

# Food Supply as the Main Factor of People's Quality of Life

*Kh. F. Batirov*<sup>1,\*</sup>, *E. E. Kobilov*<sup>1</sup>, and *S. A. Aslakhanova*<sup>2</sup>

<sup>1</sup>Samarkand State University, Shohruh Mirzo Street, Samarkand, Uzbekistan

<sup>2</sup>Kadyrov Chechen State University, Sheripova Street, 32, 364024, Grozny, Russia

**Abstract.** The “global (world) food problem” in this study refers to the ability of humanity to fully provide itself with vital food of good quality and in accordance with physiological norms (healthy diet) while maintaining ecological balance (preventing irreversible changes in the human environment). The last condition - the principle of “sustainable development”, was proposed about fifty years ago and underlies almost all modern concepts of the development of civilization. The concept of “healthy diet” (“healthy diet”) is one of the key ones in the analysis of the problem of food supply for the population - as an important criterion in assessing the degree of food availability. In accordance with the definition contained in the materials prepared for the Summit, “healthy diet” (Healthy Diet) - a condition for good health and disease prevention. It is characterized by sufficient (without excess) amount of nutrients, as well as substances that promote health, allows you to avoid the consumption of substances harmful to health. For the purposes of further research, we will define the relationship between the concepts of “healthy diet” and “healthy foods”. The first concept is general, including a balance in essential nutrients, a sufficient amount of the daily diet when using “healthy” (without the content of unhealthy substances) products. Thus, “healthy foods” are part of a “healthy diet”.

## 1 Introduction

It is known that providing the population of any country from the Neolithic era to the present is the most important task. The agriculture of Uzbekistan is one of the most important sectors of the economy and it will play a decisive role for the population in ensuring employment of the population, its well-being, the necessary types of products and the export potential of the Republic [1, p.7-9].

Uzbekistan has favorable natural and climatic conditions that allow growing and obtaining fairly high yields of agricultural crops, organic fruits, vegetables, grapes and others, which are rightfully very popular among the population [2, c.3-5].

It should be emphasized that at present the prices for food products in the world are growing from year to year and, in this regard, providing the population with food comes to the fore in the policy of many states. However, there is a trend of shortages not only of grain and grain products, but of many other types of essential goods.

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\*Corresponding author: [kobilov.1961@mail.ru](mailto:kobilov.1961@mail.ru)

As a result of the population explosion that has taken place in recent decades, the available natural resources suitable for use in food production, primarily land (arable land), per capita, tend to be significantly reduced. This trend, however, is predominantly characteristic of a significant but limited group of countries - mainly among economically underdeveloped countries, whose population, according to some estimates, will amount to half the world's population by 2030. The limited availability of land resources suitable for agricultural production is not an indispensable factor preventing the solution of the food problem at the local level. In many cases (taking into account the agro-climatic potential of the territory) this is possible. The example of a number of countries with a very low level of provision with arable land, but a significant volume of agricultural output, achieved through the all-round intensification of agricultural production, indicates a significant potential for solving the Problem in this direction. The intensification of agricultural production has led to accelerated degradation of the natural resources used. The degree of degradation is much higher in developing countries, which for economic reasons do not have the opportunity to widely use environmental technologies, which has already led to the loss of a significant part of agricultural land. If the situation remains unchanged, this could lead to an ecological catastrophe in many regions of the world. The growing demand for food in the world and their prices stimulate countries that have natural resources suitable for agricultural use to intensively transfer them to economic use. These resources include, first of all, the lands of tropical forests, whose role in maintaining the ecological balance on the planet can hardly be overestimated. The intensification of agricultural production and the improvement of product processing have led to a significant increase in the use of mineral fertilizers, various agricultural chemicals, GMOs, antibiotics, and various growth stimulants for agricultural products. plants and animals, a wide range of additives and preservatives in finished products. Under these conditions, it is not necessary to speak of food products produced using modern technologies as "healthy" in the generally accepted traditional sense of the word. Inequality in economic development between different countries has led to a highly unequal distribution of food production and consumption among them. The external manifestation of this inequality is a kind of polarization of the global food consumer market. On one "pole" - a significant lag of purchasing power demand from the need, on the other - the highest availability of food. The first "pole" is accompanied by massive malnutrition and hunger, the second - overconsumption and significant food losses. The explosive growth of the population of the Earth, which began in the second half of the last century, in the conditions of the unrestrained growth in consumption formed by the capitalist economy, has reached the limit beyond which the planet's ecosystem is no longer able, without irreversible damage to the environment, to meet the needs of the human community as a whole, and food, in particular. The indicator of the ability of the Earth's ecosphere to replenish the natural resources used by modern civilization has reached a critical level and is close to the point of no return. Analyzing the above conclusions, it is easy to see that the factors that determine the Problem, its consequences, possible (at first glance) solutions, often represent a set of contradictory postulates. For example, many experts see the main cause of the Problem in the uncontrolled significant growth of the population, and the inability, as a result, of the Earth's natural resources to provide its inhabitants with sufficient food. Although partly correct, this assumption does not take into account, at the same time, the fact that the volume of agricultural production achieved by many developed countries with a low provision of arable land proves that there is still a significant potential for growth in agricultural output. However, while agreeing with this statement, one cannot ignore the fact that products produced using intensive technologies can no longer be considered "healthy food" in the full and traditional sense of the word. However, comparing the direct and indirect consequences of malnutrition and hunger for billions of people on Earth with the potential health costs of eating these foods, it is clear that the benefits of the second "option" are more than obvious. The list of such

“contradictions” can be continued, and this indicates that the search for ways to solve the Problem, given its complex nature, is a very difficult task.

