

**REPUBLIC OF AZERBAIJAN**

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**ABSTRACT**

of the dissertation for the degree of Doctor of Philosophy

**THE ROLE OF AUDIT IN THE DEVELOPMENT OF  
AGRICULTURE IN MODERN CONDITIONS**

Speciality: 5312. 01 – “Industrial economics”

Field of science: Economic sciences

Applicant: **Javid Ramiz Malikli**

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Scientific supervisor: Doctor of economic sciences, professor  
Honored Scientist **Beyali Khanali Atashov**

Official opponents: doctor of economic sciences, professor  
**Vahid Tapdig Novruzov**

doctor of economic sciences, professor  
**Maharram Jalal Huseynov**

doctor of philosophy in economic sciences,  
associate professor **Gulnare Sedi Hajiyeva**

Joint Dissertation Council of Azerbaijan Cooperation University  
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Cooperation University of the Higher Attestation Commission under  
the President of the Republic of Azerbaijan.

Chairman of the Joint  
Dissertation Board:



Full member of ANAS,  
doctor of economic sciences,  
professor  
**Ziyad Aliabbas Samadzadeh**

Scientific Secretary of the  
Joint Dissertation Board:

doctor of philosophy in economic  
sciences, associate professor  
**Samira Yashar Mammadova**

Chairman of the scientific  
seminar:

A handwritten signature in blue ink, consisting of stylized cursive letters, written over a horizontal line.

doctor of economic sciences,  
professor, Honored agricultural  
worker **Islam Haji Ibrahimov**

## INTRODUCTION

**Research issue rationale and development rate.** In the modern era, in the balanced development of various areas of the economy, effective use of existing resources, their discovery, effective management of financial and investment flows, use of financial resources according to their purpose, etc. issues like this are very important. In particular, serious investigation of such issues in the field of agriculture, drawing relevant conclusions, making adequate decisions, and improving control and management mechanisms are important conditions. In view of these mentioned conditions, the role of audit is increasing.

Effective use of the role of audit in the development of agriculture, revealing the real potential of this field through audit inspections and wide use of audit analyzes in the implementation of investment-innovation projects, preparation of reports, most importantly directed to the development of this field both by the state and by investors and shareholders. From the point of view of increasing the efficiency of the use of funds, organizing the control of investment flows and using allocated subsidies according to their purpose, taking necessary steps towards the formation of working capital and financial reserves, the role of audit mechanisms is increasing year by year.

On the other hand, audit is also important in terms of collecting analytical information for making relevant fundamental analyzes and making relevant management decisions in the efficient use of resources aimed at the development of agriculture in the conditions of global transformations. At the same time, acting on the strategic role of agriculture, the audit can create additional incentives and conditions for the fulfillment of the strategic tasks of the state in the direction of ensuring food security and improving the level of self-sufficiency in important food types due to the development of various directions of agriculture in the country.

It should be noted that the mentioned issues are particularly relevant in Azerbaijan. In recent years, systematic work has been carried out by the state for the development of the agricultural sector and the development of the agrarian sector in general. The state

allocates sufficient budget resources to this area. Almost every year, a lot of funds are spent from the state budget on the development of agriculture and support of agriculture. The scope of measures and support mechanisms aimed at the development of agriculture by the state is expanding even more. Strengthening the material and technical base in the regions, building bridges, repairing roads and building new roads, building tunnels, determining subsidies for agriculture and agrarian production and service areas, taking stimulating measures, etc. requires larger investments. Undoubtedly, the role of financial control and audit mechanisms in the intended and efficient use of these funds is great.

The organizational-legal and management measures implemented in the direction of strengthening the audit institute are also noteworthy. The Chamber of Auditors operates in our country, the country's laws on auditor service and internal audit are in force, and the “Strategic Roadmap for the Development of Financial Services in the Republic of Azerbaijan” (06.XII.2016) is in the intensive implementation phase. Thanks to the attention of Great Leader Heydar Aliyev, an independent audit system was formed in Azerbaijan. On September 16, 1994, the Law of the Republic of Azerbaijan “On Auditor Service” was adopted in order to create the legislative basis of audit activity and service.<sup>1</sup> On December 27, 2014, necessary changes and additions were made to this Law in terms of modern requirements. Thus, a strong legal basis for the development of the audit institute was created. By the decision of the Milli Majlis of the Republic of Azerbaijan on September 19, 1995, the “Regulation on the Chamber of Auditors” was approved, and the Chamber of Auditors began to operate on April 5, 1996. In 1999, the Audit System Reform Concept was developed, and the activity of this strategic service began to be adapted to the world experience. President Ilham Aliyev, the worthy follower of the Great Leader, also attaches great importance to the further improvement of the audit system and increasing its efficiency, and constantly pays attention to the development of this system.

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<sup>1</sup> Law of the Republic of Azerbaijan on auditor service. - Baku, - September 16, 1994, No. 882 (amendments and additions to this Law on December 27, 2014).

Along with these, the development of agriculture in Azerbaijan is also important in terms of strengthening employment in the country, accelerating the socio-economic development of regions, and increasing the income of the population. Therefore, it is precisely as a result of audit mechanisms and inspections, the determination of the objective situation of the effective use of the resources directed to this field, the implementation of systematic measures in this regard, the implementation of audit inspections and the application of the audit mechanism in the direction of making other important state decisions, are undoubtedly able to be effective.

These mentioned issues and problems require fundamental research. First of all, taking into account economic transformations in modern conditions, it is necessary to examine the role of audit in the development of agriculture and the modern international experience in this field, to evaluate the role of audit in the processes of agricultural development in our country, and thus to use the audit mechanism more effectively. All this indicates the relevance of the subject of the dissertation.

We would like to pay special attention to one issue. Thus, by the Decree of the President of the country dated November 16, 2022, the “I State Program on the Great Return to the territories freed from occupation of the Republic of Azerbaijan” was adopted<sup>2</sup>, and currently the implementation of this Program is at an intensive stage. The main goals are ensuring socio-economic development in post-conflict areas, accelerating the Great Return processes, achieving efficient and transparent economy building, and productive use of the region's resources. In these processes, the issues of organizing the audit of the projects to be realized, audit assessment and complex audit analyzes are coming to the fore quite urgently.

Regarding the level of development of the subject, we can note that the problems of agricultural development, resource potential and its efficient use, organization of audit inspections at the required level,

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<sup>2</sup> I State Program on the Great Return to the liberated territories of the Republic of Azerbaijan. It was approved by the Decree of the President of the Republic of Azerbaijan dated November 16, 2022.

increasing the role of audit in accelerating the development of agriculture, are being dealt with by scientists of our country and foreign countries. they have conducted scientific research. Academician Z. A. Samadzade, V. T. Novruzov, I. M. Abbasov, C. V. Namazova, Y. A. Mammadov, E. A. Guliyev, B. Kh. Atashov, Sh. T. Aliyev, V. A. Gasimli, F. Sh. Hajiyeve from Azerbaijani scientists., are the authors of research works related to the improvement of audit mechanisms, the preparation and application of action mechanisms in accordance with the requirements of the modern era. In the works of a group of foreign scientists D. Swanson, R.A. Alborov, T.Y. Bezdolnaya, S.V. Kozmenkova, V.N. Lemesh, A.S. Loseva and others, the development problems and prospects of agriculture, financial and investment issues in these processes, problems of organizing and improving audit activities, directed to agriculture the mechanisms and problems of using resources according to their purpose, their solutions and directions of regulation are included.

