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History of the organic movement in Azerbaijan

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Abstract

In contemporary society, sustainable development has become a critical focus, particularly in agricultural land use. The transition to ecological agriculture in Azerbaijan, driven by agrarian reforms, financial constraints, and environmental concerns, has demonstrated significant potential for improving soil fertility and environmental health. Conventional agricultural practices, while yield-focused, have caused environmental degradation, including soil erosion, biodiversity loss, and greenhouse gas emissions. Ecological agriculture, introduced through the efforts of Azerbaijan State Agrarian University (ASAU) and the Ganja Agribusiness Association (GABA), has emerged as a sustainable alternative. Initiatives such as the establishment of laboratories, educational programs, and international collaborations have fostered research, policy development, and widespread adoption of organic farming practices. The enactment of the "Law on Ecological Agriculture" in 2008 marked a pivotal step in institutionalizing ecological agriculture in Azerbaijan. Despite advancements, challenges such as water pollution, inadequate infrastructure, and land degradation persist. Continued research, stakeholder education, and policy refinement are essential to advancing sustainable agricultural practices. Over the past 25 years, the ecological agriculture movement in Azerbaijan has showcased its potential to enhance environmental quality, ensure food security, and improve societal well-being.

Keywords

Sustainable development, ecological agriculture, organic farming, soil fertility, Azerbaijan, sustainable agriculture, agricultural policy, international collaboration.

In contemporary society, the imperative to ensure sustainable development has become a cornerstone of policy and practice, particularly in the realm of agricultural land use. The strategic goal of enhancing land resource efficiency and the critical necessity of soil protection and restoration are fundamental to this endeavor. Global experience over many decades has unequivocally demonstrated that the abandonment of traditional agricultural methods in favor of biological and organic practices significantly improves soil fertility and overall soil health. Protecting the soil and enhancing its quality are thus pivotal principles of organic agriculture.

The conventional methods employed in traditional agriculture exert profound negative impacts on the environment. These methods, predominantly designed to maximize yields,

often disregard the essential balance with natural ecosystems, leading to extensive environmental degradation. This degradation manifests as soil erosion, pollution of water bodies, contamination of soil and air, loss of biodiversity, and increased desertification. Notably, traditional agricultural practices are responsible for over 13% of the global greenhouse gas emissions contributing to climate change.

Following the initiation of agrarian reforms in Azerbaijan, the transition to a novel economic framework and the establishment of land use on diverse legal bases, particularly the prevalence of small-scale and individual land holdings, introduced a series of challenges. These included severe financial constraints, outdated material and technical bases, limited access to both local and international markets, high electricity costs, inadequate advisory and information services for farmers, insufficient modern agricultural technologies, deteriorating irrigation systems, and a lack of supportive infrastructure adhering to global standards. These challenges collectively catalyzed the growth and acceleration of the ecological agriculture movement within the republic.

In this context, the adoption of ecological (biological, organic) farming methods emerged as the most viable solution for farmers to overcome the crisis. This alternative farming culture, which has gained widespread acceptance globally and proven its efficacy over centuries, provided a pathway for sustainable agricultural practices. The situation also galvanized the efforts of a few dedicated non-governmental organizations and individual scientists, who became the vanguards of the ecological agriculture movement in Azerbaijan.

The Azerbaijan State Agrarian University (ASAU) and the Ganja Agribusiness Association (GABA) were instrumental in introducing and advocating for ecological agriculture in Azerbaijan. Established in 1998, this movement emphasized a production system that supports the health of the soil, ecosystems, and human populations. The primary objective of ecological agriculture is to improve the quality of life and foster fair relations by integrating tradition, innovation, and science to protect our shared environment. Efforts to enhance and preserve soil fertility are systematically implemented, with continuous evaluations of the natural capabilities of the landscape to improve environmental and agricultural quality indicators.

By the late 1990s, the necessity of conducting scientific research to advance ecological agriculture in Azerbaijan became evident, driven by the country's varied climate and soil conditions. Research efforts were directed towards practical applications, with results disseminated among farmers, consultants, specialists, and processors. In response to this need, ASAU established the "Ecological Monitoring of Soil and Environment" laboratory in 2004 under the directive of Rector M. Jafarov. Professor Amin Babayev was appointed to lead the laboratory's scientific research program, focusing on soil and plant studies to promote ecological farming in the western and northwestern regions of Azerbaijan. This initiative aimed to provide new land users with recommendations and to develop overarching and practical principles of sustainable agriculture in these regions.

