REPUBLIC OF TAJIKISTAN

COUNTRY STRATEGIC REVIEW: FOOD SECURITY AND NUTRITION

INNOVATION DEVELOPMENT CENTRE
REPUBLIC OF TAJIKISTAN

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ABBREVIATIONS

ADB – Asian Development Bank

SAPRT – Statistical Agency under President of the Republic of Tajikistan

WB – World Bank

WHO - World Health Organization

WFP - World Food Programme

WTO - World Trade Organization

Ha - hectare

WHH –Welthungerhilfe

HPP –Hydro power plants

EBRD - European Bank for Reconstruction and Development

MSDSP - Mountain Societies Development Support Programme

NASMB – National Association of Small and Medium Businesses

PO – Public Organizations

NDS – Tajikistan National Development Strategy for the period up to 2030

UNO – United Nations Organization

FS – Food security

UNDP - United Nations Development Programme

MTDP –Medium-Term Development Programme

RT – Republic of Tajikistan

M&E –Monitoring and Evaluation System

CIS - Commonwealth of Independent States

CSRFSN–Country Strategic Review: Food Security and Nutrition

UCA – University of Central Asia

AKF – Aga Khan Foundation

FAO – Food and Agriculture Organization of the United Nations

CDE – Center to Development and Environment

MDG – Millennium Development Goals

SDG – Sustainable Development Goals

UNICEF - United Nations Children's Fund

FOREWORD

The Republic of Tajikistan has committed itself to implementation of the Agenda for Sustainable Development Goals (SDGs) and to assessment and monitoring progress in achieving the goals agreed by the Heads of States and government at the UN Special Meeting in September 2015.

One of the main objectives is the Sustainable Development Goal 2 (SDG 2), which shows the importance of food security and nutrition in the Global Agenda to "eradicate hunger, ensure food security, improve nutrition and promote sustainable agriculture" by 2030.

Coherence between different policy areas is a critical factor to ensure an effective use of interlinkages of SDG-2 with other SDGs, between various sectoral policy measures, and policy interventions at the national and local levels.

The Strategic Review on Food Security and Nutrition in Tajikistan will enable the Government and partners to formulate the measures needed to achieve the SDG 2 (eradicating hunger) in Tajikistan by 2030.

This Review is inclusive, based on the consultative process and provides a comprehensive analysis of the problems faced by Tajikistan in ensuring food security and nutrition, and in achieving SDG 2 by 2030.

The review will identify a basic level for a common understanding of the problems and gaps in food security and nutrition, thereby facilitating the coordination of priority actions needed to eradicate hunger by 2030.

The conclusions and recommendations of the Strategic Review will help to form the future directions and national priorities identified in the development programmes and strategies of Tajikistan, and will contribute to the evaluation of the United Nations Development Assistance Framework (UNDAF).

The results of the Strategic Review will also contribute to the development of plans and programmes for development partners and the UN organizations, including the WFP strategic plan for Tajikistan, and will clarify the role of the private sector, civil society and other actors in helping Tajikistan to achieve progress in eradicating hunger by 2030.

The Report also used information from the Monitoring and Early Warning System in Tajikistan (joint MEDT-UNDP Project) on food security published in the Monthly bulletin "Monitoring and Early Warning in Tajikistan".

The objectives set in the Strategic Review include issues of ensuring comprehensive understanding of the context of food security and improving nutrition in Tajikistan, including strategies, policy measures, programmes, institutional capacities and resource inflows. The important place in the Review is occupied by the identification of development problems and the humanitarian sphere in achieving the eradication of hunger in the context of the implementation of SDG 2 and the role of private sector in achieving the eradication of hunger, including food security and improved nutrition. The special place in the Review is given to the issue of climate change in the context of food security and nutrition, as well as the guidance development for the National Roadmap on the eradication of hunger.

While the Review maintains the primary focus on food security in the context of SDG 2, at the same time, the interdependence of all 17 SDGs shows that the strategic review includes a multidisciplinary approach to measuring food security and nutrition.

CONCLUSIONS AND RECOMMENDATIONS

Economic growth is necessary to ensure sustainable progress in reducing poverty, malnutrition and food security, in general. At the same time, it is important to ensure a comprehensive growth that promotes fair access to food, means and resources.

The effective approach in strengthening food security and ensuring the adequate nutrition of the entire population of Tajikistan requires coordinated policies, programmes and actions in many sectors. The participation of all sectors in providing food security and nutrition is the result of a complex interaction of factors, and one sector cannot meet the challenge. The agriculture, health, social protection and economic development sectors play a supporting role.

Therefore, to strengthen food security and ensure adequate nutrition, the mechanism of inter-agency coordination at governmental level is needed to ensure complementarity and coherence in various sectors for proper planning, adequate choice of priorities in programmes, and effective public investments.