Along with these, in the context of global transformations, there is a need to formulate new approaches to agricultural development problems and to improve the application of audit in these processes. It is required to take more effective measures, develop mechanisms and conduct fundamental research in this direction.

**Object and subject of research.** The object of the study is the fields of activity and organizations that perform audit services and functions in the processes of agricultural development in the Republic of Azerbaijan.

The subject of the research is the identification, evaluation and assessment of the role of the audit in solving the development problems of agriculture in the modern era, as well as the directions of regulation of existing mechanisms in this field, improvement issues, methods and means.

**Aims and objectives of the research.** The purpose of the dissertation is to determine the theoretical basis of the application of audit in the development of agriculture in modern conditions, to analyze the current situation of the use of audit in agriculture and to prepare scientifically based proposals and recommendations in the direction of increasing and regulating the role of audit in this field.

The main tasks set in the dissertation work are:

- theoretical examination of the role of audit in solving the development problems of agriculture in the conditions of economic transformations;
- determination and generalization of the methodological features of the application of audit in the development of agriculture, taking into account global transformations;
- researching, evaluating the world experience on the organization of the effective use of audit in the study of agricultural development, and discovering the possibilities of applying it in our country;
- Analyzing the current situation of the development processes of agriculture in Azerbaijan and the use of audit in this regard;
- investigation and assessment of the role of audit in ensuring efficient use of financial and investment resources in agriculture;
- consideration of issues of regulation of the role of audit in the development of agriculture through economic and legal mechanisms;
- investigating the possibilities of improving the application of audit in the development of agriculture in a period of increasing application of digital technologies;
- determination of directions for increasing the role of audit in the development of agriculture, taking into account the new realities emerging in post-conflict areas.

**Research methods.** In the course of the research, preference was given to using a systematic approach, as well as analytical methods, analysis and synthesis methods, analysis of dynamic series, analytical-calculation method, and other methods and means of economic analysis. While considering the theoretical and methodological issues, reference was mainly made to the works of Azerbaijani and foreign scientists on the application of audit in the development of agriculture in modern conditions. At the same time, in the course of the research, laws and normative-legal acts on the regulation of the use of audit in the development of agriculture in Azerbaijan, as well as methodological materials of specialized research institutes and centers were used.

**Basic theses for defense.**

- Taking into account the current development trends of agriculture in Azerbaijan, it is necessary to analyze and evaluate the scientific-methodological bases of the application of audit, to prepare an adequate set of measures;
- there is a need to increase the role and importance of audit in evaluating the financial results of agriculture as an important branch of the economy in our country and taking effective measures accordingly, preparing and implementing programs;
- Taking into account the post-conflict areas in Azerbaijan, it is noteworthy that there is a need for a justified audit assessment in the investigation of the development potential of agriculture, the assessment of resource opportunities and the identification of more efficient areas of activity;
- Regulation of the existing economic and legal bases may be useful for increasing the role of audit in achieving the goals set for ensuring the development of agriculture in Azerbaijan;
- in an era of rapid development of digital technologies and taking into account new realities, improving the use of audit in the intensification of agricultural development should be considered as an inevitable process, etc.

**Scientific novelty of the research** consists of the following:

- goals and tasks, principles, functions and requirements of the audit in the development of agriculture in terms of methodological features and approaches in modern times are prepared in the form of a block diagram;
- the ways of improving the audit in the agro-production and service areas were investigated, the algorithm-scheme of the stages of planning and organization of the audit of the main funds, equipment and inventories was developed;
- by approaching the current realities, a schematic structure of the processes of forming a database and conducting its audit for making decisions in accordance with international standards in the field of agriculture is given;



- important state policy measures for the stimulation of agricultural production are grouped and the constituent elements of the audit program proposed for their implementation are given, the directions for the regulation of the economic and legal bases of the application of audit in the development of agriculture are substantiated;
- the main stages and directions of the digitization of agriculture were schematically developed, the areas of application of the audit mechanism consisting of digital technologies were studied;
- In the context of post-pandemic and post-conflict areas in Azerbaijan, the importance of increasing the role of audit in the development of agriculture was substantiated and directions of action were developed in this regard.

### **Theoretical and practical significance of the research.**

The scientific results obtained in the dissertation, being a sufficient source for future researches, can be effective in increasing the role of audit in the processes of agricultural development and in the implementation of targeted measures.

At the same time, the proposed proposals and recommendations can be useful in developing programs and action strategies related to increasing the role of audit in the development of agriculture. In addition, the materials of the dissertation work can be used in the preparation of textbooks, teaching aids and lectures on accounting and auditing subjects in higher education institutions.

**Approbation and implementation.** The topic of the dissertation work was discussed and approved in the scientific seminars that are constantly operating as a topical issue in modern times, in accordance with the general direction of the scientific-research works of the “Economics of Agrarian and Industry” department of the Azerbaijan Cooperation University.

7 articles and 3 theses of the applicant on the topic of the dissertation, including 1 article and 2 theses, were published abroad in prestigious local and foreign journals and conference materials recommended by the Higher Attestation Commission.

The main provisions of the study are “The importance of audit in increasing the efficiency of agriculture in the conditions of global risks” (Sumgait, 2021), “Problems of increasing the role of audit in agriculture in the context of digital technologies and financial and credit support” (Moscow, 2023), “Paths of improving the role of audit in Theses entitled “Development of agriculture in Azerbaijan in post-pandemic conditions” (Moscow, 2023) were reflected in the materials of the international conference.

In addition to these, on the topic of the research, the candidate's “The role of audit in the development of agriculture in the context of new challenges” (Baku, 2021), “The main directions of improving the audit in the agriculture of Azerbaijan in the modern era” (Baku, 2021), “Theoretical and practical use of audit in modeling the development of agriculture” and methodological aspects” (Baku, 2022), “Issues and mechanism of assessment of the role of audit in the development of agriculture in the context of international practice” (Baku, 2022), “The strategic importance of digital technologies in increasing the role of audit in the development of agriculture in the modern era” (Ganja, 2022), The articles “Evaluation of the role of internal audit in agriculture in Azerbaijan” (Baku, 2023) and “Actual issues and perspectives on the improvement of auditing in agriculture in Azerbaijan” (Moscow, 2023) were published in prestigious journals.

**The name of the organization where the dissertation was conducted.** Azerbaijan Cooperation University.

**The volume of the dissertation’s structural sections separately and the general volume.** The total volume of the introduction (15469 tokens), chapter I (77004 tokens), chapter II (71274 tokens), chapter III (68382 tokens), conclusion (6496 tokens) and bibliography (20359 tokens) is 272631 tokens. 10 tables, 16 schemes and 5 diagrams were used in the dissertation. The number of marks of the dissertation is 238625 marks, excluding tables, images and the list of references.

