in two directions. The first is the establishment of enterprises producing agricultural machinery and material resources in the country, and the second is the state subsidizing the level of prices for imported machinery and material resources. It should be noted that both directions of assistance in the formation of the market of material and technical resources in the agricultural sector have been implemented by the state.

Enterprises producing the means of production for agriculture of the republic can meet a certain part of the existing demand. This is possible only if the enterprises of the machine-building complex of the republic are equipped with special equipment and advanced technologies to ensure the production of quality products. Demand for the released products depends on its high quality and long service life. Provision of machine-building

enterprises of the republic with advanced technologies should be considered as the main prerequisite for the formation of supply in the market of material and technical resources at the expense of local production. To do this, the agricultural machinery produced must meet international standards and be able to compete in the world market. One of the important issues is to improve the design and research work in machine-building enterprises in order to increase the competitiveness of agricultural machinery to be produced. For this, first of all, it is important to increase the professional skills of engineering and technical personnel.

7. In order to assist agricultural producers in meeting their technical needs, the following measures may be considered necessary:

- creation of the necessary material and technical base in the regions for the production of technical means for agriculture, the technical level and indicators of which meet international standards;;
- development of the necessary material and technical base for the production of material and technical resources for the agrarian sector, first of all, to adapt the capacity of existing plants and enterprises to the needs of the agricultural engineering industry;
- establishment of scientific-research, design-technological enterprises and their experimental bases in the field of agricultural engineering, training of skilled workers along with engineers and technicians;
- establishment of mutually beneficial relations with the relevant industrial enterprises of the republic and other foreign countries;
- development and implementation of comprehensive measures and targeted State Program for the access of manufactured agricultural machinery and other means of production to the world market;
- organization of joint production with machine-building enterprises of foreign countries..



The financing capacity of various agricultural enterprises is not enough not only to invest in the acquisition of material and technical resources, but also to carry out ordinary production. Therefore, in most cases, the funds raised are widely used. In order to meet the needs of the agricultural sector in material and technical resources in the world practice, the state develops targeted programs, as well as prioritizes budget funds.

8. Intensification of production in the agricultural sector plays an important role in improving the system of supply of agricultural material and technical resources. The effective formation of the market of material and technical resources in the agricultural sector depends on the mutual integration of sectors at the present stage. As it is known, the material and technical resources used in the agricultural sector are imported. As mentioned above, as a result of increasing investment in the industrial sector of the national economy, destructive tendencies are emerging in the development of agriculture. Thus, the development of industries is accompanied by an increase in the flow of labor from agriculture to other sectors, on the one hand, and the emergence of structural contradictions in agriculture. The intensification of the agrarian sector depends on the industrialization of agricultural production. Historically, this function has been performed by processing industries. It is a well-known fact that agricultural products pass through the industrial stage in processing enterprises and then deliver them to the trade object and then to consumers. The meanwhile, if the products come to consumers directly from agriculture itself - crop production and animal husbandry, currently most of these products go through the stage of industrial processing and are consumed as finished products.

9. Research shows that accurate economic mechanisms are not used in pricing, and those who sell resources determine prices as they wish. The effect of state regulation and control measures should be increased and the basis for domestic production should be created. When analyzing the activities of farms, it becomes clear that their need for any resource is either partially met or not

met at all. A lot of work is done by hand, both in crop production and in animal husbandry, and some important technological processes are not carried out. This ultimately has a negative impact on production and quality. In order to create a normally functioning market of material and technical resources, it is necessary to ensure a parity ratio of prices for agricultural products and industrial products. This can be done by using guaranteed prices. In almost all economically developed countries, there is a problem that the increase in the price of material and technical resources exceeds the increase in the price of agricultural products. In our research, it is observed that the price increase of some agricultural products exceeds the price increase of industrial products, and if the price increase of the same product exceeds the price increase of one resource unit, it lags behind the other. This discrepancy should be explained by unrealistic prices for material and technical resources and so on.

10. Organic and mineral fertilizers, such as machinery, fuels and lubricants, are also an integral part of the main material and technical resources. Their use not only serves to increase productivity, but also ensures the suitability of the soil for large-scale reproduction. The use of organic and mineral fertilizers has also declined sharply recently.

11. The provision of material and technical resources in our republic can be solved in a number of ways. It would not be right to suggest a template model here. The state can also take over the protection, processing and industrial enterprises can provide resources to agricultural enterprises on a contractual basis to achieve a stable raw material base, and so on. We believe that in the current situation, agricultural enterprises can create agro-service cooperatives using bank loans.

