WAYS TO IMPROVE THE AGRICULTURAL DIGITIZATION PROCESS

Karen A. Nersisyan
Shushi University of Technology
125, Armenakyan St. Yerevan
knersisyan@mail.ru
ORCID iD: 0000-0003-4715-8692
Republic of Armenia

Ashot Kh. Markosyan
Political, Legal and Economic
Researches and Forecasting NGO
125, Armenakyan St. Yerevan
markosyanashot034 @gmail.com
ORCID iD: 0000-0002-5077-4253
Republic of Armenia

Zhirayr M. Mirzoyan
Shushi University of Technology
125, Armenakyan St. Yerevan
mirzoyan.als@gmail.com
ORCID iD: 0000-0001-9667-7582
Republic of Armenia

Abstract

In today's world of global and regional military-political and economic events, the presentation of proposals for designing and implementing effective measures to assure food security and tackle the oncoming food crisis is becoming increasingly important for each nation. During the research, analytic, logical, comparative, and statistical methodologies were employed. According to studies, information and communication technologies have a key role in the growth of agricultural production in European and Central Asian countries, influencing society and the state in general on the social, economic, and political levels. The adoption of such technologies enables the improvement of the quality of goods and services, as well as the expansion of agricultural and food export. According to studies information and communication technologies play an important role in the development of agricultural production in European and Central Asian countries, influencing the social, economic and political field of society and the state in general. The adoption of such technologies enables the improvement of the quality of goods and services, to expand the export of agricultural and food products. Currently, developed and developing countries are migrating to their

K.A.Nersisyan, A.Kh.Markosyan, Zh.M.Mirzoyan
WAYS TO IMPROVE THE AGRICULTURAL DIGITIZATION PROCESS

digital agriculture system, which is tailored to each country's needs and operates in the interests of national policy.

Keywords: digitization, technolog, agriculture, integrated information environment.

Introduction

The objective of this research is to analyze and describe the role and importance of agriculture digitization, its features, importance, advantages, and features, as well as the requirement of its implementation in modern conditions, difficulties and solutions in transitional nations using RA as an example.

The management of the agri-food system is a key component of the strategic development of the economy, which includes innovative developments in digital technologies.

The implementation of modern management concepts in every branch of the economy, including in farming industry, requires the development and application of the new generation of digital technologies to create an opportunity to increase the efficiency of investments in the agri-food system, can become the main element of state support, and the digitization of the branch will enable a fast rate development of the farming industry.

Modern digital technologies can instantly solve problems, provide the most cost-effective models of production management, analyze and process large amounts of data, combine multiple information resources on a single platform, control and reduce production risks, and meet the information needs of a diverse set of stakeholders [1].

Agricultural professionals view digitization as a data collection tool with the potential to improve data collection, grouping, and analysis, as well as expand forecasting tools and forms, particularly for addressing harvesting organization, animal behavior management, and production efficiency issues. Digital agriculture is becoming increasingly crucial for agritech companies as the industry moves toward automation and the use of digital technologies.

Farming industry digitization helps to achieve the main goals of agriculture, such as increasing the efficiency of not only agriculture, but also the entire value chain of agricultural product production, making agricultural work more appealing to young people, solving the problems of the aging population in rural areas, increasing crop and livestock productivity, and having more operational information about the agricultural sector full and trustworthy data. Many nations are paying special attention to the quality of the resource potential, because the success of digitization of agricultural output is impossible without digital literacy training for agricultural workers. To better comprehend the nature, importance, and usefulness of digital agriculture, it is necessary to study the works of various renowned scholars and practitioners in this sector.

Thus, the Food and Agriculture Organization (FAO) specialists remark that digital agriculture gives increased prospects for more sustainable agriculture, both economically, environmentally, and socially [2].

And OECD experts believe that digital technologies, the Internet, mobile technologies and gadgets, digital analytics, artificial intelligence, digital services, and apps - are fundamentally altering agriculture and the food chain [3].

K.A.Nersisyan, A.Kh.Markosyan, Zh.M.Mirzoyan

WAYS TO IMPROVE THE AGRICULTURAL DIGITIZATION PROCESS

Experts in the European Union (EU) believe that digital technologies have the potential to revolutionize the farming industry by enabling farmers to work more precisely, efficiently, and sustainably.