## BASIC CONTENT OF THE DISSERTATION

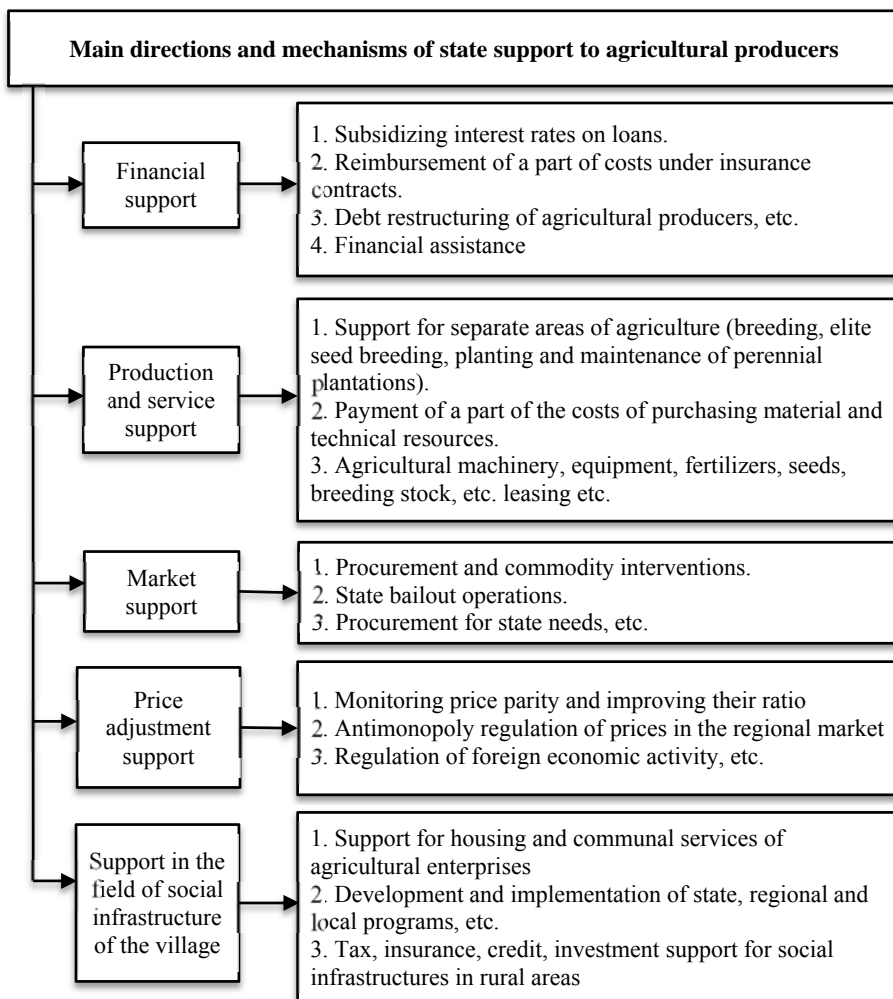
In the “**Introduction**” of the dissertation, are given the relevance and degree of development of the topic, the object and subject of the research, goals and tasks, methods, the main provisions defended, the scientific innovation, theoretical and practical importance, approval and application of the research, etc.

In Chapter I of the thesis entitled “ **Theoretical - methodological aspects of the application of audit in agriculture in the context of global transformations** “, the theoretical basis of the role of audit in the development of agriculture in the conditions of economic transformations; Approaches to the methodological features of audit in the development of agriculture in modern times and the world experience of using the role of audit in the development of agriculture were investigated.

It should be noted that there are serious difficulties in the activity of agricultural economic entities, in forecasting their financial results, in forming the sources of investments and financial resources directed to this field. In most countries of the world, subsidies are purposefully allocated by the state budget or budget funds are directed to solve these problems. At the same time, investment projects are implemented in various fields of agriculture. All these should be considered as necessary measures.

Hundreds of laws, decrees, orders and other normative-legal documents related to the reforms in agriculture in Azerbaijan and their deepening, the formation of ownership and entrepreneurial relations, the formation of new ownership relations in the agrarian field have been adopted, and the legal bases of the state regulation of the agricultural market have been created. Targeted measures to ensure food security by carrying out reforms in agriculture, adopting regulatory and legal documents, providing comprehensive state support to agricultural producers, meeting the population's demand for food products, especially cereals, potatoes, vegetables, fruits and other types of products dynamic development was achieved as a result.

The efficiency of the main mechanisms of state support to agriculture can be determined as follows (scheme 1).



**Scheme 1. The main directions of state support to agricultural producers and mechanisms**

*Source: compiled by the author.*

The formation of financial reserves and the integrity of financial reports are very important issues in order to make economic and financial processes in the field of agriculture more sustainable and productive. We believe that the role of audit in organizing them and implementing them within the framework of relevant legislation is

great. Through the audit, a comprehensive analysis of the activity carried out in the production, financial, service and investment areas and the integrity of its financial support, petitioning the management to take the necessary steps, and forming the basis for important management decisions are ensured. Honored scientist, professor B.Kh. Atashov writes: *“In-depth study of advanced world experience in the direction of organization of the audit system and audit activities based on the maximum unbiased, transparent, independent and strong methodology and acceleration of the development of the audit institute in our country should be taken into account.”*<sup>3</sup> We are also of the opinion that there should be maximum justified arguments in making an important management decision, and decisions should be adequate for the economic interests and financial-economic activity strategy of the firm or enterprise - in our example, the subject of the agricultural field. The audit service and mechanism have a unique share in successful reforms and their effectiveness in all areas of the economy, including agriculture. Professor V.T. Novruzov notes that thanks to the intensive activity of the Chamber of Auditors, a national audit system was formed in Azerbaijan over the past years, the volume and scope of auditor services increased significantly, the role of audit in increasing transparency, the fight against corruption and the development of the country's economy as a whole deepened significantly.<sup>4</sup>

In Azerbaijan, the law “On auditor activity” explains the essence of a number of concepts related to it. This law aims to regulate the independent financial control system that determines the organization of auditor activities, the legal basis of this activity, the rights, goals and duties of auditors in our country.<sup>5</sup> The main purpose of the audit

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<sup>3</sup> Atashov, B.Kh. The historical role of Heydar Aliyev in the development of the financial and audit system of independent Azerbaijan. Materials of the Republican practical conference organized by the Azerbaijan State University of Economics, held online on May 6, 2021 and dedicated to the 98th anniversary of the birth of the national leader Heydar Aliyev. Volume I - Baku, - 2021, - p. 145.

<sup>4</sup> Novruzov, V.T. Successful reforms increase the importance of auditing. 04.05.2012. [Electronic resource] / URL: <http://www.azerbaijan-news.az/view-9925/ugurlu-islamhatlar-auditin-hemiyetini-daha-da-artirir> - p. 2.

<sup>5</sup> Law of the Republic of Azerbaijan on auditor service. - Baku, - September 16, 1994, No. 882. - p. 2.

is to determine the reliability of financial statements of economic entities and the compliance of their financial and economic activities with regulatory documents.

In our opinion, the decision to conduct mandatory inspections for most economic entities helps the development of the audit itself. At the same time: “*audit-related services also play an important role in the development of audit activity.*”<sup>6</sup> We also believe that audits are necessary for all organizations to determine the reliability of financial statements. The concept of audit is broader than other forms of control. Because it includes not only the verification of the reliability of financial indicators, but also the development of proposals for the improvement of economic activity in order to rationalize expenses and optimize taxes.<sup>7</sup>

In terms of methodological features and approaches, the goals and tasks, principles, functions and requirements of the audit are given in the form of a block diagram in scheme 2.

