Information Horizons: AMERICAN Journal of Library and Information Science Innovation
Volume 02, Issue 01, 2024 ISSN (E): 2993-2777

ECONOMIC EFFICIENCY CAN BE ACHIEVED THROUGH BIOFARMING

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Annotatsiya:
Ushbu maqolada biodehqonchilikning samaradorligi ko‘rib chiqildi. Shuningdek, oziq-ovqat xavfsizligini ta’minlash, raqamlashtirish hamda mahsulotlar yetishtirish texnologiyalari bo‘yicha tahliliy ma’lumotlar, xalqaro tajriba, muammolar, shu jumladan, ilm-fan va zamonaviy yondashuvlar imkoniyatlari ko‘rib chiqildi.

Аннотация:
В данной статье была рассмотрена эффективность органического земледелия. Также рассмотрены аналитические данные по международному опыту, проблем, в том числе возможностям для науки и современные подходы в сфере пищевой безопасности, цифровизации и технологий производства.

Abstract:
This article examined the effectiveness of organic farming. Moreover, analytical data on international experience, problems, including opportunities for science and modern approaches in the field of food safety, digitalization and production technologies are considered.

Kalit so‘zlar:
Global iqlim o‘zgarishi, oziq-ovqat xavfsizligi, biodehqonchilik, tuproq unumdorligi, innovatsiya yondoshuvlar va iqtisodiy tahlillar.

Ключевые слова:
Глобальное изменение климата, продовольственная безопасность, биоземледелие, плодородие почв, инновационные подходы и экономический анализ.

Keywords:
Global climate change, food security, bio-farming, soil fertility, innovation approaches and economic analysis.

1. INTRODUCTION.

In Uzbekistan, attention is being paid to the use of existing opportunities to activate innovations in all areas, including agriculture. By 2050, the world's population will reach 9.7 billion. is expected to arrive. This causes many global problems on a global scale. One of these problems is the deprivation of the right to adequate food and seriously threatens the right of every person to be free from hunger.At the World Food Summit held in 1974, the category "Food Security" was proposed. Food security has risen to a political level internationally. So sustainable provision of food security depends on economic, social and political development.

According to the UN, the population of the earth is increasing according to "Geometric progression", unfortunately, their needs are being met according to "Arithmetic progression". Currently, more than 815 million people are hungry on earth, and by 2050, this number is expected to reach 2 billion people. 12.9 percent of these indicators correspond to developing countries.

Diversification of production in the agricultural sector, further improvement of land and water

relations, creation of modern agribusiness environment and high added value chain, wide introduction of market mechanisms and information and communication technologies in the sector, effective use of scientific achievements, as well as further increase of personnel potential necessary.As we all know, there are opportunities to grow livestock, poultry, fish and bees by installing vertical greenhouses and small hydroponic structures to get multiple harvests of new productive fruits and vegetables, sugar, medicinal and nutritious varieties created by our local scientists.

In the field of agriculture, providing methodical support to household and homestead land owners on disease control, feeding and maintenance, conducting pilot studies, providing necessary tools (for example, pesticides, microfertilizers, biostimulants, vitamins, medicines and vaccines) in cases of need. it is advisable to use effective methods based on science.

2. ANALYSIS OF LITERATURE ON THE SUBJECT.

- Comparative analysis of advanced foreign experience of increasing agricultural competitiveness (Ochilov Nazrillo Faizilloevich, basic doctoral student of Bukhara State University);

The economic policy aimed at increasing productivity in agriculture, using widely used methods in world practice, protecting the country's domestic market and food safety, and the entry of product manufacturers into the foreign market has been analyzed.

- Agrarian economic reforms in Uzbekistan: achievements and their solutions (Tashkent-2006.-39 p.);

Processing of cultivated crops, regulation of export opportunities, market relations based on the interests of the country, management, economic security and development of competition, bankruptcy, stock exchange, and contractual relations are explained.

- Monograph "Plant nutrition and protection from pests" (ToshDAU B.Q. Mukhammadiev).

Organic, mineral in obtaining high and quality crops from plants

and methods of effective use of biological fertilizers, as well as scientific research, results of experiments gained in the field, and science-based materials are collected.

- 2019 of the President of the Republic of Uzbekistan Decree No. PF-5853 dated October 23 "On approval of the strategy of agricultural development of the Republic of Uzbekistan for 2020-2030".

Improvement of the state management system in the field of decree, land and effective use of water resources, wide attraction of investments in the field, further increase of personnel potential, proper organization of market mechanisms and wide introduction of information and communication technologies, as well as effective use of scientific achievements, are defined as priorities.

- Monograph "Plant nutrition and protection from pests" (B.Q. Mukhammadiev, ToshDAU).

The methods of effective use of organic, mineral and biological fertilizers in the cultivation of high and quality crops from agricultural crops, as well as the protection of plants from pests, as well as the results of scientific research and best practices are described.