12. One of the most important directions in the formation of the market of material and technical resources in the agricultural sector is the creation of favorable conditions for the availability of machinery and mechanisms for the implementation of agro-technical measures, meeting the demand for agrochemical and plant protection products. Sustainable development of the agrarian

sector, payment for equipment growing for affordable agricultural products is to ensure the optimal implementation of agro-technical measures in the regions of the country with different soil and climatic conditions, mechanization of manual labor and the creation of a complex system of machines and mechanisms.

13. One of the ways out of the situation in agriculture is the state regulation of the market of material and technical resources. In our opinion, during the transition to market relations, it should be considered important to carry out logistical support of farms in a centralized manner. With the formation of the market, the increase of the material and technical base of consumers, the economic improvement of the newly created economic entities, it is necessary to gradually achieve the formation of a free supply and sales market.

**The following scientific articles and theses of the author on the dissertation topic have been published:**

1. Azərbaycan Respublikasında maliyyə-kredit münasibətlərinin tənzimlənməsi və istiqamətləri, məqalə, ADAU-nun Elmi Əsərləri. Gəncə 2017, №1, 3 səh.

2. Müasir dövrdə ərzaq bazarının tənzimlənməsinin problemləri, məqalə, ADAU-nun Elmi Əsərləri. Gəncə 2017, №2, 2 səh.

3. Estimated Parameters of the Natural Resources Potential of Azerbaijan and it's Ecological Characteristics, məqalə, Issue 6 (2) November 2018, Oxford University Press, 2018, 7 səh.

4. Kreditin regionlarda inkişafının əsas rolu və istiqamətləri, məqalə, ADAU-nun Elmi Əsərləri. Gəncə 2018, №4, 3 səh.

5. Национальные экономические интересы и их институциональные особенности, məqalə, г. Новосибирск, 2018, Изд. «Инновации в науке» Научный журнал – №1 (77) , 5 səh.

6. Природно-ресурсный потенциал Азербайджана, его экологическая характеристика и оценочные параметры, məqalə, г. Новосибирск, 2018, Изд. «Инновации в науке» Научный журнал – №8 (84) , 4 səh.

7. Приоритетные направления повышения эффективности

использования материальных ресурсов в аграрном секторе, məqalə, По материалам XXIII Международной научно-практической конференции «Вопросы управления и экономики: современное состояние актуальных проблем». – № 5(21). – М., Изд. «Интернаука», 2019, 4 səh.

**8.** Dövlətin aqrar siyasətinin məqsəd və vəzifələrinin əhəmiyyəti (istiqamətləri), məqalə, ADAU-nun Elmi Əsərləri. Gəncə, 2019, №4, 4 səh.

**9.** Methods of management accounting and economic analysis, məqalə, The European journal of economics and management sciences. 2, 2019, 11 səh.

**10.** Some economic aspects of the improvement of the use of material-technical production resources in agriculture, məqalə, The European journal of economics and management sciences. 3, 2019, 11 səh.

**11.** The strategic development of industrial enterprises, məqalə, The European journal of economics and management sciences. 1, 2020, 4 səh.

**12.** Some matters of modification of financial-technical resources market in agrarian sector, IX International Conference “Science and Society - Methods and Problems of Practical Application”. 15 february 2020, Liverpool. İngiltərə, 4 səh.

**13.** Aqrar sahədə rəqabətə davamlı istehsalın artırılması amilləri. ADAU-nun Elmi Əsərləri, Gəncə, 2020, №1, 4 səh.

**14.** Some issues of improving of material and technical resources market in agriculture, The European journal of economics and management sciences. Vianna 1, 2021, 4 səh.

**15.** Maddi–texniki resurslar bazarında istehsal resursları potensialından istifadənin iqtisadi mexanizminin təkmilləşdirilməsinin bəzi məsələləri. “İnnovasiyalı İqtisadiyyat və Menecment” jurnalı, UTECA, Gəncə, 2021, №1, 4 səh.

The defense will be held on 29 June 2022 at 14:00 at the meeting of the Dissertation council ED 2.42 of Supreme Attestation Commission under the President of the Republic of Azerbaijan operating at Azerbaijan State Agrarian University and Azerbaijan Cooperation University.

Address: Ataturk Avenue 450, AZ 2000, Ganja city, Azerbaijan.

Dissertation is accessible at the library of the Azerbaijan State Agrarian University

Electronic versions of dissertation and its abstract are available on the official website of the Azerbaijan State Agrarian University ([www.adau.edu.az](http://www.adau.edu.az)).

Abstract was sent to the required addresses on 27 May 2022

Signed for print: 19.05.2022

Paper format: 60x84

Volume: 46419

Number of hard copies: 30