

J21509-002

O.B. Viunenko \*, M.M. Ruban \*, H.A. Smoliarov \*, I.H. Smoliarov \*,  
A.V. Tolbatov \*, V.A. Tolbatov \*\*, S.V. Tolbatov \*\*\*

## IMPROVING THE INFORMATION SUPPORT OF MANAGEMENT OF AGRICULTURAL ENTERPRISES THROUGH INNOVATIONS

\* Sumy National Agrarian University

\*\* Sumy State University

\*\*\* National Aviation University (Kyiv)

*Abstract.* The article tackles the problems of forming the information support of the management in the agricultural sector, solution of which is suggested on the basis of new information technologies.

*Key words:* agricultural sector, information support, information technologies, innovative activities, monitoring.

**Outline of the problem.** The agricultural enterprises face the tasks of achieving sustainable development, increasing of agricultural production and food security of the population, which can be fulfilled through the modernization of production.

One of the tools for implementing the scientific and technological development of the agricultural sector is innovative approaches that have to be aimed at ensuring management efficiency in order to increase production volume.

The implementation of the innovative approaches determines the solution of topical problems connected with the information support of decision making processes using new information technologies in the agricultural enterprises management.

**Analysis of recent research and publications.** In the conditions of the agricultural market activity market the performance criteria are coming to the fore and the requirements for management methods are increasing. In this regard the need for information on the scientific achievements, innovations and technologies, financial and other resources is significantly increasing. Under present-day conditions management activities require considerable organizational and management changes, a comprehensive study on the establishment and operation of the information support of the sectoral management.

Topical problems of developing the information support of the agricultural sector management have been studied by a number of scientists: M.P. Denysenko, I.V. Kolos, V.M. Zhuk, I.S. Kovalenko, V.M. Koshelev, M.F. Kropyvko, P.T. Sabluk, B.K. Skyrta, S.O. Tyvonchuk, V.V. Kharchenko.

The formation of the theoretical foundations of the information support of the agricultural sector management and their realization have been studied by academician of NAAS M.F. Kropyvko, who dwelled upon [1] the role of the scientific school of the academician of NAAS P.T. Sabluk and the achievements in solving the problems of the agricultural sector management and its information support.

The analysis of the publications shows that the experience of the agricultural sector information support is eventually broadening and improving. Thus in view of the problem under study the fact that new conditions require modern principles of the

organization of agricultural sector information support becomes evident.

The issues of the innovation process organization are tackled in the works of a number of authors [2, 3, 5, 6], in which the issues of forming the information support at various stages of the innovative activity are dwelt upon. This suggests the possibility of structuring information processes, creating the systems of the decision-making information support and highlights the topicality of this problem.

In the publications [1, 4, 5] the certain issues of the innovative activity information support are considered, which necessitates generalizing the experience and elaborating the methodological principles of organizing the innovative activity information support in the agricultural sector at all stages of the decision making.

As a result of the research it should be noted that the current problems of forming the information support of the agricultural sector management on the basis of the new information technologies have not been considered in the publications.

**Aims of the article:** to describe the state of the informatization and form the approach to the developing the information support of the agricultural sector management on the basis of innovations.

Numerous publications are devoted to the problems of improving the information support or the agricultural sector management.

Implementing the information technologies in the agricultural enterprises, the automation of the accounting tasks, solving the optimization tasks of the resource planning, the tasks of zootechnics. The constraints of implementing the information technologies in the agricultural sector in past two decades were the lack of domestic technical means, their high price and the financial situation of the agricultural sector. Academician M.F. Krapivko notes that in early 2000 the discrepancies between the information support and demands of the time arose.

The main shortcomings of the information service system were:

- lack of the information resources, primarily the market and the scientific and technical information for production purposes;
- the dominant information flows were not aimed at servicing the industrial structures and the population;
- the system was based mainly on old paper technologies for collecting, organizing, processing and dissemination of information and did not provide the required efficiency;
- unestablished contacts and exchange of information with international and national research centres, centres of information and business activity;
- lack of one of the basic elements of the information system - reliable digital cartographic materials [6].