Recommendations based on digitization can help to make decisions more effective, gain new experience, enhance the environment, and make agricultural employment more appealing to young people. Consumers are becoming more aware about how their food is produced thanks to advances in digital technology [4].

Digital agriculture can be defined as the seamless integration of digital technologies to improve management efficiency in agricultural and livestock breeding, among other operations.

It enables sector businessmen to increase their own production, cut long-term costs, and manage risks.

As the accumulated experience in this sphere has shown, the availability of any national digitized agricultural system determines its effectiveness:

1) modern infrastructure that assures information security, cyber security, and personal data protection;
2) electronic platforms for providing electronic services;
3) digital information is stored in the state agencies;
4) complete coverage of the area with 3G, 4G, and LTE broadband connections;
5) information platforms for service engagement with agricultural workers;
6) informational and financial support for agricultural workers.

General global trends in the development of digital agriculture include:

1) Transition to an integrated management and control system based on modules with specific data sets, such as the farm register, livestock registration and identification system, management and payment processing system, land identification system, statistical data; registers, and market price system;
2) The introduction of artificial intelligence, which boosts agricultural output; the capabilities of artificial intelligence allow for rapid responses to changes in the state of soils and crops based on data analysis received through remote monitoring;
3) creation of electronic marketing platforms for the sale of locally produced agricultural products;
4) the establishment of scientific centers and general education courses, the programs of which are directed at the study of modern agricultural production methods.

According to the major positions, the study of the problems of management and formation of digital agriculture in the nations of Europe and Central Asia can infer that their main tendency is the construction of a unified information resource in the web-portals of branch services.

The Republic of Armenia has created and implemented an integrated information ecosystem that connects all electronic databases on a single online platform. A web-portal of this type allows for the provision of a variety of public services in real time, as well as access to registries.

Agriculture's proportion of the GDP structure in RA has declined dramatically over the last seven years (17.2% in 2015, and 11.1% in 2021), but it remains one of the most important and strategically vital sectors of the RA economy [5].

K.A.Nersisyan, A.Kh.Markosyan, Zh.M.Mirzoyan
WAYS TO IMPROVE THE AGRICULTURAL DIGITIZATION PROCESS

It should be emphasized that, according to government projections, this indicator will continue to rise in the following years, reaching 9.8% by 2025 [6].

According to statistics, the economy grew by 11.8 percent in the first half of 2022 compared to the first six months of the previous year, but this gain does not apply to agriculture. According to Vahan Kerobyan, Minister of Economy of the Republic of Armenia, the flaw is in the data collection process, because agricultural data collection is not computerized, and we rely on operational data, which does not always inspire confidence with the human eye.

In December, 2019, the Government of the Republic of Armenia adopted the "2020-2030 Plan of the Key Orientations Ensuring the Economic Development of the RA Agriculture Sector" and it defines four digital and innovative components of the agricultural strategy:

- implementation of investments in national digital agriculture platforms and digitization initiatives, promotion and implementation of larger-scale (non-digital) agricultural innovations;
- digitization of the government's agricultural systems, and development of the Ministry's digital and innovative capabilities;
- capacity building of villagers and education system in the field of digital agriculture and innovations.

The main target areas for launching digital agriculture in Armenia are:

(a) digital provision of advisory and information services for farmers, which will include agricultural advisory services, market information and warning systems for weather, crop pest/disease threats,

(b) creating digital market linkages, i.e. creating platforms and services through which quality agricultural inputs, land and equipment are available to farmers, or which

(c) farmers will be given the opportunity to contact local and international buyers,

(d) digital financial services, such as agricultural insurance, lending and payments,

(e) digitization of supply chain management, including logistics, food safety and control/certification systems;

(f) macro-agricultural literacy tools for overall control of the agricultural system, policy and resource allocation planning and results monitoring,

(g) digital capacity building and agricultural skills training for youth and women engagement and empowerment,

(f) Innovative systems facilitating the digital exchange of data and ideas between agricultural researchers, academia, rural advisory services, extension training organizations, agribusinesses and farmers.

