Trakia Journal of Sciences, No 2, pp 187-189, 2024

Available online at:
https://trakia-uni.bg

ISSN 1313-3551 (online) doi:10.15547/tjs.2024.02.012

Mini Review

DEVELOPMENT OF THE AGRICULTURAL EDUCATION SYSTEM IN THE CONTEXT OF INNOVATIVE AND TECHNOLOGICAL FOOD ECONOMY PROVISIONNING

D. Petkov*

"St. George Pobedonosets" Professional College of Guarding and Security, Stara Zagora, Bulgaria

ABSTRACT

The text presents the author's perspective on problems of the food economy sector in the context of innovations and technological transformations. The role and importance of food economy, innovative knowledge and human capital with regard to the smooth and efficient functioning of the agricultural facility, as well as current problems of technological disproportion in food economy related industries' development have been outlined. The vectors for the formation of a target agricultural education model as a factor of the innovative and creative development of the food economy both at the state and regional level, are determined. Global economic history is characterized with the mutual relationship of world economic development by two basic factors - population growth, and the technical and accelerated development of modern technical and technological transformations.

Key words: food economy, agriculture, agricultural education, knowledge, human capital, innovations, technologies, development.

Technical and technological innovations play a crucial role in modern social development by stretching the limits of economic achievements. The evolution process is characterized with a steady trend of cross-culturalism of education, science and technology (the so-called *invisible factors*) in economic growth. Simultaneously, the increased intensification of knowledge transformation beyond the means of production is becoming a priority of global importance. The assertion that only knowledge can create a competitive food economy, capable of ensuring a high level and quality of life for the population, is already an objective reality. The dissemination of knowledge based on information technologies is a primary factor in the formation of social utility, understood not only as a substance, embodied in means of production, but also as a major food resource.

According to economic research studies, physical capital constitutes 30.0% of the economic growth factors, whereas 70.0% of GDP increase relates to the absolute (general) factors, such as intellectual capacity and its manifestation in various forms. The educational level of economically developed countries provides about one third of the gross domestic product growth, and the intellectual social development attains the level of program requirements to become a social indicator of its status. Today, science recognizes that ensuring rapid growth of labour costs will allow acceleration of economic reforms. In this way, optimum environment is created to realize the technical and technological production capacities. On this basis, optimum opportunities are created to provide a real impact on the development of research and technical progress and on increasing the effectiveness and efficiency of labour.

The awareness about the conceptual position promotes the development of guidelines for the activation of innovative and technological activities based on reliable and efficient mechanisms for hiring of staff for these purposes. Every year, the economic growth becomes more and more dependent on the

***Correspondence to:** *Dragomir Petkov, "St. George Pobedonosets" Professional College of Guarding and Security, Stara Zagora, Bulgaria, Mobile: +359 888 111 449 / +359 898 754 085, e-mail: ferrotehgroup@abv.bg*

ability to obtain and implement new knowledge. About 90.0% of the human knowledge has been acquired in the last 30 years. Knowledge, based on modern information and intellectual technologies, has become the main resource for development. These technologies tackle the problem of limited resources and practically open new horizons for increasing labour performance. The principles of modern intellectual food security rest on this basis (1).

The accumulation and dissemination of new knowledge in 1950-1962 has increased the national income of the United States of America (USA) by 38.0%. From 1973 to 1985, the gross national product (GNP) of industrialized countries increased by 32.0% and energy consumption by 5.0%. Between 1975 and 1987 alone, with GDP increase of more than 25.0%, American agriculture reduced energy consumption 1.65 times. Thus, the role of knowledge in economic development goes beyond the importance of production means and natural resources. Knowledge economy, however, can be created only with professionally competent human potential. According to the World Bank, the physical capital in modern economies is responsible for 16.0% of the total wealth of each country, and natural capital, respectively - 20.0%. In this regard, intellectual capital makes 64.0%. In countries such as the Federal Republic of Germany and Japan, the share of human capital, especially that of intellectual capital, accounts for up to 80.0% of national wealth. Knowledge economy creates, disseminates and uses knowledge to ensure its own growth and competitiveness; this is especially true for intellectual food economy, which not only uses various forms of knowledge, but also produces it in the form of high-tech and highly skilled scientific food products. Nowadays, values are created by improving productivity based on the intellectualization of the economy.