The multidisciplinary, complete and unified approach includes: (a) special actions to identify nutritional problems (e.g., inadequate food consumption and health condition) that need to be implemented through the health sector, and (b) activities to ensure nutrition and food security, which should be carried out through other sectors (for example, agriculture, social services, providing the population with clean drinking water and the providing adequate sanitary conditions) in the context of specific tasks in each sector. Support for the multi-sectoral approach is implemented within the framework of the SUN movement, to which Tajikistan has joined in August 2014.

The relationship between food security, poverty and nutrition is obvious: lower-income households spend less on quality products, choosing cheaper and less nutritious foods. Remittances, dependence on food imports, low export diversification are factors that affect the food system nation-wide.

Economic and agricultural reforms in the country are aimed at reducing poverty, strengthening food security and providing adequate nutrition in the medium and long term, and an effective state social protection system is designed to address health issues, strengthen food security and provide adequate nutrition in households in the short run.

Adequate support to the most vulnerable groups of population, with a focus on rural areas where poverty is concentrated, is important to meet the needs now and in the long term. Helping the extremely poor, as well as the most vulnerable in terms of food security and nutrition, is extremely important for strengthening national human capital, as well as for accelerating inclusive economic growth and social development.

The efforts aimed at increasing productivity of resources, including in agriculture and rural areas, accompanied by infrastructure development, organization and functioning of food markets, are critical for risk management and reducing the scale of hunger and malnutrition.

At the same time, it is necessary to take into account the role of women, to take care of meeting the needs of the short- and long-terms, to support the most vulnerable population and to strengthen the efforts of all stakeholders at all levels.

Women play a crucial role in strengthening food security, health and nutrition in their families, which must be taken into account in the development and implementation of all actions for food security and nutrition through: (i) guaranteed access and control of income and other resources by women; (ii) increase free time for women - to relieve them from part of their duties in order to increase their time for caring for the child - feeding, upbringing, etc.; (iii) awareness of women about adequate nutrition issues; and (iv) greater involvement of women in decision-making processes at all levels.

Education of women is a factor directly related to the adequate nutrition and health of the child. Therefore, girls' access to education is the foundation of food security and nutrition. Women also need to become an elected target group in the implementation of health policy and nutrition - because they have special needs related to their reproductive role, which makes them more vulnerable to malnutrition and micronutrient deficiencies. Maternal health is extremely important for the survival and development of children.

One of the main factors of malnutrition are inadequate practices of breastfeeding and nutrition of infant children, of which only 20% receive diversified and regular food. The lack of micronutrients has a significant negative impact on the health of children and future generations - already now 53% of schoolchildren suffer from iodine deficiency, 28% of children aged 6-59 months have anemia diagnosed. Today, the losses from possible natural disasters in Tajikistan are estimated at the rate of 20% of GDP, with a return of 200 years. This implies the need for more comprehensive measures for climate change adaptation of the country, effective water resources management and reform in agriculture.

Based on the analysis of various aspects of food security and adequate nutrition in the Review, the priorities have been developed, over which it is necessary to work on in the framework of implementation the NDS-2030 and the achievement of SDG2. Among these priorities, there are some actions and activities that can bring results either in the short and medium term or in the long term. However, the results of these actions can be visible anytime.

The main risk factors that could hamper the achievement of SDG-2 and other associated goals by 2030 are the degradation, depletion and overexploitation of natural resources along with the increase in the number of natural disasters.
Climate change is a serious threat to food security in Tajikistan, as the country is highly prone to this and has a relatively low ability to adapt. The World Bank defines Tajikistan as the most vulnerable country in Central Asia.
The predicted increase in temperature will lead to an increased risk of drought due to a higher level of evaporation and early melting of snow, which directly affects the food security in country. The yield of agriculture may drop to 30% by 2100 in some parts of the country, potentially affecting about 2 million people who are food insecure, of which 800,000 are directly at risk of hunger (National Climate Adaptation Strategy Project).
The threat of food security caused by climate change will increase unless measures are taken because more people will live in areas that are highly vulnerable to climate change and extreme weather events. By 2050, the population living in climate-sensitive areas will increase by 77.2% (National Climate Adaptation Strategy. Project).
Agriculture can also suffer from the climate change. Droughts, rain fed lands reduction, decline in yields and production, as well as crop failures and losses in animal husbandry can negatively affect farmers in Tajikistan. Higher evaporation rates may require more water to grow agriculture crops.
Limited access to quality food in consequence of climate change affects one of the most important parameters of life: the nutritional status of population, especially pregnant and lactating women, and children. Today, nutrition indicators in Tajikistan are the worst in Central Asia. The latest surveys indicate that wasting among children is 10% and stunting among children is 26.8%.
Based on this, the main results of the Review can serve as a basis for recommendations aimed at minimizing the effects of climate change on agriculture and food security in the Republic of Tajikistan.
As an additional but important strategic priority of the country should define a climate change mitigation strategy and strengthen the capacity of farmers and the rural population on issues related to climate change, including strategy for mitigation and adaptation to climate change.
The review showed that in the process of climate change factors, it is necessary to diversify agricultural production, introduce innovative approaches, taking into account the provision of minimum environmental impact and land quality, since significant risks to the development of agriculture are associated with long-term global climate change. It is important to take into account the low level of environmental sustainability of agriculture, which is associated with land and water degradation, erosion, rising groundwater levels, and the withdrawal of land from agricultural use.