By request of the Ministry of Agrarian Policy the National Scientific Center "Institute of Agrarian Economy" and other institutions elaborated the programme for the agricultural sector informatization for 2001-2003 and the programme for the agricultural sector informatization for 2006-2015.

Academician M.F. Krapivko notes that the conceptions of developing the agricultural sector were not approved as state ones but the basic ideas of the programme were used for further developing the information systems of agricultural

enterprises.

In Ukraine the information and consulting service for the agricultural producers is developing, the advisory services have been established in the regions at the departments of agriculture and agricultural higher educational institutions with leading scientists and practitioners involved in their work.

The innovation is the application of new information technologies [7] on the basis of which the technologies of the agriculture, the livestock farming, the organization and the management of production are modernized. Thus geoinformation technologies enable managing production and introducing innovative technologies for the automation of accounting the consumption of fuel, fertilizers, crop protection products etc.

The practice of recent years shows the growing needs of management in timely, reliable and differentiated information. Meeting the information needs is determined not only by the needs of the authorities, but also by the demands of agricultural economic entities and the agricultural scientific community. Nowadays the system of statistical indicators is the basis of information which is necessary for substantiating different solutions aimed at stabilizing agriculture production and overcoming its systemic crisis. It includes quantitative characteristics of phenomena and processes in agriculture (size, structure, dynamics of production and financial resources, the efficiency of production, etc.); materials of The Ministry of Agrarian Policy and Food of Ukraine; analytical reviews of national scientific organizations, publications of leading researchers, etc. The existing information base does not contain absolutely reliable information on the real state of agroindustrial production of regions, does not completely reflect its qualitative and quantitative changes. This fact does not enable to explore the dynamics and identify the tendency of changes of economic, property and production indicators of enterprises of certain agricultural spheres. The implementation of modern monitoring systems may contribute to solving these problems.

The monitoring of the agricultural sector has peculiarities that are associated with the specifics of the village as a socio-territorial subsystem of society and the specifics of the agriculture as a sphere of the economy. Thus the observation scope requires the inclusion of additional areas such as data on land relations, private land ownership, as well as information on local government development [8]. The monitoring in the agricultural sector is aimed at continuous observation of the agricultural sphere in order to identify tendencies leading to a decrease in production efficiency and development of agricultural industry. In general the information system of the agrarian sphere monitoring presupposes solving the following problems: identifying changes occurring in agriculture and the factors that determine them; the comparative analysis of dynamics of the main indicators of the agricultural sector and other sectors of the economy; monitoring of implementing the agricultural development programmes; assessing the effectiveness and completeness of the implementation of laws and regulations on agricultural development in the agricultural sector; studying and sharing the experience on the agricultural sector development; forecasting the processes of development in the social and labor sphere of villages; preparing analytical and information reports on the situation and

tendencies of the agricultural development.

At present there is no common method of monitoring tendencies in region's development, economic stability at the regional level, as well as there is no system of indicators on the basis of which it is possible to adequately assess the current state of the observed object and intervene in time if the system falls into crisis [9].

Analysis of the agricultural sector information support shows that the level of its development is very low; the information flows are insufficiently organized and duplicated; information on the performance of enterprises and farms is submitted to the statistics agencies, tax authorities, agricultural departments. Despite the efforts of researchers and specialists the resources of modern information technologies and existing information support of the managerial decisions does not meet the requirements neither of state and executive bodies nor producers and is often insufficiently reliable and relevant.

Investigation of the innovative activities, main decision making stages and tasks shows that the innovation processes require the variety of information. This information is formed by multiple sources internal and external to a company and requires the use of various algorithms and methods for their implementation.

Peculiarities of the innovative activity in the agricultural sector determine the fact that its efficiency depends on the management system which depends on the quality of the decision making information support. This enables defining the components of the agricultural enterprises' innovative activity: scientific and technical, industrial (technological), organizational, economic, legal, investment components.

Activization of the innovative activities requires and results in improvement of business management based on the appropriate innovations. It is proved by the fact that there is a necessity to improve the information support of the management processes of an enterprise, especially in the sphere of its innovative activity.

The components of the innovative activity information support are mainly unattainable for enterprises due to various sources of forming. It limits the decision making process in the management of agricultural enterprises' innovative activity. As a result, there are problems connected with the implementing innovations in a certain enterprise, which is not possible to carry out by personnel and requires the involvement of invited specialists.