## 2 Research Methodology

The definitions of food security formulated at the Rome meeting contain indications of the following elements:

1. Physical accessibility of sufficient, safe and nutritious food;
2. Economic accessibility to food of the proper volume and quality, for all social groups of the population;
3. Autonomy and economic independence of the national food system (food independence);
4. Reliability, that is, the ability of the national food system to minimize the impact of seasonal, weather and other fluctuations on the food supply of the population of all regions of the country;
5. Sustainability, which means that the national food system is developing in a mode of expanded reproduction. [5, c.17-19].

In the present study, we will be interested in the perspectives of the “territorial” aspect of the Problem. The following two indicators were chosen as evaluation criteria, which characterize the ability of individual countries to meet the needs of their own population in food, including: 1. At the expense of their own natural resources. The evaluation criterion is the area of arable land per person. All countries in the calculation are divided into six groups - depending on the ratio to the average for the whole world indicator as of 2020. For example, the first group included countries with an indicator of “more than 3.1”. This means that the area of arable land per person in them in 2020 was more than 0.56 ha (0.18 ha x 3.1). 2. Through purchases in the global food market. The evaluation criterion is GDP per capita. In this case, this model calculates its average value for each of the indicated groups. The purpose of the calculations is to assess the degree of ability of the countries of the world, which are included in different groups in terms of land resources, as well as different levels of economic development, to provide their own population in 2030 in the conditions of a predicted growth in its population with sufficient food. At the same time, it is assumed that a high level of GDP per capita makes it possible to provide its own population with food even with a low level of land provision. To rank countries according to this criterion, the calculations were carried out in three stages, including: (1) for all countries; (2) countries with a per capita GDP of less than \$30,000. and (3) less than \$10,000. in year.

## 3 Results and Discussions

In accordance with the actual and forecast parameters given in the calculations, in a number of countries, with an unchanged situation in their economies, by 2030 there will be an aggravation of the situation with the food supply of their own population. According to some estimates, the population of such countries will be up to 50% of the predicted value of the world population. 2) The presence of sufficient natural resources for agricultural production will be typical for countries with a total population of about 10% of the global indicator. Due to the aggravation of the situation in the world agrarian market, these, as well as other countries with developed agriculture, countries from other groups, will become the main beneficiaries of the growth in demand in the world food market. 3) Economically developed countries that do not have sufficient natural resources for self-sufficiency of their population with food, in the absence of global shocks in the world economy, will retain the possibility of importing supplies of agricultural products in sufficient quantities to provide their population with food at a high level. At the same time,

given the growth in demand and limited supply, this situation will exacerbate the situation with food supplies to needy underdeveloped countries. Thus, with the development of the situation in accordance with the proposed scenario, the number of inhabitants of the planet who are beyond the threshold of normal food security will increase markedly. This will be accompanied by a deepening polarization in access to food between different regions of the world. The latter will undoubtedly cause significant migration flows, the consequence of which will obviously be an increase in tension in relations between countries, conflicts over diminishing natural resources used in agricultural production, etc. It seems that such a development of events will not only be a consequence of the “distribution problem” of food, as is often assumed, but more - unresolved tasks for the economic development of individual states, unregulated population growth, poor adaptation of advanced sustainable farming technologies, etc. Before summing up the analysis of the main factors of the Problem, it seems appropriate to note one more of the generalizing assessments of the impact of human economic activity on the Earth’s ecosystems. For an aggregate assessment of the degree of this impact, a number of experts suggest using the Earth Overshoot Day (EOD) indicator. With its help, it is measured by the ratio of the real expenditure of resources by assessing harmful emissions, the rate of deforestation, fishing, depletion (degradation) of soil and water resources, etc., with the ability of the planet’s ecosystem to process excess carbon dioxide, renew forests, replenish animal peace, restore the soil layer on disturbed lands, etc. According to the composition of the parameters taken in the calculation of the DER, it is easy to see that the agri-food sector is one of the most significant sectors of the world economy, affecting its size. We add that the calculation of this indicator is carried out both as a whole - on a global scale, and in the context of individual countries and regions. With all the debatability of the value of DED, as well as the presence of questions about the improvement of the methodology for its calculation, the dynamics of this indicator can serve, in our opinion, as a certain criterion for assessing the degree of load that human activity creates on the Earth’s ecosystem.

## 4 Conclusions

1. Food security is one of the main goals of the agrarian and economic policy of Uzbekistan. The goal is to provide the world with an abundance of essential food commodities.

2. The concept of a healthy lifestyle implies a person’s lifestyle that helps to maintain health and reduce the risk of non-communicable diseases, normalize sleep patterns by controlling behavioral factors. A modern specialist, along with good theoretical and practical training in the chosen type of activity, must have an optimal state of health and high efficiency.

3. On irrigated lands, at least two to three crops of field crops should be obtained based on the use of modern technological methods, in which the yields of field crops will increase sharply.

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