The Agriculture reform programme (2012-202) is aimed at reducing vulnerability to climate change through the wide application of successful practices based on the principle of participatory management of pastures and forestry, with emphasis on the restoration and protection of natural resources, as well as recycling; promoting sustainable land management and fertilizers usage; promoting methods and technologies for economical water storage; cultivation of local, drought tolerant crops, etc., which directly strengthens the state of food security in the country.

RECOMMENDATIONS

1. *Strengthening / enhancing national capacity to collect, process data and forecast of food security condition in the country:*

- Numerous indicators should be analyzed according to a specific methodology in order to draw a generalized conclusion about the state of food security in the country. At present, such a technique is not available;

- It is necessary to calculate food security indicators not only at the level of the whole country, but also at the level of individual regions. In the regions, it is important to monitor the availability, residual products, access of the population to food, but not to food independence as a compulsive indicator of food security. In this regard, it is useful to develop a methodology for assessing food security in the regions and adjust the range of indicators for monitoring.

2. *Policy support and programme activities to accelerate productivity growth and increase investment in food production:*

- Promoting investment in productivity growth in agriculture and food industry;
- Encouraging the strengthening of value chains and increasing added value in the food industry;
- Supporting human capital development programmes in rural areas through the development of institutional capacity in the agricultural sciences and dehkan farm management.

3. Ensuring food availability growth in consequence of the agricultural productivity growth and processing depth of agricultural products, the awareness of producers about the preferences of consumers.

4. Ensuring the food availability growth by expanding productive employment and creating jobs in sectors with higher added value, emphasis on vulnerable regions; increasing "targeting" of social protection measures with emphasis on ensuring access to nutritious and enriched foods and the diversity of school meals, development of gender equality throughout the chain - education, employment, means of social mobility.

5. Supporting the safety of consumption, including through ensuring the safety monitoring of food produced in the republic and imported to the republic; development of certification system for food products, and formation of the healthy culture consumption.

6. Ensuring the sustainability of food production through strengthening the national capacity to stimulate the growth of agricultural production and industrial entrepreneurship, assessing and managing medium and long-term challenges, including climatic ones.

Project support is important in the following areas:
Block 1. Support the efforts to assess / implement opportunities of the country to submit project proposals and accordingly donor consideration of those project proposals in the context of adaptation and promotion of the SDG at the sectoral level and nutrition. This will potentially expand the basis for mobilizing resources and will increase the contribution of innovative

approaches based on international best practices in achieving medium-term development results towards ensuring food security and nutrition. To increase the monitoring capacity in the implementation of the SDG in this area, efforts will be important to develop the statistical base, the dataset, indicators and aggregated indices. At the same time, investments will be important not only in national statistical systems, household surveys, large data systems, but also in analytical centers that generate assessments for more adequate, full reflection of the situation in food security and nutrition so as to ensure, in general, data to quantitative and qualitative requirements.

Block 2. Problems remain with analytical presentation of the financing system, taking into account the real "points" of vulnerabilities in the land use system. To some extent, certain information about the state of the process of Establishing a National System for Monitoring Land Resources and Assessing Economic Loss from Land Degradation across the country, regions, jamoats and villages remains incomplete and difficult to access for broader expert analysis. Scenario justification for the directions of financial flows in the frame of the general land resources management concept would allow a better assessment of results and needs, identify resources, enhance the coordination of national and international institutions.

Assistance in strengthening the analytical capacity of the country through supporting the development of an open data source, assessing and modelling food security and nutrition. Support the establishment of a system of annual analytical national reports on the diagnosis and inclusiveness of food security and nutrition. Promoting the achievement of "zero hunger" and inclusive growth will be linked with the support of making better decisions.

Block 3. Promoting the development of human capital through the support of public-private partnership in education and health, healthy lifestyles and nutrition.

Block 4. Support to national efforts in the sustainable / efficient use of natural resources, income and opportunities of adaptability to volatile conditions.

1. METHODOLOGY FOR PREPARATION OF THE STRATEGIC REVIEW

Elaboration of the SRFS is based on quantitatively determined *goals of the Strategy*. In order to measure the progress towards these goals, a system of indicators will be used that allows to track the efficiency and effectiveness of policy measures outlined in the Strategy. Key sub-system of SRFS is formed by the *system of collection of data* about the values of indicators of monitoring and other qualitative and quantitative information.

The review of strategic and program development documents, sectoral, industrial and regional development strategies and programs, as well as documents of specialized international organizations in the context of food security and nutrition has been carried out.