Finally, the use of digital and other technology will strengthen the stability of farmers' high revenues, as well as provide more advantageous economic conditions for businessmen and investors in the agrarian sector. At a higher level, digitization and innovation will result in faster rates of growth of the RA agricultural GDP indicator, faster response of public institutions involved in agriculture, increased awareness and cost-effectiveness, increased participation of women and youth in agriculture and environmental sustainability (e.g., water use) and climate protection, food improving safety, and, most importantly, creating and promoting new jobs in agricultural production and other related economic sectors, such as agro-production, food wholesale and retail, transport, logistics, finance and tourism.

ECONOMICS
K.A.Nersisyan, A.Kh.Markosyan, Zh.M.Mirzoyan
WAYS TO IMPROVE THE AGRICULTURAL DIGITIZATION PROCESS

The creation and digitization of a single portal for the entire water economy (both irrigation and drinking water) is a priority for the economy of Armenia, especially for agriculture. Which will give an opportunity to know at any time how much water is stored in the republic's reservoirs, what land areas can be irrigated with them, and what land surfaces can be irrigated under the climatic and temperature conditions typical of the given stage, and the soil conditions typical of the given region.

On the other hand, the installation of high-tech water meters on irrigation water lines entering all of the country's villages will allow for the specification of the water consumption of the given community in terms of all days of the irrigation season, and thanks to digitization, it will be possible to specify the change in the volume of water use from year to year and, as a result, crop rotation options in the given region. Digitization of all statistics related to climatic conditions, which will create an opportunity for farmers to compare and understand which days in the spring there were the most drastic temperature fluctuations, recorded frosts, or which days of the year there were hailstorms and take measures accordingly.

Almost the same in terms of the spread and development of diseases and pests. This will give an opportunity to both the specialists of the agricultural consulting companies to be established and the farmers to orient themselves in terms of the timing of the spread of diseases and pests and to take timely measures to fight against them.

The final clarification and digitization of processing companies' production capacities (priority procurement opportunities), which will create opportunities for the government to finally verify the agricultural sector policy; for the establishment of new vineyards, which varieties to prioritize, which surfaces to provide subsidies for, and thus the winemaking and brandymaking strategy to be implemented will also be specified. In the end, digitization will make it possible to specify the promising fields of the republic's agriculture, both in plant breeding and animal husbandry. Accordingly, each farmer in his region will decide on the prospect of organizing his production.

First and foremost, Armenia has a tangible advantage in high-quality mobile communications, which is characterized by strong mobile geographic coverage (100% 3G coverage, >50% 4G LTE coverage, mostly in urban areas), almost universal mobile phone usage (97%), and mobile internet connectivity with a very high level of access (88%), with more than half of even low-income households in the country using an Internet connection on a daily or weekly basis.

Second, Armenia has a modest but experienced ICT and technology sector that operates at the level of both local startups and large international technology organizations such as Microsoft. A growing base of Armenian IT developers, sophisticated data analytics companies, and precision equipment manufacturers (including several innovative agriculture-oriented companies operating in Armenia specializing in remote control, drones, field sensors, automation, and software) are driving the digital and digital transformation of Armenia's agriculture sector. has an exceptional ability to develop, adapt and promote innovative technological solutions.

Third, as part of the country's broader growth strategy, Armenia has prioritized the ICT industry and digitization. This attitude has also been reiterated by the newly founded Ministry of High-Tech Industry of the Republic of Armenia, implying that any investment in digital agriculture will be supported by other sectors of the economy (for example, telecom

K.A.Nersisyan, A.Kh.Markosyan, Zh.M.Mirzoyan
WAYS TO IMPROVE THE AGRICULTURAL DIGITIZATION PROCESS

operators and financial institutions are creating digital payment infrastructures and increasing investments in them).

Finally, Armenia may be proud of significant e-government accomplishments in other sectors of the economy, such as effective e-business registration and the national e-health platform, which serve as excellent models for agriculture.