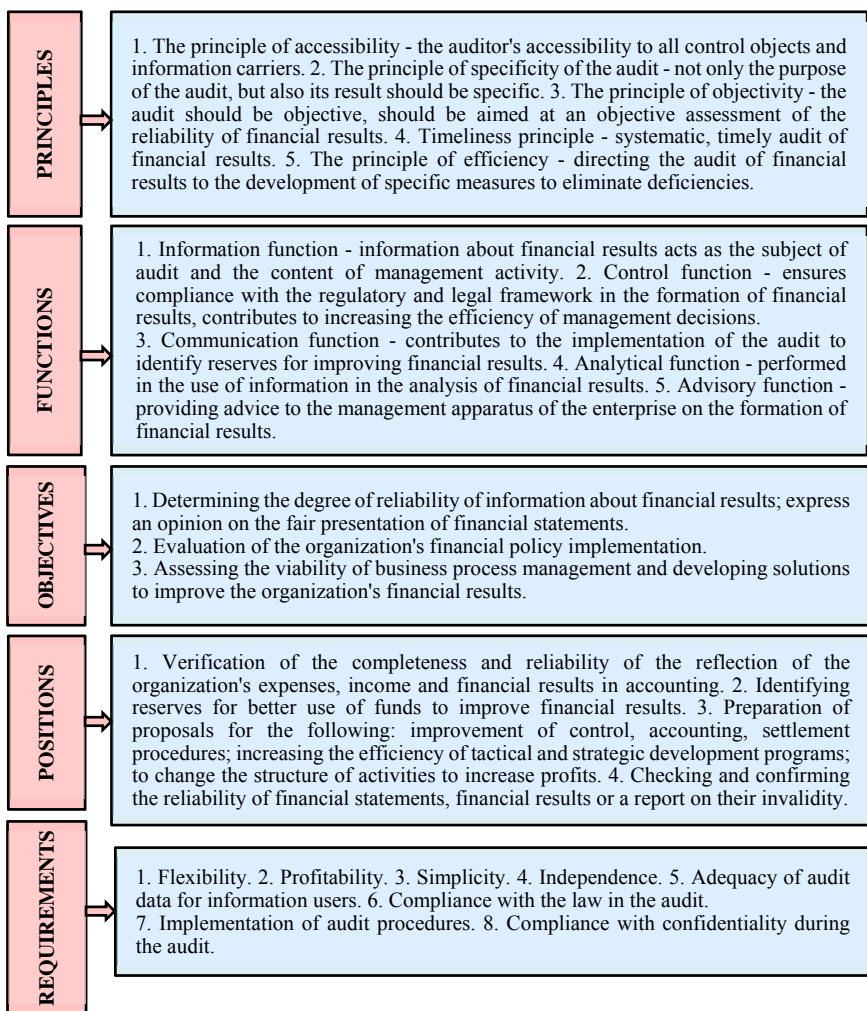
In our opinion, for the objective assessment of the financial results of agricultural organizations, the complementary application of all sub-systems of economic control, including internal and external audit, is necessary. In order to effectively organize the external and internal audit of financial results, the conditions for the implementation of their goals, tasks and functions, the principles and requirements of external and internal audit should be followed.

Organization of efficient use of financial resources is one of the important issues in ensuring the development of agriculture in the world experience. The financial control mechanism should be efficient enough and contain effective tools. For example, in the countries of the European Union, the role of audit is preferred in the organization of financial control and efficient use of financial resources. Subjects of economic activity must undergo audit inspections and receive an opinion at the end of the reporting year. On the other hand, in France, one of the leading countries of the European Union, a strong legislative

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<sup>6</sup> Hajiye, F.Sh. Conceptual foundations of audit development in modern conditions. Audit magazine, – 2016. No. 1, – p.3.

<sup>7</sup> Zinovieva, N.M., Bloshenko, K.V. Audit as a factor of business efficiency. Territory science. – 2017. No. 3, – p. 123.



**Scheme 2. Block diagram of the principles, functions, goals, tasks and requirements of the audit of the results of financial and economic activity of enterprises in terms of methodological features and approaches**

*Source: prepared by the author.*

framework has been formed for the organization of accounting work, preparation of financial reports and organization of audits in agriculture. The goal is to ensure legal and transparent activity of economic entities

operating in agriculture, and to protect accountability.<sup>8</sup>

**In the second chapter** of the work entitled “**Analysis and evaluation of the use of audit in the development of Azerbaijan's agriculture in modern conditions**”, the analysis of the current state of the development processes of agriculture in the country and the use of audit in this field; the assessment of financial results in agriculture and the factors determining the expansion of the role of audit and the assessment of the possibilities of increasing the role of audit in the development of agriculture according to international standards are given.

We have conducted analyzes and comparisons on a number of indicators in order to have a clearer picture of the current state of agricultural development in our country and to ensure a wider use of audit in this field.

Table 1 shows the dynamics of the total product of agriculture in Azerbaijan and its main areas.

**Table 1**

**The total product of agriculture in Azerbaijan, million manats, 2011-2022**

Years	Total	including	
		Crop products	Livestock products
2011	4525,2	2339,8	2185,4
2012	4844,6	2458,2	2386,4
2013	5244,6	2629,6	2615,0
2014	5225,8	2449,4	2776,4
2015	5635,3	2761,1	2874,2
2016	5632,4	2577,2	3055,2
2017	6580,0	3019,0	3561,0
2018	7010,0	3186,0	3824,0
2019	7836,7	3751,2	4085,5
2020	8428,9	4028,4	4400,5
2021	9163,4	4511,0	4652,4
2022	10984,2	5538,0	5446,2
In 2011-2022 Increase-decrease: +/-	+2,43 times	+2,37 times	+2,49 times

*Note: Prepared by the author based on the data of SSCAR-*  
<https://stat.gov.az/source/agriculture/>

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<sup>8</sup> Matveeva, N.S. International experience of implementation of state financial control// Financial journal. – 2020. T.12. No. 2, - p. 77.



If we look at Table 1, it can be seen that during the period 2011-2022, the total production of agricultural products increased by 2.43 times, including 2.37 times for crop products and 2.49 times for livestock products.

Table 2 shows the dynamics of credit investment in agriculture in Azerbaijan, and we can note that during the years 2011-2022, credit investment in the country increased by 2.1 times, while this indicator was 34.8% in agriculture. The specific weight of credit investment directed to agriculture in the total credit investment is also low - 3.64%.