Specific elements of methodology (key points) that connected to provision of food security and nutrition:

- Role of individual sectors /areas in provision of food security and nutrition: agriculture, health and social protection.
- Level of involvement of the sectors and fields of the economy and social sphere of the republic in provision of food security and nutrition.
- Possibility of solving the problem with food security and nutrition.
- Orientation to vulnerable groups of population.
- Gender aspects of provision of food security and nutrition.
- Designing a system of monitoring and evaluation for the process and stages of implementation of Review of food security and nutrition.

The Review preparation involved the trip to pilot regions, questionnaires, interviewing and focus group work.

Monitoring of the Review is based on the indicators value for the country as a whole (for comparison) as well as (when possible and necessary), broken down by region, gender and other characteristics.

Log-frame-based approach (LogFrame) helps to clarify the tasks of the SRFS. It also helps to identify expected random linkages in the following sequence of achieving results: inputs, processes, outputs, results and outcomes. It leads to identification of indicators of effectiveness at each stage of the present sequence as well as risks which can hinder implementation of tasks. During the implementation stage, LogFrame is a useful tool for determination of the progress and undertaking corrective measures. This approach does not imply the assumption of simple linear cause-and-effect relations, but analyses the factors that must be achieved.

Effect assessment is a systematic definition of the impact - positive or negative, intentional or not - on individual families, organizations and the environment caused by specific development activities. Effect assessment helped to better understand the extent to which the poor people have been covered by these activities and the magnitude of the effect on human well-being.
The goals and objectives of the consumption block are determined based on the approved Concept of National Food Security of the Republic of Tajikistan. In the capacity of its principal provisions it is necessary to distinguish the following: human health is the main task of the state; foodstuffs must be of high quality; nutrition should solve several problems: satisfaction of physiological needs, health care activities and fulfillment of medicinal purposes; nutrition should be balanced and protect the human body from harmful environmental effects; nutrition should be economically accessible to all segments of the population.
Food security and improved nutrition imply constant readiness of the state and society to prevent and eliminate violations of the system of providing the country and regions with food products related to emergencies at the expense of state reserves.
Based on the formulated requirements and parameters of the food security system operation, the food policy of the Republic of Tajikistan should be developed, the purpose of which is to provide the population with economic and physical accessibility to food products in accordance with physiological norms of nutrition. In this connection, it will be necessary to develop an agrarian policy to ensure the maximum level of self-sufficiency of the republic in those types of foodstuffs where competitive advantages are provided in comparison with other countries.

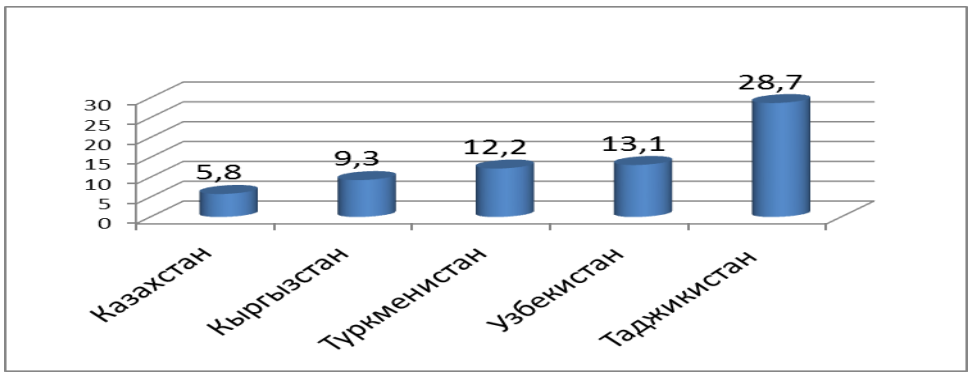
2. BASIC DIRECTIONS AND PRINCIPLES FOR THE ACHIEVEMENT OF FOOD SECURITY

Food security should be considered in the relationship of four blocks: food consumption; food production; formation and distribution of food resources, threats to food security.
Stable economic growth in the period from 2011 to 2017 and increased productivity in agriculture in recent years have allowed a significant poverty reduction in income level in Tajikistan; however, the nutritional status of the population remains low. Tajikistan received 28.7 points in the Global Index of Hunger, having relatively worse indicators among the countries of Central Asia[1].

Diagram 1

Global hunger index in 2017 for Central Asian countries, points

[1] In the Global Hunger Index, countries are ranked on a 100-point scale, where 0 is the best score and 100 is the worst score.



Limited achievements in providing adequate nutrition is underscored that the economic growth alone is not enough to combat malnutrition. Further efforts are needed not only to strengthen and improve activities aimed at combating the immediate causes of malnutrition (food consumption and health), carried out mainly through the health sector, but also efforts to integrate nutrition issues into sector programmes, which are designed to deal with hidden causes of malnutrition.