On February 17, 2021, the Government of the Republic of Armenia issued the resolution "On Approving Armenia's Digitization Strategy, the Plan of Strategy Measures, and the Success Indicators." Digitization policy of Armenia aims at ensuring government, economy, and society digital interchange. The digital transformation plan aims to achieve the target goals of digitization by using a consistent approach to tackling the requirements and difficulties that the digitization process presents. The approach envisions enhancing, modernizing, and integrating the operational capabilities of existing digital systems via unified digital platforms.

The strategy envisions the enhancement, modernization, and integration of the operational capabilities of the presently operational digital systems via unified digital platforms [7].

Since 2019, Armenia has been operating an interest rate subsidy program for loans to the agricultural sector, which entails expanding economic opportunities for economic entities, introducing modern technologies, and increasing agricultural efficiency by improving credit conditions and partially subsidizing interest rates. On loans made by individuals and legal entities to Armenians involved in the agri-food sector.

TShe program's major purpose is to enhance capital investments, expand production capacity, introduce contemporary technologies, and increase agricultural productivity by raising the partial subsidy of interest rates on loans to individuals and legal entities operating in agriculture.

In May, 2022, the Board of the Eurasian Economic Commission approved "The international experience of digitization development in VAT. State support, regulation, practice" to the overview. The document contains a description of digital services and state support measures for the development of digitization in the agro-industrial complex of the Eurasian Economic Union states and a number of third countries.

The review of international practice and EAEU experience allows identifying the main paths of state regulation and support for the development of agricultural digital services.
The state's promotion of physical and economic access to the Internet and information and computer technologies in rural areas, the provision of grants for the development of digital solutions for VAT within the implementation of special acceleration programs, and the use of an interdisciplinary approach to the implementation of state scientific and technological programs are all mentioned as important factors in the document. The need to improve "digital literacy" through academic and short-term training programs of the villagers is important so that they can effectively apply digital technology, including accurate agricultural technologies in accordance with the adopted in March of this year instruction of the EEC Board. According to the commission's experts, digitizing state support for agriculture will reduce the administrative load on EEU governments. By ensuring the automation of governmental information systems, agricultural producers will have greater access to subsidies.It is believed that the review's application of expertise in the development of VAT

K.A.Nersisyan, A.Kh.Markosyan, Zh.M.Mirzoyan
WAYS TO IMPROVE THE AGRICULTURAL DIGITIZATION PROCESS

digitization within the scope of the Union will help its members increase thir agro-industry competitiveness in local and export markets [8].

According to specific criteria, 134 countries within EAEU are placed in the 2021 Network Readiness Index. The Network Readiness Index is divided into four categories:

1) technology (access, content, and future technologies such as AI and the Internet of Things);

2) individuals (citizens, business, state bodies);

3) Governance (trust, regulation, and inclusivity);

4) impact (economics, quality of life, and the digital economy's support to accomplishing sustainable development goals).

Conflict Setting

However, launching digital or other agricultural advances is fraught with difficulties. Agriculture digitization is still highly underutilized, with very low adoption. A number of digital agriculture solutions launched in the country in the past, mostly funded by donors, have failed due to poor implementation by farmers and entrepreneurs or lack of ongoing funding and poor commercial sustainability. The digital transformation strategy aims to realize the target goals of digitization through a common approach to tackling the requirements and difficulties brought to the digitization process.