**Table 2**

**The dynamics of credit investment in the general and including agricultural sector in Azerbaijan, 2011-2022 (to the end of the period)**

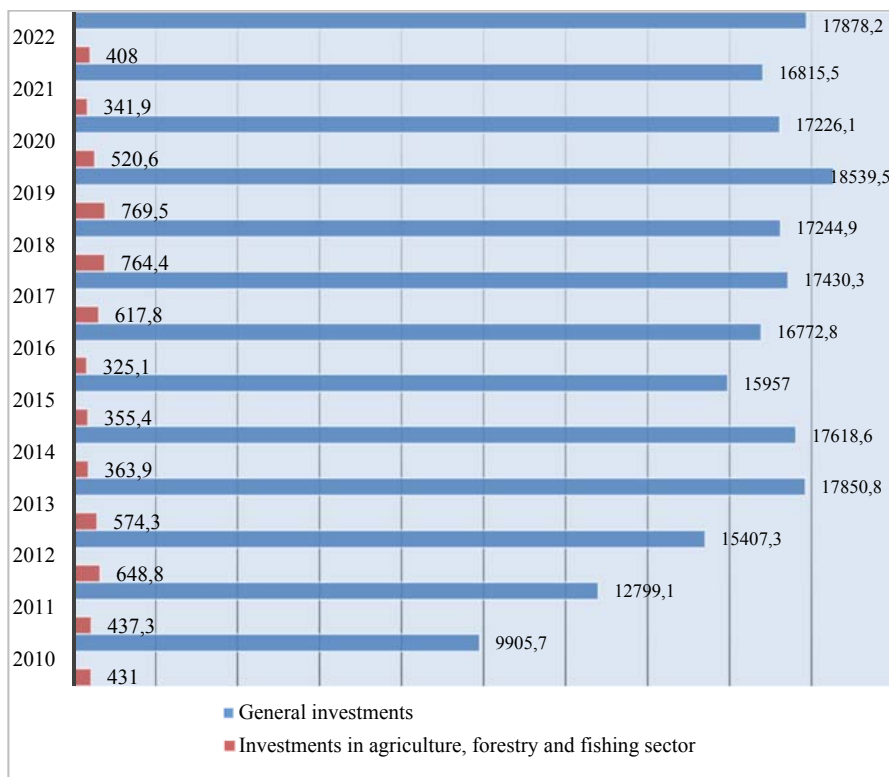
Years	Total, mln. manat	Agricultural area	
		total, mln. manat	specific gravity of manat, in %
2011	9850,3	466,7	4,7
2012	12243,7	546,2	4,5
2013	15422,9	733,3	4,8
2014	18542,6	847,3	4,6
2015	21730,4	508,1	2,3
2016	16444,6	441,3	2,7
2017	11757,8	429,2	3,7
2018	13020,3	470,0	3,6
2019	15298,2	543,4	3,6
2020	14530,4	566,2	3,9
2021	17119,8	591,7	3,5
2022	20184,0	629,1	3,1
In 2011-2022 increase decrease: +/-	+2,1 times	+34,8 %	-1,6
In 2011-2022 total loan investment	186145,0	6772,5	3,64

*Note: Prepared by the author based on the data of SSCAR-  
<https://stat.gov.az/source/agriculture/>*

The diagram shows the volume of investments directed to the economy of Azerbaijan in 2010-2022 in general, including the agricultural sector, and we can note that the volume of investments directed in recent years has not

yet recovered to the level of the period before the Covid-19 pandemic.

Table 3 analyzes the financial results of agricultural enterprises in Azerbaijan in 2011-2022. The main highlights are the decrease in the number of businesses operating. Despite this, the total profit increased almost 8.4 times. In particular, the growth rate of profit in crop farming was 4.2 times compared to the livestock sector, and the growth rate in this sector was 19.1 times during the analyzed period.



**Diagram 3. Volume of investments directed to the economy of Azerbaijan, including agriculture, mln. manat, 2010-2022 years**

Source: Prepared by the author based on the data of SSCAR-

<https://stat.gov.az/source/agriculture/>

Table 4 shows the dynamics of a group of indicators of audit activity in Azerbaijan in 2010-2022, including indicators related to audit activity in the field of agriculture.

**Table 3**

**Financial results of agricultural enterprises in Azerbaijan  
(2011-2022)**

Indicators	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Increase or decrease in 2011-2022: +/-
Number of operating enterprises, unit, including:	1917	1774	1669	1701	1659	1592	1608	1641	1471	1024	1035	1047	- 8,3%
those working for profit	1761	1665	1590	1577	1530	1488	1512	1560	1376	880	880	836	- 2,1
those working at a loss	156	109	79	124	129	104	96	81	95	61	70	48	- 3,25
Total profit, thousand manats	36926	48200	52283	59028	39763	75246	62815	96917	92696	104016	171197	310012	+ 8,38
Total profitability, %	21,3	19,2	18,3	17,0	11,3	20,3	14,1	20,1	17,2	19,4	27,2	37,9	+ 16,6 %
Profit (loss) in crop cultivation (-), thousand manats	8980	14609	17533	16234	20241	40268	32235	56577	68795	69321	127159	170174	+ 19,1
Profit in animal husbandry (loss (-), thousand manats	25041	29036	27533	25842	19993	31330	24356	19048	10481	27180	32557	113751	+ 4,52 dəfə
Agricultural products Profitability of sales, %, from:	19,7	17,7	16,5	16,0	11,3	19,4	12,9	16,2	15,3	19,0	26,4	35,0	+15,3%
in plant breeding	24,1	35,5	35,1	29,3	36,0	43,5	25,5	40,4	35,7	29,2	51,7	51,9	+27,8 %
In animal husbandry	20,5	15,1	16,5	9,4	7,1	11,8	8,0	5,9	3,4	9,5	8,5	23,6	+3,1 %

*Note: Prepared by the author based on the data of SSCAR-*

*<https://stat.gov.az/source/agriculture/>*

Table 4

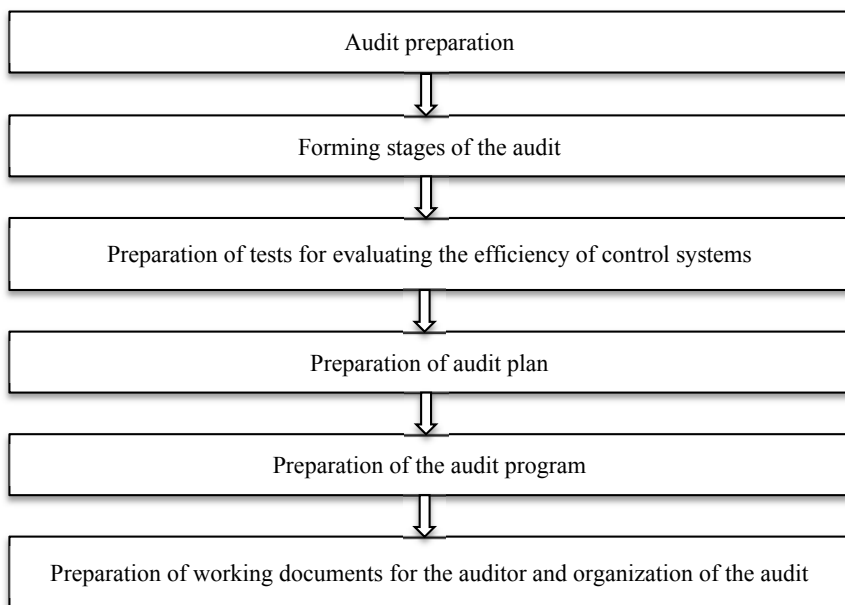
**Dynamics of indicators of audit activity in Azerbaijan  
(including agriculture) 2010-2022**

s/s	Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
01	Number of auditor organizations and independent auditors, total, including	88	98	100	95	99	95	105	122	159	180	171	197	210
	- independent auditors	40	42	48	40	43	93	38	45	59	57	55	55	57
	- auditor organizations	41	48	44	47	36	34	45	55	78	106	100	124	135
	- audit organizations with foreign investment	7	8	8	8	20	22	22	22	22	17	16	18	18
02	The number of concluded audit contracts, in terms of:	3530	3465	3737	3793	3487	3094	3540	4826	4517	6451	5056	5956	6750
	- In the field of agriculture	-	-	-	-	-	-	-	-	-	-	-	-	-
03	Amount of concluded audit contracts, mln. manat, including:	31	28	36	45	47	49	56	54	74	73	77	100	111
	- In the field of agriculture	31	28	36	45	47	49	56	54	74	73	77	100	111
04	Number of mandatory audit object, total, including	-	-	-	-	1894	1770	1522	2134	3142	3745	2198	2072	2270
	- the number of those who passed the audit	2831	2869	3155	3293	2995	2649	2663	3632	3943	5205	4103	4782	5338
05	The number of mandatory audit objects in the field of agriculture, total, including	-	-	-	-	-	-	-	-	-	-	-	-	-
	- the number of those who passed the audit	-	-	-	-	-	-	-	-	-	-	-	-	-