Strengthening food security and ensuring adequate nutrition in Tajikistan are threatened by the following serious factors:

(i) Strong dependence of households on remittances - due to the difficult economic situation in Russia and restrictive policy with regard to labor migrants;

(ii) High food prices, which continue to grow;

(iii) Greater dependence on food imports;

(iv) Difficult weather conditions and climate change.

Issues of food security and adequate nutrition, certainly, are a priority for the Government of Tajikistan. **To ensure true national independence of the country, it is very important to ensure effective food security, which is defined as one of the Strategic Objectives of National Development Strategy of the Republic of Tajikistan for the period up to 2030, with addition of a very important component - the quality of nutrition.**

Among the recent efforts of the Government of Tajikistan and development partners aimed at strengthening food security and providing adequate nutrition in the country, the following can be identified: National Development Strategy for the period up to 2030, Medium-term Development Programme (2016-2020), Healthy Nutrition and Physical Activity Strategy (2014-2020); obligations of Tajikistan in the International Movement for Scaling Up Nutrition (SUN); and the establishment of executive authority - the Food Security Council. At the present time, analytical studies of various aspects of ensuring food security are also active. Further joint efforts are needed with the involvement of specialists from various sectors - in order to assess opportunities and prospects in agriculture, health care, social protection and economic development, as well as in other spheres, such as providing the population with water and creating adequate sanitation, hygiene, education and trade, strengthening food security and providing adequate nutrition in Tajikistan in the short and long term.

The agriculture development is an advantageous strategy for raising the economy, poverty reduction, strengthening food security and providing adequate nutrition. The share of agriculture in GDP is more than 20%; 20% in total exports, and 35% in total tax receipts; more than half of the country's population work in this sector. Economic growth due to the growth of agriculture should contribute to poverty reduction, rather than through development of other industries - because poverty is concentrated in rural areas, and poor citizens live mainly at the expense of agriculture.

Tajikistan is classified into 13 zones, grouped by main economic activities, agro-ecological parameters and access to markets (Figure 1). Although a number of zones can be attributed to zones of low climatic and food risk, on average all areas have a degree of risk above the average. In each of the regions, the air temperature has increased from 0.5 ° C to 1 ° C, there are no sustainable sources of income, and the majority of the poor depend on remittances and

agricultural production.

Figure 1.

Food Security Risk Assessment and Vulnerability to Climate Change in Tajikistan

Risk in oblast	Food security risk	Vulnerability to climate change
Sughd oblast		
The temperature increased from 0 ° C to + 0.5 ° C Most of the poor depend on remittances Wheat and barley are grown Cotton and food processing plants Animal husbandry is developed	1 high-risk zone; 3 zones with average risk	1 high-risk zone 1 zone with an average risk 2 low risk zones
Risk in oblast	**average**	**average**
Districts of republican subordination		
The income depends on the possibilities of employment, including from agriculture The temperature increased from + 0.5 ° C to + 1 ° C	1 high-risk zone 1 low-risk zone	1 high-risk zone 1 low-risk zone
Risk in oblast	**average**	**average**
Khatlon oblast		
Khatlon HPP as a source of employment Sale of livestock is an important source of income Most of the poor depend on remittances The temperature increased from + 0.5 ° C to + 1 ° C	2 high risk areas 1 zone with an average risk 1 low-risk zone	1 high-risk zone 2 middle risk areas 1 low to medium zone
Risk **oblast**	**high**	**average**
GBAO		
Livestock and plant growing is developed Informal trade is developed Small business develops Great dependence on loans The temperature increased from + 0.5 ° C to + 1 ° C	2 high risk areas 1 low-risk zone	3 zones with average risk
Risk **oblast**	**high**	**average**

Source: Climate Risks and Food Security in Tajikistan: Review of Evidence and Priorities for Adaptation Strategies, WFP, 2017.

The latest data of the Food Security Monitoring in 2017 showed that only 12% of the rural population of Tajikistan have no problems with access to food, 54% have certain difficulties, 28% of rural residents are subject to moderate food security risks, while the remaining 5% do not have access to food in the quantities that are necessary to meet their needs.

This Review is based on the principles specified in the Law of the Republic of Tajikistan "On Food Security". They can be grouped as follows:

- Ensure equal access to the food market of organizations and enterprises, regardless of legal and organizational forms;
- Prevention of reduction in the level of food security at the state level;

- Provision of state support to domestic producers of agricultural products, raw materials and foodstuffs on a competitive basis;
- Programme-target method for the food resources formation;
- Making managerial decisions based on monitoring in order to form and maintain a balance of the domestic food market;
- Assistance in enhancing the role of non-profit, industry and other organizations in the production, supply and processing of agricultural products, raw materials and foodstuffs;
- Openness of information on the state of the food market;
- Full harmonization of requirements for food products;
- Conformity of quality of produced, imported and sold food products to the requirements of the legislation on food safety;
- Formation, updating and replenishment of public resources of food products, regardless of the impact of internal and external factors;
- Organization of effective agricultural production based on targeted use and management of natural resources in order to provide the population with food, and the industry with agricultural raw materials in the amounts necessary for sustainable economic growth and social development of the country.