Research Results

Armenia occupies a slightly higher than average level among the 134 studied countries (Fig.). Armenia is also a partner country in the EU's "Smart Agriculture in the Black Sea Basin" program, the main goal of which is to design and implement a repeatable and transferable model to prepare agriculture and related industries for digital transformation, a procedure that is occurring all across the world.
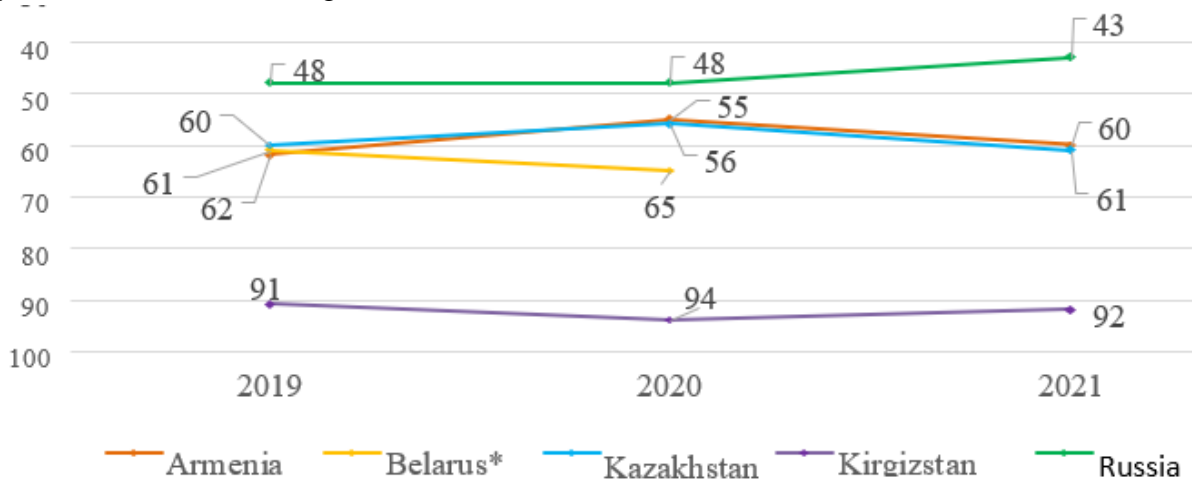

Fig. EAEU countries in Network Redeaness Index by all criteria in 2019-2021 [9]

The project's target group was established in the first two phases, and research and synthesis analysis were carried out, providing thorough information and suggestions on the level of readiness of digital agriculture, smart, and "IoT" technologies in the recipient countries. The "Smart Agriculture" platform is currently being created based on the research that has been completed. It will be a comprehensive online tool for planning a positive encounter - a process that is taking place all around the world. The platform will also help

commercial opportunities by facilitating SF technologies and enhancing the demand and supply of IoT technologies in the sector to create a good learning environment for stakeholders to congregate and share information. The platform will also help commercial opportunities by facilitating SF technologies and enhancing the demand and supply of IoT technologies in the sector.

The project's next stages will be to arrange a debate to build a common road map on smart agriculture in the Black Sea Basin, as well as to jointly prepare a two-day international conference of the Black Sea Basin Network called "Smart Agriculture in the Black Sea Basin." Representatives from the project's six partner countries will attend the conference, which will include workshops utilizing the GOPP (goal-based project planning) methodology aimed at building a road map for agricultural digitization.

The project's eventual consequence will be the establishment of the Black Sea Basin Smart Agriculture platform and network, which will aid in the growth of interaction among transboundary players [10]. FAO is now assisting Armenia in implementing a digital transformation of the agricultural sector and developing a national digital agriculture strategy.

Through the «National Strategy of Digital Agriculture», Armenia can contribute to the revitalization of food production, create incentives and facilitate the process of developing digital technologies in the field of agricultural production.

They can be used for the purposes of activation of new markets, strengthening of social protection, decentralization of trade, and ultimately become a driving force for innovations in digital agriculture", says Raimund Yele, representative of FAO Armenia [11].

In order to promote the digitization process in agriculture in RA, it is advisable to develop and introduce in the shortest possible time a rating index evaluating the developed level of this process.

Specialists from agricultural and other authorized ministries are needed to participate in the development of the rating system, to address problematic and other issues that arise during the program's execution, and to certify its results, to create an expert council comprised of representatives from digitizing organizations, educational institutions, and the community.

It should be mentioned that such a technique has been in place in Russia since 2021 [12]. In 2018, the Moscow Higher School of Economics developed and implemented the digitization index, which describes the level of development of digitization technologies in sector organizations [13].

The development of innovations in the agro-industrial complex has significant potential in RA, but it requires state assistance and industry-wide B2G cooperation (business and government). On the one hand, digital technology will improve the quality of management decisions, provide targeted instruments for state assistance measures, automate the gathering of statistical information, improve agricultural insurance mechanisms, and make these technologies available to producers. On the other hand, agricultural producers' use of digital technology is becoming an important tool for boosting the economic efficiency of agricultural production and the competitiveness of firms. At the same time, it should be recognized that in order to transition to digital technologies, conventional agriculture must be developed to a suitable degree.