*Note: Prepared based on the reports of the AR Chamber of Auditors (2010-2022).*

From the analysis of Table 4, it is clear that the number of audit organizations and independent auditors increased from 88 to 210 during 2010-2022. The number of auditor contracts concluded during this period increased from 3530 to 6750. If the amount of auditor contracts concluded in the field of agriculture was 31 million manats in 2010, this indicator was 49 million manats in 2015 and 111 million manats in 2022. In addition, the number of mandatory audit objects in the field of agriculture was increased from 1894 in 2014 to 2270 in 2022. In the field of agriculture, the total number of audited persons increased by 88.5% in 2010-2022 and reached 5338 in 2022. As it can be seen, the role of audit in the field of agriculture has been increasing in recent years, and the number of those who passed the audit is a clear indication of this.

In the context of the stages given in the form of an algorithm in Scheme 3, we recommend an audit of the main funds, equipment and inventories in agriculture:



**Scheme 3. Basic funds, equipment and inventories in agriculture algorithm-scheme of stages of planning and organization of audit.**

*Source: compiled by the author.*

The stages of the audit of this department include tests for the evaluation of the internal control system, preparation of a plan and program, and the formation of working documents for the auditor. To improve the organization of the audit of operations with reserves, we offer a number of directions:

- ✓ improvement of economic risk assessment system;
- ✓ improvement of planning and documentation;
- ✓ improvement of auditor risk assessment system.

If we look at the processes related to audit activities in agriculture from the perspective of international standards, we can see that internal auditors have a number of duties. These include:

- to help the management of the farm in achieving the set goals;
- expand business opportunities;
- reduce risks;
- optimize operational processes;
- refers to providing advice and guarantees on certain issues.

The internal audit department contributes to the implementation of the main tasks of internal control based on risk assessment.

At the same time, they can be used as sources of information during the audit of the formation of financial results:

- ✓ organizational and administrative documents: founding documents (information on the type of activity, method of profit distribution), minutes of founders' meetings (decisions on profit distribution), accounting policy;
- ✓ primary documents: documents that are the basis for the accounting of operations on the sale of goods, provision of services, accounting of production costs and other primary documents; financial results;
- ✓ registers for analytical and synthetic accounting;
- ✓ reporting documents: balance sheet, profit and loss statement, statement of changes in capital.

**In the third chapter** of the thesis entitled **“Prospects of increasing the role of audit in the development of agriculture in Azerbaijan”** regulation of the role of audit in the development of agriculture through economic and legal mechanisms; ways to improve the role of audit in the development of agriculture due to digital

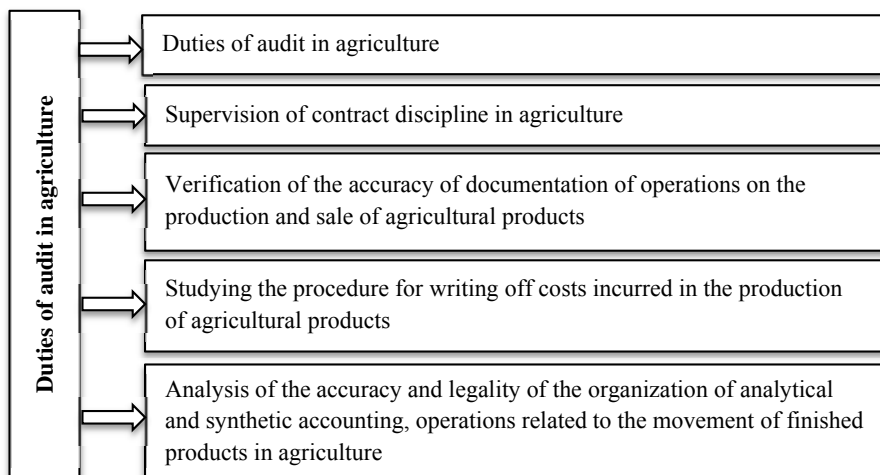
technologies; directions for strengthening the role of audit in the development of agriculture in the context of post-pandemic and post-conflict areas are given.

In terms of regulating the economic and legal basis of the role of audit in the development of agriculture, we have summarized our conclusions as follows:

- ✓ the quality of audit services in agriculture should be increased and expanded, measures should be taken to raise the level of professionalism of those engaged in audit activities;
- ✓ in order to increase the regulatory role of audit activity in the development of agriculture, the legal basis of audit activity should be further strengthened, taking into account international experience;
- ✓ in order to increase transparency in agriculture and ensure the completeness of accountability, the correct assessment of the role of audit functions should be constantly focused and conceptual bases should be formed in this regard;
- ✓ the role and importance of audit in the process of regulation of audit activities in agriculture should be evaluated objectively and should be reflected in the country's agrarian policy and laws in this field;
- ✓ the level of independence of auditors in the verification of the activities of agricultural entities should be maximized and an impartial approach to the verification processes should be ensured.

As a result of the conducted research, we can conclude that the next tasks should be solved during the implementation of the audit in agriculture (scheme 4).

It should be noted that ensuring financial transparency and taking measures to organize control in accordance with the requirements of the modern era are among the main tasks facing the audit activity. The main principles and methods of the audit should be the same for agricultural enterprises, and the methodological aspects should be established taking into account the features of the national accounting system, which was developed based on the characteristics of the economy of our country.



**Scheme 4. The main tasks and goals of the audit in agriculture block diagram**

*Source: prepared by the author based on research materials.*

Digital agriculture is an important factor in the development of the national economy, and this means that special attention is required in this area. The application of digital technologies in the country's agriculture allows to reduce the use of foreign resources on the one hand, and on the other hand to make maximum use of local production factors.<sup>9</sup>

In general, we have given the important directions of digitalization of agriculture as in scheme 5.