3. STRATEGIC GUIDELINES AND PROGRAMMES IN THE FIELD OF PROVISION OF FOOD SECURITY AND NUTRITION

We can single out the following **guidelines**, which confirm the commitment of the Government of the country to problem solutions in food security and quality of nutrition:

- **In-depth process of land reform.** Limited access of households to land is an important factor in food insecurity. It is necessary to conduct a transparent and effective process of land reform. A transparent process of land reform should enable low-income communities to have access to large lands for their food production.
- **Research in agriculture field and transfer of inexpensive technologies.** It is necessary to establish a central institute for agricultural research and transfer knowledge to the field. It is necessary to study the models of agricultural research centres.
- **Financing of rural areas.** The role of the government in this sector is to provide a legislative and regulatory framework as well as strengthen capacity to involve the private sector in microfinance institutions. Improvement of rural finance and income generation activities will significantly increase the access of the poor rural population to food.
- **Agricultural diversification.** It is necessary to diversify agricultural production in the country. Tajikistan needs to reconsider the distribution of arable land share of the country between cotton and other crops.
- **Raising the educational level.** Young people and a rapidly growing (2% per year) population is in need of the basic education, but it is necessary to introduce special subjects for managing the economy in the educational system in rural areas in order to stimulate modern farming practices and agro-business.
- **Sales and processing of agricultural products.**

The government needs to assume responsibility for providing supporting infrastructure, such as rural electricity (existing, but requiring rehabilitation, roads and public transport).

- **Rehabilitation and development of physical infrastructure**

Government investments should help restore or build infrastructure such as roads, bridges, electricity and communication systems.

- **Sustainable resource management**

Within the framework of the National Development Strategy for the period up to 2030, the **key priorities** aimed at improving nutrition and ensuring food security have been identified:

- **Improving access to quality nutrition through:**

- Raising public awareness on exclusive breastfeeding of infants;

- Legislative consolidation of the need for iodization of produced and imported salt, inclusion of iron supplements and vitamin A in the package of basic primary health care services;

- Implementation of the School Nutrition Concept and the Scaling Up Nutrition Movement (SUN);

- Implementation of Healthy Nutrition and Physical Activity Strategy including measures to prevent malnutrition, monitor food quality and safety, and ensure the availability of information systems for adequate nutrition.

- Improving access to safe drinking water and improving sanitation and hygiene conditions.

- **Institutional strengthening in the field of drinking water supply, sanitation and hygiene through:**

- Normative and legal consolidation of institutional "spheres of responsibility" and partnership in the process of managing the infrastructure of water supply, sanitation and hygiene;

- Implementation of a number of measures to strengthen drinking water supply, sanitation and hygiene systems by supporting the development of information base, tariffs, training and attracting investments;

- Ensuring progress in the dynamics of construction, rehabilitation of water supply systems, sanitation and hygiene, including (such measures) in the framework of projects;

- Adopting a package of measures to support the development of international cooperation in the field of water supply and sanitation (including in the field of rainwater harvesting technologies, water treatment, efficient water use, application of recycling and reutilization technologies).

- **Improvement of social protection system through:**

- Implementation of tools and mechanisms for monitoring poverty level, targeted interventions for low-income people and needs assessment, including at the local level;

- Establishment and maintenance of a "single window" for registration of beneficiaries and provision of social protection services;

- Taking into account budgetary constraints, by increasing the level of pensions and benefits, while maintaining fiscal sustainability, the ratio of pensions to wages is not below the minimum level of 40%;

- Increasing the targeting of social assistance and social services for socially vulnerable categories of citizens and improving access to them.

A number of strategically important policy documents are implemented in the Republic of Tajikistan, within which progress is being made in the direction of food security:

- *The Agriculture Reform Programme of the Republic of Tajikistan* (2012-2020) is a key comprehensive programme, within which reforms in the agricultural sector are carried out.. This programme identifies 22 specific goals, including: assistance in the cultivation of high-value agricultural crops (export-oriented and aimed at replacing imports with domestic products); expansion of areas for fruit cultivation for export; introduction of alternative mechanisms for financing the agricultural sector; development of diversification/ intensification strategy of the agricultural sector; livestock development; creating an enabling environment and

ensuring food security; ensuring sustainable use / management of natural resources; development of agricultural technologies for adaptation and resistance to climate change; development of seed production and breeding; development and implementation of the integrated package for marketing of agricultural products; development of mechanisms for the rapid introduction / acceptance of scientific achievements in agricultural production; development of the investment plan; assistance in the development of agriculture on the basis of the private sector; restructuring of the Ministry of Agriculture by merging and reviewing existing functional responsibilities; as well as development of the system of social protection measures.