It should be emphasized that the use of digital technology in agriculture contributes to enhancing agricultural production efficiency, making logical judgments based on big data

K.A.Nersisyan, A.Kh.Markosyan, Zh.M.Mirzoyan
WAYS TO IMPROVE THE AGRICULTURAL DIGITIZATION PROCESS

analysis, and increasing the efficiency of state control of agricultural support, including transparency.

These technologies also generate massive volumes of data, which may be merged with other data, saved, analyzed, and used to aid decision-making processes. Such "big data" might include a wide range of information assets that can be processed using new analytics techniques such as machine learning to estimate prospective outcomes based on a number of actions and conditions. All of this can help with future activity planning.

Conclusion

1) Create information systems to provide state support to agricultural producers, including the development of electronic algorithms to assess the applicant's compliance with the requirements for receiving subsidies, electronic data exchange between state databases for automatic verification of documents provided by the applicant, and reducing the administrative burden of the authorized bodies of the Member States.

- interactively receive up-to-date information about available state support measures for agriculture on the state information resource;
- send an electronic application for subsidy using an electronic digital signature.

2) Develop information systems to provide state support to agriculture to agricultural producers, including the development of electronic algorithms for assessing the applicant's compliance with the requirements for receiving subsidies, providing electronic data exchange between state databases for automatic verification of documents provided; the applicant, and reducing the administrative burden of the authorized bodies of the Member States, which will allow the applicant:

- interactively receive up-to-date information about available state support measures for agriculture on the state information resource;
- send an electronic application for subsidy using an electronic digital signature.

3) Create tools to aid in the development of digital solutions to increase the economic efficiency and competitiveness of agricultural production:

grant funding within the scope of special acceleration programs for digital companies with the prospect of investment in the agro-industrial complex;

application of an interdisciplinary approach to the implementation of state scientific and technical programs, with the involvement of programming specialists, to investigate the prospects of digitization of agricultural technologies (solutions), which will simplify future "duplication" of such projects.

4) Strengthen the capacities of advisory centers in terms of the transfer of SHTP's primarily digital technologies, including the establishment of regional test "digital fields" for the research and demonstration of digital technologies to agricultural producers from various agricultural sub-sectors.

5) Promote "digital literacy" among the rural population, increase internet connectivity in rural regions and strengthen the training system by facilitating learning and skill acquisition, provide financial assistance to eligible organizations involved in educational or consulting activities related to professional training and skill acquisition.

6) Support the acquisition of appropriate scientific research equipment; for example, the European Union has a Regional Development Assistance Fund (RDA), which was established to strengthen the EU's economic, social, and territorial cohesion by redressing

K.A.Nersisyan, A.Kh.Markosyan, Zh.M.Mirzoyan
WAYS TO IMPROVE THE AGRICULTURAL DIGITIZATION PROCESS

regional imbalances. The Foundation employs a variety of supporting tools, such as investments in infrastructure and equipment required for applied research.

7) Encourage rural residents to enhance their "digital literacy." Improve the training system by promoting learning and skill acquisition and expanding internet availability in remote areas. Provide financial assistance to qualifying organizations involved in educational or advising activities related to vocational training and skill acquisition.

8) Fund the acquisition of necessary scientific research equipment; for example, the European Union has a Regional Development Assistance Fund (RDA), which was established to promote the EU's economic, social, and territorial cohesion by redressing regional imbalances. The Foundation employs a variety of supporting tools, such as investments in infrastructure and equipment required for applied research.

9) Promote scientific and applied research for the development of digitization in the agro-industrial complex by establishing institutional bodies in charge of promoting innovation in the agro-industrial complex.

10) Support the scientific and applied researches for the development of digitization in the agro-industrial complex by creating institutional organizations that will be responsible for the promotion of innovation in the agro-industrial complex; for example, in the United States the National Institute of Food and Agriculture (NIFA) exists to integrate all agricultural research funded by the federal budget. The European Union is building the EIP-AGRI platform, which will eventually become a universal center for agricultural innovations in Europe, where scientific ideas and applied research results can be exchanged.