These problems may be solved through creating centers for the innovative activity support. The centers should provide entities with scientific-consulting and information services in implementing the profitable management methods. At the same time computer and telecommunication equipment and information technologies for the decision making support should be widely used.

As noted by researchers an important aspect of scientific consulting and information services for agricultural producers is the organization of the infrastructure for disseminating the agrarian scientific attainments.

Conducted research on the informatization of the agricultural sector shows that there are a number of problems of forming the information environment in agricultural sphere.

The main objective of forming the information environment of the agricultural

sector is the integration of all components aimed at optimizing the information resources from various sources: government institutions, local governments, research institutions, educational establishments, trade unions and associations.

**Conclusions.** The problem of improving information support of the agricultural production management system in a market economy is becoming more urgent. Creating the information environment of the agricultural sector functioning is a necessary factor in the efficiency of the entire industry and separate companies. It enables not only accumulating the information resources of required extent but also significant reducing of the total extent of each possible source.

The innovation in this process is the use of new information technologies in the agricultural production on the basis of which the production efficiency increases, technologies of the agriculture and the livestock farming are upgraded, the management organization improves.

#### REFERENCES:

1. Kropyvko M.F. Zdobutky naukovoyi shkoly akademika NAAN P.T. Sabluka z pytan upravlinnya APK ta jogo informacijnogo zabezpechennya v rynkovyx umovax / M.F. Kropyvko / Ekonomika APK. - №7- 2011. – S. 161-168.
2. Bagrova I.V., Getman O.O. Udoskonalennya metody ky ocinky efektyvnosti innovacijnyx proektiv. / Zbirnyk nakovyx prac DonNTU. Seriya: ekonomichna Vypusk 82 - 2004 s.72-80.
3. Ilyashenko S.M. Upravlinnya innovacijnym rozvytkom: problemy, koncepciyi, metody: Navchalnyj posibnyk.- Sumy VTD "Univertsitet ska knyga", 2003 -278 s.
4. Kovalenko O.M. Systema organizaciyi aktualnogo informacijnogo zabezpechennya na pidpryemstvi. / Materialy konferenciyi // Redkol.: P.G. Kopitko (vidp)red.) ta in.- Uman. 2007. – S.201-202.
5. Kolosov I.A., Kolesnyk Yu.V., Nayandyana O.S, Sharko M.V. Informacyonnoe obespechenye ynnovacyonnoj deyatel'nosti na predpryaty // Ekonomika, finansy, pravo. - № 7 -2007 s.6-11.
6. Moroz O.O. Problemy i perspekty vy investycijno-innovacijnogo rozvytku agrarnyx pidpryemstv./ Zbirnyk nakovyx prac DonNTU.Seriya: ekonomichna Vypusk 80 - 2004 s.149-156.
7. Maznyev G.Ye. Geoinformacijni tehnologiyi v agrarnomu vyrobnyctvi / Maznyev G.Ye. / Ekonomika APK - №4- 2011. – S. 130-136.
8. V'yunenko O.B., Tolbatov A.V., Agadzhanova S.V., Tolbatov V.A., Tolbatov S.V. Model virtual'nogo kognityvni centru yak intelektual'noyi IT systemy dlya system monitoryngu agropromyslovyx kompleksiv / Mizhnarodnyj faxovyj zhurnal "Vy'miryvalna ta obchyslyvalna texnika v tehnologichnyx procesax" №3. – 2015. – S.108-112.
9. Maxacheva Z.M. Organyzacyi monytoryngha regonal'nogo agropromyshlennogo kompleksa v uslovyax rynochnoj ekonomiky / Regonal'nye problemy preobrazovanya ekonomiky № 1, 2009, s. 118.

Рецензент: д.е.н., проф. Чупис А.В.

Статья подготовлена в рамках Программы НИР: "Разработка средств информационной поддержки инновационной деятельности в АПК региона".

Статья отправлена: 18.09.2015 г.

© О.В. Viunenko, М.М. Ruban, Н.А. Smoliarov, I.H. Smoliarov,  
A.V. Tolbatov, V.A. Tolbatov, S.V. Tolbatov