

## **Proposals on ensuring food security and sustainable development of agriculture in Uzbekistan based on the analysis of regional problems and prospects**

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The importance of food security in a country is becoming increasingly important day after day due to the problems which emerge in the world. Food and Agriculture Organization of the United Nations (FAO) notes in its reports that in the world about 1 billion people suffer from lack of food every day [7]. And during the World Summit 2009 in Rome, The Declaration of The Right to Adequate Food was adopted [6]. Specialists highlight the main components of food which can be found in the declaration: availability, affordability and accessibility, and sufficiency. Uzbekistan became a full member of FAO in 2001 and confirmed compliance with all international declarations on human rights. But how do Central Asian countries cope with emerging regional problems and how does the state of Uzbekistan relate to the agro-industrial complex of the country – these are the main questions that many scientists today cannot get an exact answer to. The relevance of this problem is to ensure food security in Uzbekistan in the context of existing regional problems, in particular the problem of water resources, along with sustainable development of the agricultural sector, which has great impact on the society, ecology, and economy of the country. At the same time, unfavorable climatic changes, soil degradation, and increasing water supply problems pose a real threat to the long-term sustainability of the agricultural sector and food security.

Many modern economists note that privatization is a fundamental factor of economic growth. Uzbekistan, after winning independence in 1991, moved to the stage of accelerated development of industry and services. As a result, the share of agriculture in GDP of the country decreased from 37.4% to 24.8% in three decades [8]. It is also worth noting that the agricultural sector employs about 40% of the country's population, so this area is considered as the main instrument in the struggle with stable employment in the country.

FAO, in the context of its core work of overseeing the response to hunger, also identifies areas for improvement in the UN SDGs. The list of indicators and achievements coordinated by the organization includes zero hunger (G-2), gender equality (G-5), clean water and sanitation (G-6), responsible consumption and production (G-12), life below water (G-14), and life on land (G-15). During the study, special attention is paid to clean water and sanitation (G-6), the items of efficient water use and water scarcity [7]. According to the research conducted on Uzbekistan, it was found that 90.6% of the annual amount of freshwater consumption is used for agriculture (which is much higher than in other countries). According to many scientists, water scarcity in the country by 2035 will be 35%. International UN experts point out to a dramatically high level of water use in Uzbekistan, which reaches 169% of available reserves. Such conditions can cause a drop in GDP by 11% according to the World Bank's forecasts [9].

Taking into account the existing regional problems in the country, it is necessary to undertake set actions to maintain sustainable development of the agro-industrial complex:

- to promote and encourage the use of drip irrigation systems that help (to) reduce water consumption by up to 50% and increase crop yields by 20-40%;
- to use innovations developed at Lomonosov Moscow State University to design and construct low-cost water storage structures, as well as to use materials applied to the soil to increase its water-storing capacity, which ensures an increase in crop yields by more than 30%, a twofold reduction in irrigation water, an increase in employee productivity, and a halving of fertilizers applied to the soil;

- to utilize the latest PMM (Polymer Mineral Material) developed by the Research Institute of Mechanics of Moscow State University to increase crop yields and conserve water resources. This material can be produced on the territory of Uzbekistan in significant quantities to reduce the cost of construction of water reservoirs and cultivation of various crops to ensure food security of the country. Application of this material together with information systems on monitoring of water resources management will allow optimal management of available waters, including newly created water reservoirs [5];
- and finally, to implement a wide range of reforms in agriculture and increase the influence of water users' associations in agriculture [1].

These observations should be included in the current legislative framework of the country, for integration into The 2030 Uzbekistan development strategy [4].

Summing up, it can be emphasized that timely comprehensive actions, which take into account all mentioned above emerging problems and which aim to improve the current situation in Uzbekistan, can contribute to the sustainable development of the country and ensure food security.

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