11) Encourage the growth of new farmers who will use innovative agricultural practices in their operations by providing funding, training, and mentorship. In the United States, for example, the Startup Farmers and Ranchers Development Program (BFRDP) gives funding to organizations that assist beginning farmers in meeting their educational, technical literacy, and informational problems.

12) It is necessary to develop and implement an index assessing the level of digitization in agriculture, which will greatly promote the process of using new digital technologies and solutions in the sector, will contribute to the formation of demand for leading digital technologies, popularization of domestic solutions in that direction, activation of the participation of executive bodies of state and local authorities, and that towards the implementation of state policies.

References

1. Assessment of the resource potential of agricultural land use for land management purposes / A. A. Varlamov, R. V. Zhdanova, A. A. Rasskazova [et al.] // International Symposium «Earth sciences: history, contemporary issues and prospects», Moscow, 10.03.2020. – IOP Publishing, 2020. – P. 012143. – DOI 10.1088/1755-1315/579/1/012143.

2. FAO Digital Services Portfolio //http://www.fao.org/digital-agriculture/digital-portfolio/en/

3. Technology and digital in agriculture //https://www.oecd.org/agriculture/topics/technology-and-digital-agriculture/

4. Europeon Commission, Agriresearch factsheet, Digital transformation in agriculture abd rural are-as. https://ec.europa.eu/info/research-and-innovation/research-area/agriculture-forestry-and-rural- areas/digital-transformation-agriculture-and-rural-areas_en

K.A.Nersisyan, A.Kh.Markosyan, Zh.M.Mirzoyan
WAYS TO IMPROVE THE AGRICULTURAL DIGITIZATION PROCESS

5. Source: RA Ministry of Economy. https://www.mineconomy.am/

6. Appendix 1 on june 30, 2022, of the government of the republic of armenia, on the approval of the medium-term state expenditure plan of the republic of armenia for the years 2023-2025 and the revised program for the reduction of the debt burden of the government of the republic of armenia for the years 2022-2026. https://www-10-10. gov.am/gov-decrees/calendar/2022/06/page/6/

7. Appendix № 1 Resolution of the Government of the Repubic of Armenia № 1886 L adopted on December 19, 2019 «The 2020-2030 strategy of the main directions ensuring the economic development of the agricultural sector of the Republic of Armenia».

8. International experience in the development of digitalization in the agro-industrial complex: government support, regulation, practice //https://eec.eaeunion.org/upload/medialibrary/d62/Mezhdunarodnyy-opyt-razvitiya-tsifrovizatsii-v-APK-gosudarstvennaya-podderzhka_-regulirovanie.pdf

9. International experience in the development of digitization in the agro-industrial complex: state support, regulation, practice. https://eec.eaeunion.org › upload › medialibrary

10. Agribusiness digital maturity rating will appear in Russia //https://agro.ru/news/35629-v-rossii-poyavitsya-reiting-cifrovoi-zrelosti-apk

11. Kosnikov S.N., Ashikaryan A.A., Yakimidi A.P. Problems of digitization of agriculture. The paper is on the specialty "Other agricultural sciences". Natural-Humanitarian Studies № 39 (1), 2022 pp. 154-160.

References

1. Assessment of the resource potential of agricultural land use for land management purposes / A. A. Varlamov, R. V. Zhdanova, A. A. Rasskazova [et al.] // International Symposium «Earth sciences: history, contemporary issues and prospects», Moscow, 10.03.2020. – IOP Publishing, 2020. – P. 012143. – DOI 10.1088/1755-1315/579/1/012143.