3. RESEARCH METHODOLOGY.

Taking science to a new level in the context of global climate change, supporting innovative approaches, including studying statistical data of existing approaches to the development of bio-

farming, digitization, economic comparison and analysis, logical thinking, scientific abstraction, grouping of information, analysis-synthesis, induction and deduction methods are widely used.

To achieve the stability of food supply in our country on the basis of modern approaches, conducting research and development works on the cultivation of new high-yielding agricultural crops and the development of seed production, ensuring their implementation, studying the composition of the soil, protecting ecology and the environment, wide use of water-saving technologies, as well as specific proposals and opinions on the improvement of legislative documents are given.

4. DISCUSSION OF ANALYSIS AND RESULTS.

Climate change is one of the most widespread global problems, and as a result, the scale of problems is expanding, especially the food crisis is worrisome. Meanwhile, maintaining a science-based system that links agricultural research, education, and information-advisory services, as well as the development of information dissemination, remains a challenge.

In particular, obstacles encountered in the interaction between science and production significantly limit the practical application of the results of state-funded scientific research. For example, the productivity of local varieties of agricultural crops is low and does not meet the requirements related to export. There is a high demand for high-yielding varieties of agricultural crops that are expensive and adapted to local (climate) conditions. In addition, developing recommendations on chemical and organic fertilizers that can be used based on scientific analyzes of soil fertility, its chemical and biological properties, implementing the use of effective drugs to combat various plant diseases and insects, using mineral and organic fertilizers to further increase productivity, the need for systematic complex measures on the use of water and resource-saving technologies in plant care is increasing.

In the last 7 years, serious and effective measures have been taken for the development of agriculture in Uzbekistan and the wide introduction of innovative agro-technologies. Innovative developments solve problems in the region and create new opportunities. These processes require technology and innovation used in other countries of the world. It is a unique feature that the methods and mechanisms of innovative development correspond not only to the principles of the national economy, but also to the principles of the modern market.

For example, on a 10-acre farm, 4 cherries, apples, pomegranates and lemons should be grown under the wall, 2 times between rows, strawberries or greens planted in a 1-acre greenhouse, and 2 dairy cows, 50 chickens, small 90 million at the expense of hydroponics and 2 beekeeping projects. you can get profit up to soum. It is desirable to study innovative activities and processes in infrastructure networks serving agriculture, critically and analytically apply and improve theories in practice, as well as manage all service infrastructures as objects of innovative development.

Today, solutions to urgent issues such as creating, improving, and ensuring high productivity and environmental safety of alternative farming methods are being sought. Therefore, it is necessary to develop high productivity by enriching plants with sufficient (necessary) nutrients for their growth and development by infusing effective microorganisms into the soil. Bio-farming can help with this. We must admit that Uzbek scientists have created technologies for the use of new ecologically safe bacterial fertilizers and biological preparations that increase soil fertility, the yield of agricultural crops, and the quality of agricultural products.

In biofarming, economic efficiency is high in new directions of farming using the biological properties of organisms and microorganisms as well as the natural compounds formed. Conservation of soil

fertility, increase of productivity, protection of plants, ecological and ecological-genetic principles have been scientifically proven. Soil analysis is one of the important processes in agriculture. This plays a key role in increasing the efficiency of land areas. Through soil analysis, it is possible to get complete information about the nutrients in the soil. Plants need 17 essential nutrients to grow and develop. Among these, substances such as nitrogen, phosphorus and potassium are necessary, and the requirements for these substances vary according to the type of plants. For example, in the research of the German scientist Justus von Liebig, it was noted that if one of the nutrients necessary for the plant is lacking, it affects the growth of the plant even if all other important nutrients are in abundance. Below we consider the positive and negative factors affecting the development of the agricultural sector based on new approaches.

Negative factors:

- funds allocated by the state for financing research institutes and higher education institutions are limited;
- loans allocated for innovations are at a high rate;
- the risk of innovative processes in the field is high;
- producers of agricultural products have not established sufficient cooperative relations with the field of science;
- those engaged in innovative activities are not sufficiently financially motivated;
- scientific and research developments in the field are not sufficiently mastered.

Positive factors:

- natural resources are available;
- business entities based on market relations are developed;
- sufficient scientific potential;
- the domestic food market is capacious;
- there are opportunities for the production of ecologically safe, natural food products.

Another problem in agriculture is chemicalization.

Chemical production refers to chemical products and artificial materials, as well as the extensive use of chemical methods. Today, as a result of chemicalization, mechanization and land reclamation, chemical and physical loads on components, the agricultural landscape has grown exponentially. However, as a result of chemicalization, nitrogen, phosphorus fertilizers and pesticides (seed protection, herbicides, fungicides, insecticides, chemical growth stimulants and pollinators) changed the composition of the soil and led to the activation of harmful microflora.

first of all, soil properties (structure, water permeability and aeration) decreased the number of mobile forms of nitrogen, phosphorus, potassium and macro-microelements;

secondly, as a result of the decrease in soil fertility, the development of pathogenic microflora increases the susceptibility of plants to various diseases;

thirdly, the development of aerial parts of plants, excessive formation of roots and disruption of metabolic processes lead to a decrease in yield and the quality of products worsened due to the accumulation of nitrites.

fourthly, the accumulation of chemicals in the soil has damaged food products and the environment, as well as groundwater, plant and animal products;

fifthly, As a result of the imbalance in the microflora of the gastrointestinal tract in living organisms,

many diseases (gastritis, gastric and duodenal ulcers, liver damage, rheumatoid arthritis, joint damage, urolithiasis, bronchial asthma, dermatitis, allergic, oncological and other diseases) appear came.