- *Programme for food security (2016-2030),* aimed at stimulating domestic production and reducing the dependence of the national economy on the import of products from abroad. Proceeding from this, the main objective of this programme is to support domestic production over the next 10 years and to meet the domestic production needs of the country's population in bread and bakery products, potatoes, eggs and rice by 90%, in vegetables by 80-90% fruits and berries - by 70-80%, vegetable oil - by 80%, poultry meat - by 40%, milk and dairy products (in terms of milk) - by 50%.

- *The concept of innovative development of the agro-industrial complex of the Republic of Tajikistan (for the period up to 2030,* aimed at creating conditions for the successful development of innovative activities and ensuring the acceleration of scientific and technological progress in all sectors of the agro-industrial complex.

- *Programme for organization and rehabilitation of refrigerators and storage facilities for the storage of agricultural products (2015-2019),* which aims to reduce crop losses and ensure more stable provision of food in the domestic market during the year.

With the assistance of development partners, the Government of Tajikistan promotes both pasture management and farming practices, and promotes the spread of low-cost, climate-resilient agricultural technologies, introduces and implements Food Security Monitoring System (FSMS), Integrated Phase Classification (IPC) for determine the state of Food Security in the regions of the country.
Having said that, medium-term agreements have been concluded with the key development partners, which set out the priorities related to food security and nutrition.
Within the framework of the *United Nations Development Assistance Framework (UNDAF) for Tajikistan (2016 - 2020),* activities are aimed at improving the nutritional status of the population in Tajikistan by ensuring sustainable access to adequate, appropriate and safe food, improving feeding practices for children, improving water supply and sanitation as well as improving access to quality health services. To this end, the UN contribution is related to the following areas: (1) multi-sectoral cooperation between the health, animal health, agriculture and environmental protection sectors; (2) supporting the capacity development of the agricultural producers (small farmers and rural households) to improve agricultural practices and labour efficiency; (3) supporting improved access to basic agricultural services and materials, such as improved seeds; fertilizers; pesticides; machinery and equipment; veterinary services and irrigation systems; (4) supporting the development and diversification of agricultural skills and productive capacity, including improved access to markets; supporting the expansion of services and microfinance for small farmers; (5) supporting the high quality food security and nutrition monitoring system by the Government of Tajikistan in order to ensure the relevance of policies and programmes, and timely response to crises; (6) supporting improved targeted and effective social assistance and social protection, including health services for social groups particularly vulnerable to food insecurity and malnutrition; (7) general and targeted food interventions aimed at treatment and prevention of acute and chronic malnutrition; (8) supporting improved infant / young child nutrition and family-based maternal nutrition; (9) food fortification programme to prevent micronutrient deficiencies; (10) supporting the multi-sectoral approach to nutrition as part of the Scaling-up Nutrition (SUN) Movement; (11) supporting Tajikistan's health system to

improve policies, programmes and services (including health and hygiene promotion) towards improving nutrition.

- *The UN World Food Programme* continues the projects on Long-term Aid and Rehabilitation; development programmes for provision of hot meals for primary school children and tuberculosis patients receiving treatment under the DOTS programme. Potential beneficiaries of food aid are families affected by natural disasters; households with food shortages (selected according to the vulnerability criteria of the WFP); children under the age of 5 suffering from acute malnutrition; patients with tuberculosis receiving treatment under the DOTS programme of the National Center for Tuberculosis Control, primary school children. Within the framework of the project, food for the rehabilitation of production facilities is maintained by a vulnerable group of people in restoring their livelihoods through reconstruction and creation of production facilities that improve food security.
- *The Food and Agriculture Organization of the United Nations (FAO), within the framework of the aspiration to ensure* the guaranteed regular access of the population to high-quality food, necessary for active and healthy living for 2018-2020, identified the three priority support directions for the republic:

Priority direction 1: Within the framework of ensuring food security, the focus is on strengthening the analytical and technical capacity of selected ministries officials, agencies and institutions to review and formulate policies for national food security; creation of favorable institutional environment for reform implementation (review of the institutional structure of the Ministry of Agriculture at the national and local level and related functions, support for capacity building and development of infrastructure for monitoring, testing, control and inspection based on risk assessment and management in food security and nutrition.

Priority direction 2: Sustainable management of natural resources and increased resilience to climate change through - *creating an enabling environment for the development of stimulative policies* (for example, policies related to land management, environment, rangeland management, irrigation, forest management), along with strategies and investment programmes to combat land degradation (combating salinization, soil erosion and prevention, drought management), with an emphasis on the landscape approach and taking into account gender equality aspects; *support in the development of innovative and diversified approaches and methods of gender-sensitive practices* in individual production landscapes, for sustainable and integrated management of natural resources including forests, water and land resources, and enhance resilience to climate change.

Priority direction 3: Sustainable agricultural productivity and competitiveness of agricultural products.