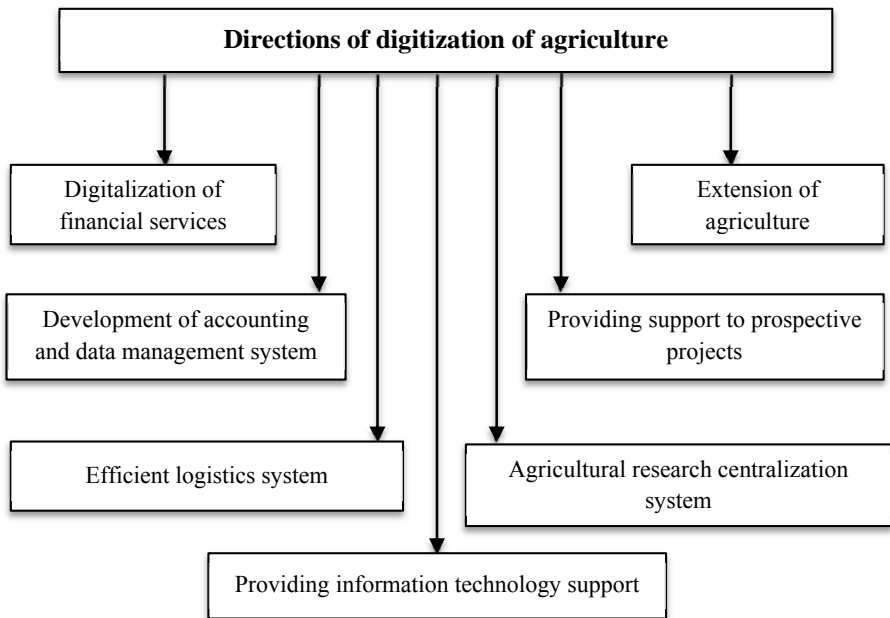
We have attributed the following to the advantages of using digital technologies in agriculture:

- timely provision of agricultural producers with necessary information flows;
- activation of agricultural producers to digital sales channels;
- timely response to negative external threats;

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<sup>9</sup>Ponomareva, E.V. Digital agriculture as part of digital economy / E.V. Ponomareva, E.M. Roman // Chronos. – 2020. No. 8(47), – p. 71.





**Scheme 5. Directions of digitization of agriculture**

*Source: compiled by the author.*

Digital agriculture is an important factor in the development of the national economy, and this means that special attention is required in this area. The application of digital technologies in the country's agriculture allows to reduce the use of foreign resources on the one hand, and on the other hand to make maximum use of local production factors.

In general, we have given the important directions of digitalization of agriculture as in scheme 5.

We have attributed the following to the advantages of using digital technologies in agriculture:

- timely provision of agricultural producers with necessary information flows;
- activation of agricultural producers to digital sales channels;
- timely response to negative external threats;
- reduction of transactional costs that are not directly related to the production of agricultural products;

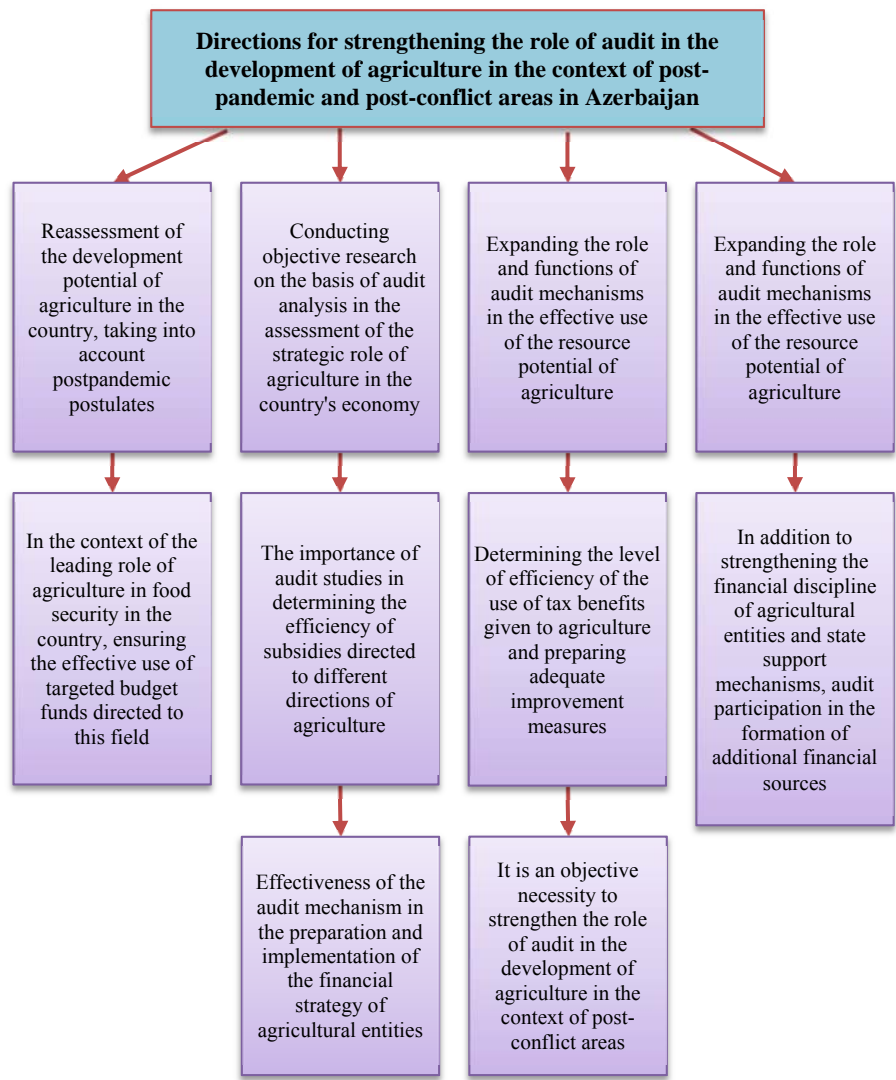
- minimization of risks in the field of management;
- reduction of personnel shortage;
- simplification of access to borrowed foreign resources, etc.

Having a developed corporate management system is one of the important conditions for the efficient operation of audit in agriculture. There can be no effective corporate governance without an optimally functioning audit system, these areas are interconnected and are elements of the overall system. One of the most important factors for the development and improvement of the audit system in agriculture is the high management skills and motivation and interest of the managers of the enterprises in that field. The support and interest of the enterprise's management can be a serious basis for the implementation and further development of the audit activity.

In general, in the context of post-pandemic and post-conflict areas in Azerbaijan, we have given directions for strengthening the role of audit in the development of agriculture in scheme 6.

As we mentioned earlier, within the framework of the implementation of the 1st State Program on the Great Return, the implementation of numerous measures has been started, and in this regard, large-scale works in the direction of building “smart” villages, towns, cities and opening new jobs in connection with mass settlement are becoming more and more intensive. One group of indicators taken as a target in this program - the more active attraction of investments to the region and the creation of a favorable entrepreneurial activity environment, the maximum effective use of the resources available here, and at the same time the economic growth of the rich resources concentrated in the newly created Karabakh and East Zangezur economic regions, economic growth and involvement in financial circulation, etc. belongs to. We believe that it is important to take purposeful and useful measures to increase the efficiency of the projects to be realized through complex audit analyzes and assessments in these processes. In addition, the perspectives of accelerating the processes of diversification of the economy in the direction of reintegration in the post-conflict areas, organizing the business environment under favorable conditions, and effectively using audit mechanisms and tools to ensure the integration of the post-

conflict areas into the local and foreign value chain of the economy in general are noteworthy.



**Scheme 6. Directions for strengthening the role of audit in the development of agriculture in the context of post-pandemic and post-conflict areas in Azerbaijan**

*Source: prepared by the author.*

We believe that in the near future in our country, it will be necessary to take more productive steps and set goals to accelerate the development of agriculture and increase the efficiency of the agro-industrial complex. Thus, as the welfare of the country's population increases, the level of consumption increases, and these, in turn, determine the increase in the production of consumer goods and products that meet modern standards, primarily food products. Increasing the role of audit in these processes can make additional contributions to the development of agriculture in addition to being more effective.