One notable research endeavor involved the "Garatorpag" Ltd. Agricultural enterprise in the Sheki region, which played a significant role in wheat seed production. Under the direction of the former Minister of Agriculture, I. Abbasov, the enterprise tested energy and soil-conserving strip sowing technology. The positive outcomes from this research were subsequently recommended for implementation across the republic. The research findings were presented at national and international conferences and published in leading scientific journals, highlighting the laboratory's contribution to advancing ecological agriculture.

In 2004, ASAU and GABA experts, under the leadership of Professor A. Babayev, developed the draft "Law on Ecological Agriculture." This draft underwent public scrutiny and was eventually discussed by the Agrarian Policy Commission of the National Parliament in April 2007. Professor Babayev actively participated in the drafting and editing process as part of the Working Commission. The law was adopted by the National Parliament in 2008 and came into force with a presidential decree on August 25, 2008. Prior to the law's adoption, the ASAU Scientific Council and the "Monitoring of Soil and Environment" laboratory proposed the establishment of the "Ecological Agriculture" chair. Consequently, the "Chair of Soil Science, Agrochemistry, and Ecological Agriculture" was founded in November 2007, with Professor Babayev appointed as its head. A year later, the "Ecological Agriculture Management" specialty was introduced under the "Economics of Agriculture" faculty at ASAU, endorsed by the Ministry of Education and the Cabinet of Ministers.

These initiatives ushered in significant changes in the scientific and social landscape of ASAU. From 2007 to 2013, the department of "Soil Science, Agrochemistry, and Ecological Agriculture" distinguished itself through its activities. The number of doctoral and dissertation students increased, the department's personnel strength was bolstered with young specialists, and the teaching and methodological base was significantly enhanced. Lecture materials and laboratory exercises were made available online, and several scientific monographs, textbooks, and training materials were published. The ASAU Scientific and Technical Council approved the nationwide implementation of the department's research findings, and a unique "Soil Science and Geology" museum was established.

Training programs tailored to various stakeholders were developed to promote ecological agricultural practices. These programs ranged from short-term courses aimed at raising awareness among farmers to long-term training sessions designed to impart practical knowledge and management skills necessary for eco-farming. Specialized programs were also created for agricultural specialists, public officials, youth, higher education staff, and entrepreneurs, each addressing the specific needs and goals of these groups.

International collaboration played a crucial role in supporting the development of ecological agriculture in Azerbaijan. Partnerships with European universities and international organizations facilitated numerous projects that modernized information databases, provided access to advanced methodologies, and supported farmer education. Notable projects included "Development and Crediting of Ag-

riculture in Azerbaijan" supported by the World Bank, "Farm Management Training and Consulting Service for Farmers" supported by the Eurasia Fund, and various initiatives supported by German and Dutch organizations. These projects significantly contributed to the establishment of a modern framework for ecological agriculture in Azerbaijan.

In line with the presidential decree on additional measures related to the implementation of the "Law on Ecological Agriculture" in 2010, the department developed and presented conceptual proposals for creating a legal basis for ecological agriculture. These proposals were incorporated into the national "Roadmap for Agricultural Production," which prioritized the development of environmentally friendly agricultural practices.

The scientific, practical, and socio-political significance of the department's achievements was widely recognized. In 2010, several department members received awards, and Professor Babayev was honored with the title of "Honored Teacher" by the President of Azerbaijan. He also received the M. Lomonosov Order from the UN Academy of Ecology and Life Safety, and held various prestigious positions and memberships in international organizations.

Over the past 25 years, the founding and development of the organic movement in Azerbaijan have seen significant collaboration with international organizations, facilitated through various international projects and joint initiatives. We have worked closely with our Georgian partners and academic colleagues. Notably, with the support of academician Tengiz Urushadze, several projects were undertaken in conjunction with the Georgian National Academy of Sciences and the Georgian National Agrarian University. Furthermore, with his close assistance and collaboration with German colleagues and partners, we contributed to the establishment of an international scientific publication in Georgia, "Annals of Agrarian Science," where Azerbaijani scientists have published their research. Additionally, I would like to highlight the contributions of the Association of Biological Farms "Elkana," which has played a crucial role in promoting the organic movement throughout the South Caucasus.

Despite these advancements, the organic sector in Azerbaijan faces significant challenges, including water pollution from industrial and household waste, inadequate irrigation infrastructure, air pollution, land degradation, poor waste management, and biodiversity loss. Addressing these issues is critical for the ongoing development of the National Organic Program, which is currently under discussion by state authorities.

The achievements of the ecological agriculture movement in Azerbaijan over the past 25 years demonstrate the potential for sustainable agricultural practices to improve environmental health, enhance soil fertility, and promote the well-being of society. Continued efforts to address existing challenges and expand ecological farming practices will be essential for the future of sustainable agriculture in Azerbaijan.

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