Thus, chemicalization changed the self-regulating properties of nature. It weakened the organism of plants, animals and people. Now, in agriculture, instead of old technologies, we should gradually use new innovative biotechnologies to provide environmental protection in the biosphere, and widely use the mechanisms for solving energy and food problems. In order to "get out of the situation", if we do not develop microorganisms that perform all modern ecosystem functions through modern ecosystems, paying attention to soil health, the composition of beneficial soil microflora will change, and the disruption of the functions of important macro and micro elements will lead to degradation, erosion, phosphatization, salinization and desertification.As a result, greenhouse gases such as carbon dioxide (CO2), nitrogen oxides (N2O) and methane are released from the soil into the atmosphere, which is a strong driver of climate change.

The introduction of innovations in agriculture should first of all be based on the concept of "Smart Agriculture", which allows for the rational use of available land, water and other natural resources. In order to introduce modern forms of production, automation, increase productivity and improve economic indicators, as well as to ensure food safety, it is first necessary to introduce innovative ideas, development and technologies of information services.

Taking this into account, today the Ministry of Agriculture has 12 (E-IJARA, CropAgro, Agrosubsidy, Geoinformation, Akis-telim, Food Reserve, Agrokredit, Agrolizing, AgroPro, Agroplatforma, Register of Technologies), 14 in veterinary (Vis- Planar, Vis-Reestr, Vis-Sayor, Vis-Gharara, Vis-Monitoring, Vis-Hamsa, Vis-Samo, Vis-Billur, Vis-Registon, Vis-Atlas, At License, My-Vis, Vis-Malaka, Vis - Subsidy), 4 (e-Fitouz, Agrokomakchi, Uzagrolab, Locust) information systems were introduced in Quarantine, 4 (Uzagroin and maintenance of equipment) in Agroinspectsiya.

Allotment of land (459 thousand hectares by selection), crop planning (on 3.2 million hectares of land), financing of crop cultivation (grain - 1.6 trillion soums of credit), registration of machinery (320 thousand machinery), issuance of export and import certificates , more than 100 complex processes, such as allocation of 45 types of subsidies, have been completely digitized, going paperless. It is important to note that demanding documents from citizens, bureaucratic and corrupt factors were excluded, and vagrancy was prevented. More than 60 agro-services have been provided in electronic form via the Internet, instead of employees solving the problem.

By taking advantage of the opportunities, higher productivity can be achieved from smart farming technologies by digitizing tillage, maintenance, post-harvest processing, packaging, cleaning, sorting and delivery, as well as reducing water consumption and production costs, crop planning and forecasting.

5. CONCLUSION.

In the words of the President of the Republic of Uzbekistan Sh. Mirziyoyev: "Innovation means the future." If we start building our great future today, we should start it on the basis of innovative ideas and an innovative approach."

It is known from international experience that the social and economic development of countries is related to the trend of innovative development, the use of innovations in business structures, and the systematic implementation of various goal-oriented activities aimed at innovations. As we know, atmospheric air is a component of natural resources and it is the wealth of the nation. Therefore, it is

protected by the state. In such conditions, it is important to study new technologies that protect atmospheric air, their practical application, and wide use of bio-farming to ensure food safety in the conditions of environmental threats in the field.

Development (cooperation) of agriculture in developed countries is carried out at the expense of processing, storage, delivery, sale of products, provision of material, technical and financial services to farmers, as well as integration of agro-industry. In particular, attention is paid to increasing productivity, economic efficiency and competitiveness, organizing food producers and economic entities to use innovations, expanding their capabilities, and improving legislation. Therefore, in the conditions of Uzbekistan, we should take measures to reduce the costs of homestead landowners, farmers and clusters (fuel, fertilizers, chemical preparations, etc.) by giving them to specific points of the cultivated areas, using bio-farming and developing bio-greenhouses.

OFFERS.

1) Support of scientific-research and experimental-constructive developments in the agricultural sector;
2) introduction of tax incentives for clusters and farms that have implemented innovative developments and projects in production practice, including granting loans on preferential terms;
3) Increasing scientific research institutes in order to develop science in the field of food safety;
4) Development of new systems such as automation of processes in seed production, effective use of land and water resources, intelligent agriculture, prediction of crop damage;
5) Creating a system of monitoring and increasing the subsidies allocated to the industry;
6) Development of a modern model for increasing the income of estates and households based on innovative projects;
7) Organization of direct cooperation with the scientific team between the state and private seed-breeding enterprises (based on the contract).

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