

Т.І. Ключкова, доцент кафедри іноземних мов
А. Шелестюк, студент 2 курсу, факультет агротехнологій та
природокористування

Innovation as an Important Challenge for Ukrainian Agriculture

Innovation is an intrinsic aspect of Ukrainian agriculture. There are significant challenges which must be understood, and tackled urgently, if Ukrainian agriculture is to keep pace with changing economic and environmental conditions.

Agricultural innovation can take many forms: new technologies, such as biotechnology and new machinery; incremental change, such as commercial decisions to plant a new crop or alter a label; and process changes in the ways in which ideas are conceived, developed and deployed. Innovation in agriculture interacts closely with innovation throughout the food chain.

We can distinguish three main theories of innovation as applied to agriculture:

Innovation as a top-down dissemination of new technologies: science and research drive innovation through knowledge transfer to farms.

Innovation as a bottom-up process: local context and farm-level networks shape innovation outcomes.

Innovation as a socio-technical process: farm businesses, agricultural research and development and advisory organizations, retailers, wholesalers, higher education and regulatory bodies shape innovation as an agricultural knowledge and information system.

The innovation system in the agricultural sphere is a range of interacting elements. It is delivered by a range of different institutions, agricultural enterprises, farms and individuals working in collaboration, covering the following:

- the innovation infrastructure: strengthening the innovation organizations and firms, experimental-production enterprises, advisory services, small innovative enterprises in the priority sectors of agriculture;
- the knowledge base comprises of a range of organizations providing education, training and research in the agrarian sector;
- the business community engaged in innovation across the economy and agriculture and bodies supporting the commercialization of innovation;
- the range of activities that we have in place, working with partners across the innovation landscape, to support international collaboration and investment in innovation, given strong internationally connected research and development base.

It should be noted that the development of innovation processes in the agriculture has such priorities as:

- Technical and technological equipment of agricultural production;
- Implementation of energy and resource-saving technologies in the process of production, storage and recycling of the agricultural production;
- Restoration of soil fertility, prevention of soil degradation;

- Organic production in agriculture;
- Present day system of information and infrastructure support for innovation activity in agriculture;
- Development of state innovation policy and strategy on federal and regional level targeted on the formation of advanced technological structures;
- Formation of organizational and economic mechanism of functioning of the agriculture on the innovational level;
- Strengthening of the role of state organizations in the activation of innovation activity;
- Development of region and municipal innovation programs of agricultural development;
- Improvement of the training system for personnel in the innovation activity, which provides an increase in the innovation activity of organizations and commercialization of research results.

Among the advantages of introducing innovation in the agricultural sector are the development of healthier, safer and more nutritious food for human and animal consumption (e.g. through the development of genetically modified seeds and crops), new breeding techniques, and fuel for industrial use. Innovation is the main driver of productivity growth in the agricultural field. Agricultural innovation has the potential to increase the productivity and adaptability of crops, diversify the variety of agricultural crops, enhance the nutritional value of food, feed increasing farm animal populations, and provide fuel for a growing range of industrial uses without depleting available land, water and biodiversity resources.

One of the most remarkable advances in agricultural innovation concerns the transfer of beneficial traits into many agricultural crops that would otherwise be afflicted with problems such as disease, drought intolerance and pests. By incorporating resistance to these problems into seed varieties, crops can provide higher yields while also being less dependent on chemicals and fertilizers, which is specifically beneficial for farmers in developing countries who do not have access to, or cannot afford, chemical products. It has been argued that this part of agricultural innovation can make an important contribution towards combating poverty, malnutrition, food insecurity and diseases.

In general, innovation is a great challenge which makes agriculture the fastest-growing sector of the Ukrainian economy.