The post-industrial society is formed under the influence of technological changes through the use of innovations and implementation of knowledge in practice. Concurrently, it regulates the directions of their progress. The concept of evaluating the efficiency of food economy technologies and of agro-technological order level; of criterion/variant concept of food technologies' selection and combination enables the acceleration of technological development and stabilize local agricultural enterprises. Increasing the efficiency of utilization of the intellectual potential and directing its activity on the innovative path of development requires the provision and implementation of an operating model of agricultural education. The target model of agricultural education is characterized with the following fundamental differences compared to the current situation:

– change from the „cradle of talents" model to the model of an environment where competences are developed and knowledge and skills are disseminated, together with an expansion of the narrow professional framework;

– turning the system of agricultural education into a tool for the intellectualization of production, including the increase of the general level of education of employees from the agricultural sector;

– change in the functional role, by moving from a function of resource provision of employees in the agricultural sectors to the creation of conditions for the development of the agro-industrial complex;

– implementation of technological renovation and increase of labour productivity;

– expansion of the orientation of the educational system from mainly agricultural sectors, towards other structures of the agro-industrial complex, including their integration and common goal setting within the framework of the educational policy;

– a complete reorientation of the agricultural education system: targeting food products with high added value, instead of the intensive growth of the absolute indicators of production.

Based on the above, it can be affirmed that the general feature of the target model of the agricultural education system is the formation of an environment for human capital reproduction. That includes the entity of knowledge, skills and abilities of an individual, the increase of their productivity and the efficiency of the production process, leading to better individual well-being, and hence improving the national well-being of the state.

First of all, the choice of human capital development as the primary direction for the functioning of food economy is due to the fact that the traditionally understood concept of labour resource is characterized with a high degree of exhaustion. Limited resources necessitate seeking new sources of growth,

which cannot be achieved by increasing the units of labour employed in agricultural production. Second, production becomes more intensive based on modern knowledge and functional skills. Competitiveness implies the need for a constantly maintained level of competence not only for performing a specific production function, but also for managing complex production complexes, producing technological innovations, qualitative changes and effective social communication. The agricultural education system should become a source of food economy development through a model of intensive and innovative, rather than extensive development. This implies the formation of conditions for the sustainable development of planned recruitment in accordance with the development of human capital, as well as strengthening the focus and content of education and scientific research on the tasks of food security. The new role of agrarian universities is not only to prepare specialists for large and medium-sized producers of agricultural products, but also to provide personnel along the entire chain in agriculture and animal husbandry - from researchers in the field of genetics to specialists in the field of logistics, storage and the distribution of food products. Therefore, people who understand the entire process of functioning of the agrarian complex are needed. Ultimately, the agricultural education system will ensure the transition of the graduate from a narrow specialist to a proactive innovator of change, forming knowledge, skills and competencies for all functional sectors of the agro-industrial complex. Today, food economy needs a large-scale technological update, which can be carried out in two directions:

– use of the competitive advantages of innovative and creative development;

– implementation of market competition mechanisms;

– implementation of entrepreneurial initiatives, including budget financing-mediated state support;

– provision of interest-free preferential loans and other financial forms and mechanisms;

– implementation of innovations initiated by the entrepreneurial sector of the food economy.

Regardless of the chosen direction (their integral implementation is the optimal solution), solving the problems of activating innovative and creative activities in the agricultural complex requires urgent institutional measures, and above all, the creation of an integral national innovation system with the interaction between scientific organizations, higher education establishments, innovative and manufacturing enterprises.

Leading agricultural universities must take part in the formation and implementation of management decisions at the regional and state level for the development of agricultural branches. The use of their expertise, their inclusion in discussions, as well as their advising support in the field of industrial science and technology, their participation in the development of regional programs for sustainable development, especially in the field of industrial specialization is particularly important in this regard. Such an approach should become essential in the innovative transformation of the agricultural sector of the economy in the Republic of Bulgaria.

REFERENCES

1. Evgeni Sachev, Dobri Yarkov, Teodora Zheleva, Food Security, Academic Publishing House, Trakia University, St. Zagora, 2022, pp. 70-77
2. Ivanov I., Development, competitiveness and priorities of Bulgarian agriculture, Sofia, 2021
3. Ruscheva, D., S. Grozdanova, P. Todorov, Food resources and food security in the Republic of Bulgaria, Sofia, 1999, Gorex Press
4. Sárkány Pál, The Global Food Crisis, Sofia, Zemizdat, 1983
5. Global Environment Outlook. GEO Year Book. 2007. UNEP.