## **Conclusions**

**The “Conclusions”** section of the dissertation contains suggestions and recommendations of scientific and practical importance arising from the nature of the research:

1. Taking global threats as a basis, new scientific approaches to the development of agriculture should be formed in the modern era, and conceptual, theoretical and methodological bases should be studied in depth, and scientific theoretical, methodological and practical views reflecting the objective reality of these should be provided in the context of the challenges of the time. In connection with the above, it would be appropriate to use the block diagram of the objectives and tasks, principles, functions and requirements of the audit in agriculture in terms of modern methodological features and scientific approaches.

2. It can be predicted that the important role of the audit mechanism and service in increasing the level of profitability of economic entities operating in agriculture, ensuring transparency, protecting legislation, ensuring the accuracy of accounting documents and financial statements, and strengthening activity control will increase year by year.

3. In our opinion, the planning and programming of the control and audit process is of particular importance for the proper organization of the audit of financial results in the intensification of agricultural development in modern times. From a methodological point of view,

the plan of the audit process includes not only the planned types of work, but also:

- audit objects;
- the subject of the audit;
- the purpose of the audit;
- provides the procedure for summarizing and implementing the results of the audit.

The efficiency of this process must be ensured in order to complete the audit program in full and on time and to achieve the audit objective.

4. In our opinion, the factors affecting these processes should be determined for the objective planning of the audit and its effective implementation. Various factors affect the financial results of agricultural organizations. In addition, they are formed from different types of activities, income and expenses. In general, the nature of the audit directly depends on the experience and qualifications of the auditor, the environment of cooperation between the audit firm and the client, that is, the degree of knowledge of the client's characteristics, the nature of the tasks to be solved in this area and other factors. Therefore, it is important to carefully study and consider the methodological features of the audit in order to use the audit in the development of agriculture as effectively as possible.

In our country, there is a need to make more use of the international experience of using audit in accelerating the development of agriculture, increasing the efficiency of activities, and especially in the processes of increasing productivity.

5. In our opinion, the competent operation of the audit service in agricultural enterprises can ensure the efficient establishment of the accounting system. This will ensure the protection of assets of those entities, as well as more efficient use of its resources. In this regard, the ways of improving the audit were investigated, and the algorithm-scheme of the stages of planning and organization of the audit of the main funds, equipment and inventories in agriculture was developed.

6. It is important to improve the audit institute in Azerbaijan in general and the audit mechanisms in agriculture in particular in accordance with the challenges of the modern era and the conditions related to global risks and to take measures to increase the level of

professionalism. In this regard, in order to increase the efficiency of agriculture, it is necessary to organize the use of the audit mechanism in accordance with international practice, increase transparency, develop a monitoring mechanism up to annual reports, and conduct impartial audit inspections. In view of the above, a schematic structure of the database formation and audit processes for making decisions in accordance with international standards in the field of agriculture was prepared and its use was proposed.

7. Internal audit, which is one of the important types of audit, is an effective tool that allows to improve the activity of agricultural entities, strengthen the internal control system and increase the efficiency of management. The structure of the internal audit service should be maximally adapted to the existing conditions in order to solve the tasks assigned to it.

8. It is necessary to increase the role of audit in the effective use of investment, financial and credit resources directed to agriculture, and in this case more successful results can be achieved. Thus, to increase the attraction of investment resources and the availability of credit resources, forming a national system of financial and credit guarantee organizations can be more effective.

9. It is important to objectively assess the possibilities of increasing the role of audit in the development of agriculture. Thus, in order to ensure the orderly and efficient conduct of entrepreneurial activity in agriculture, it is necessary to ensure the development of intra-farm rules that include the economic-legal and organizational aspects of audit procedures. Under these conditions, it is possible to modernize the development of agriculture in accordance with the organizational aspects of audit procedures and economic-legal mechanisms.

10. In our opinion, it can be concluded that the efficiency of the audit depends on the auditor's creative approach to his work, the presence of special knowledge of financial accounting in agriculture, as well as the advanced regulatory framework. The synthesis of these components is the key to the auditor's success when conducting an audit of relevant objects of commercial organizations operating in the field of agriculture.

11. It is extremely necessary to improve the role of audit in the development of agriculture and make it more productive due to the strengthening of digital technologies and information provision in Azerbaijan. In terms of the stated principles, a schematic form of the main stages and directions of digitalization in agriculture was developed, and a proposal was developed for the areas of application of the audit mechanism consisting of digital technologies. For this, in the context of post-pandemic and post-conflict areas, measures should be taken to strengthen the role of audit in the development of agriculture, and audit mechanisms that include modern realities should be developed and implemented. This can make additional contributions to improving the quality of not only agricultural enterprises, but also audit services and increasing the efficiency of audit organizations.

12. Our final conclusion is as follows: the regulatory and mobilizing role and importance of audit activity, which performs an important function in this field, along with production, organizational-management, legal and similar basic factors that directly affect the sustainable development of agriculture in our republic, is undeniable. Increasing the role of audit in these processes can provide additional support to the development of agriculture in addition to being more effective.

Thus, the implementation of the above-mentioned recommendations and suggestions will contribute to the deepening of foreign economic relations between the Baltic countries and Azerbaijan, the ability to quickly and adequately respond to foreign risks, to increase the competitiveness of production enterprises in the world market.

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1. The role of audit in the development of agriculture in the context of new challenges // “Geostrategiya” magazine, - Baku, - 2021. No. 4 (64), - p. 104-109.

2. The main directions of improvement of audit in Azerbaijan's agriculture in modern times // “News of ANAS” magazine. Economy series, - Baku, - 2021. No. 04, - pp. 131-142.

3. The importance of audit in increasing the efficiency of agriculture in the conditions of global risks / Materials of the International scientific conference on “Problems of sustainable development of the economy in the information society”. - Sumgayit: SDU, - December 16-17, 2021, - p. 75-79.

4. Issues and mechanism of assessment of the role of audit in the development of agriculture in the context of international experience // “News of ANAS” magazine. Economy series, Baku, - 2022. No. 06, - p. 127-134.

5. Theoretical-practical and methodological aspects of using audit in the modeling of agricultural development // “News of ANAS” magazine. Economy series, - Baku, - 2022. No. 05, - p.94-103.

6. The strategic importance of digital technologies in increasing the role of audit in the development of agriculture in modern times. // “Innovative economy and management”, - Ganja, - 2022. No. 03, - p.297-304.

7. Current issues and prospects for increasing the role of audit in the agricultural economy of Azerbaijan // Journal “Financial economy”, - Russia, Moscow, - 2023. No. 02, - p. 183-187.

8. Assessment of the role of internal audit in agriculture in Azerbaijan // “Kooperasiya” magazine, - Baku, - 2023. No. 02, - p.196-203.

9. Problems of increasing the role of audit in agriculture in the context of digital technologies and financial and credit support / Materials of the 10th international scientific and practical conference “Actual aspects of the development of science and society in the era of digital transformation” (code - MKAA). - Russia, Moscow, 2 October 2023, - pp. 137-146.



10. Ways to improve the role of audit in the development of agriculture in Azerbaijan in post-pandemic conditions / Materials of the XII International Scientific and Practical Conference “Modern strategies and digital transformations of sustainable development of society, education and science”, - Russia, Moscow, - October 6, 2023, - p. 155-165.





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