2. FAO Digital Services Portfolio //http://www.fao.org/digital-agriculture/digital-portfolio/en/

3. Technology and digital in agriculture //https://www.oecd.org/agriculture/topics/technology-and-digital-agriculture/

4. Europeon Commission, Agriresearch factsheet, Digital transformation in agriculture abd rural are-as. https://ec.europa.eu/info/research-and-innovation/research-area/agriculture-forestry-and-rural- areas/digital-transformation-agriculture-and-rural-areas_en

5. Source: RA Ministry of Economy. https://www.mineconomy.am/

6. Appendix 1 on june 30, 2022, of the government of the republic of armenia, on the approval of the medium-term state expenditure plan of the republic of armenia for the years 2023-2025 and the revised program for the reduction of the debt burden of the government of the republic of armenia for the years 2022-2026. https://www-10-10. gov.am/gov-decrees/calendar/2022/06/page/6/

7. Appendix № 1 Resolution of the Government of the Repubic of Armenia № 1886 L adopted on December 19, 2019 «The 2020-2030 strategy of the main directions ensuring the economic development of the agricultural sector of the Republic of Armenia».

8. International experience in the development of digitalization in the agro-industrial complex: government support, regulation, practice

//https://eec.eaeunion.org/upload/medialibrary/d62/Mezhdunarodnyy-opyt-razvitiya-tsifrovizatsii-v-APK-gosudarstvennaya-podderzhka_-regulirovanie.pdf

9. Международный опыт развития цифровизации в АПК: государственная поддержка, регулирование, практика. https://eec.eaeunion.org › upload › medialibrary

10. Agribusiness digital maturity rating will appear in Russia //https://agro.ru/news/35629-v-rossii-poyavitsya-reiting-cifrovoi-zrelosti-apk

11. Kosnikov S.N., Ashikaryan A.A., Yakimidi A.P. Problems of digitization of agriculture. The paper is on the specialty "Other agricultural sciences". Natural-Humanitarian Studies № 39 (1), 2022 pp. 154-160.

ԳՅՈՒՂԱՏՆՏԵՍՈՒԹՅԱՆ ԹՎԱՅՆԱՑՄԱՆ ԳՈՐԾԸՆԹԱՑԻ ԿԱՏԱՐԵԼԱԳՈՐԾՄԱՆ ՈՒՂԻՆԵՐԸ

Կ.Ա. Ներսիսյան[1], **Ա.Խ. Մարկոսյան**[2], **Ժ.Մ. Միրզոյան**[1]
[1]Շուշիի տեխնոլոգիական համալսարան
[2]«Քաղաքագիտական, իրավագիտական և տնտեսագիտական հետազոտությունների և կանխատեսումների» ՀԿ

Գլոբալ և տարածաշրջանային ռազմաքաղաքական և տնտեսական զարգացումների արդի պայմաններում յուրաքանչյուր երկրի համար մեծ նշանակություն ունի պարենային անվտանգության ապահովման ու վերահաս պարենային ճգնաժամին դիմակայելու համար արդյունավետ միջոցառումների մշակումը։

Ագրոարդյունաբերական համալիրի զարգացման բավարար ներուժ ունի նաև Հայաստանը։ Սակայն բավարար արդյունքների հասնելու համար պահանջվում է նոր տեխնոլոգիաների ներդրում և արտադրական գործընթացների թվայնացում։

Բանալի բառեր. թվայնացում, տեխնոլոգիաներ, գյուղատնտեսություն, ինտեգրված տեղեկատվական միջավայր

ПУТИ СОВЕРШЕНСТВОВАНИЯ ПРОЦЕССА ЦИФРОВИЗАЦИИ СЕЛЬСКОГО ХОЗЯЙСТВА

К.А. Нерсисян[1], А.Х. Маркосян[2], Ж.М. Мирзоян[1]
[1]Шушинский технологический университет
[2]ОО по политологическим, правовым, экономическим исследованиям и прогнозированию

В современных условиях глобальных и региональных военно-политических и экономических событий разработка эффективных мер по обеспечению продовольственной безопасности и противостоянию надвигающемуся продовольственному кризису имеет большое значение для каждой страны.

K.A.Nersisyan, A.Kh.Markosyan, Zh.M.Mirzoyan
WAYS TO IMPROVE THE AGRICULTURAL DIGITIZATION PROCESS

Армения также имеет достаточный потенциал для развития агропромышленного комплекса. Однако, для достижения удовлетворительных результатов требуется внедрение новых технологий и цифровизация производственных процессов.