- *The Asian Development Bank, within the framework of the operational programme for 2015-2018* in the area of food security, focuses on supporting the development of infrastructure - transport projects that reduce the transportation expenses of agricultural products to markets, providing access to food markets; rehabilitation of irrigation systems, support to water resources management reforms, improved farm management and water efficiency.
- *The World Bank*, in the framework of the assistance strategy to the country for 2015-2018 in the direction of increasing the productivity of the agricultural sector, supports the commercialization of agriculture, land registration and cadastral system, improving the efficiency of irrigation systems, increasing investment in agro-industrial production and retail trading of food.
- *The Japanese International Cooperation Agency (JICA)* whereas the Khatlon region has a large population below the poverty line, attaches great importance to provision of assistance in the agricultural sector and other relevant areas in the Khatlon region of the Republic of Tajikistan. This direction is connected not only with the aspiration to reduce the economic difference between rural and urban areas, but also to promote social stability in the Khatlon region, which borders on Afghanistan.

4. POSITION OF INDIVIDUAL SECTORS INFLUENCING THE STATUS OF FOOD SECURITY

4.1. Agriculture

Agriculture due to the inertia of natural biological processes is a buffer that supports development of the country in the crisis years - when the GDP growth index decreases, the share of agriculture in GDP and the share of employed in agriculture grows, if slowed, insignificantly, as the economy in whole. This sector has a significant impact on food security, employment levels and rural development.

Improving agricultural infrastructure is one of the key aspects of development for ensuring food security and good employment.

Table 1.

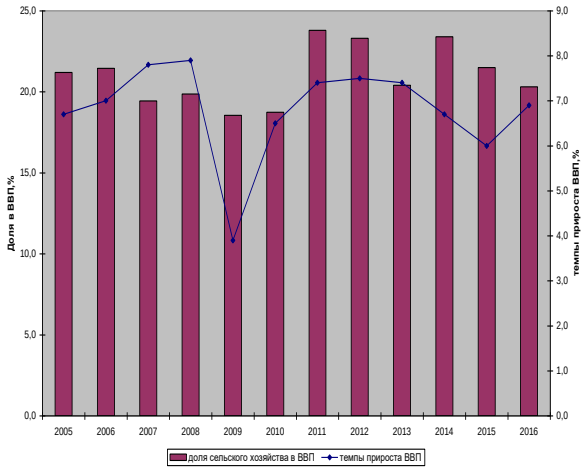
Indicators of development of agriculture in the country*

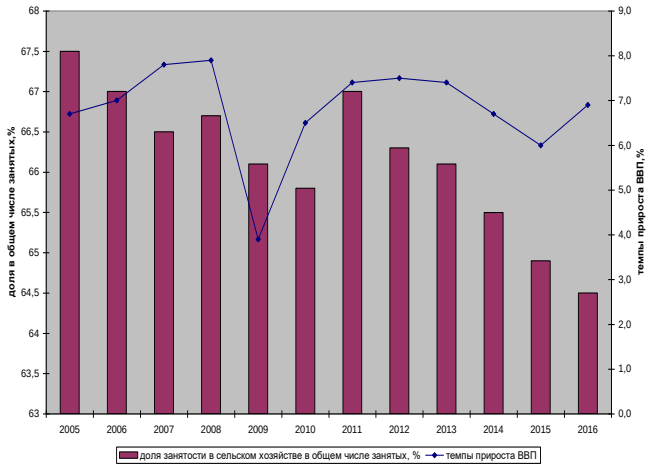
		Over the period of 2011-2016
1.	Average annual GDP growth	7%
2.	Average annual growth in gross output of agricultural production	6,4%
3.	Employment in the agricultural system	Growth on 0,4%
4.	The volume of investment in fixed assets in the agricultural system, million dollars	47,7
5.	The volume of commissioning of fixed assets in the agricultural system, million dollars	17,0

Source: calculated using the data of the Statistics Agency under the President of the Republic of Tajikistan.

Over the past five years, the chain growth index in agriculture, in general, is lower than the growth in the overall indicator for the economy of the country, which resulted from both harvestless years and low returns from used agricultural resources.

The value added in agriculture is growing more slowly than in the entire economy.





Agriculture in recent years has absorbed only about 1% of investments in fixed assets (less than most sectors of the economy), which affects the inadequacy of the prerequisites for sustainable

growth and has affected the better provision of the country with its own food.
As a result, while there is no strong modernization progress in the development of the industry, the low level of labor productivity is accompanied by the low rate of its growth. Although the growth of dehkan farms and self-employment in agriculture allowed increasing the share of agricultural products produced in the non-state sector to more than 93%, but the increasing predominance of small dehkan farms significantly limits material, technical and financial growth opportunities, as well as does not contribute to productivity growth in the industry.

Diagram 2

Ratio of the labor productivity rate in agriculture to labor productivity in the economy as a whole,%

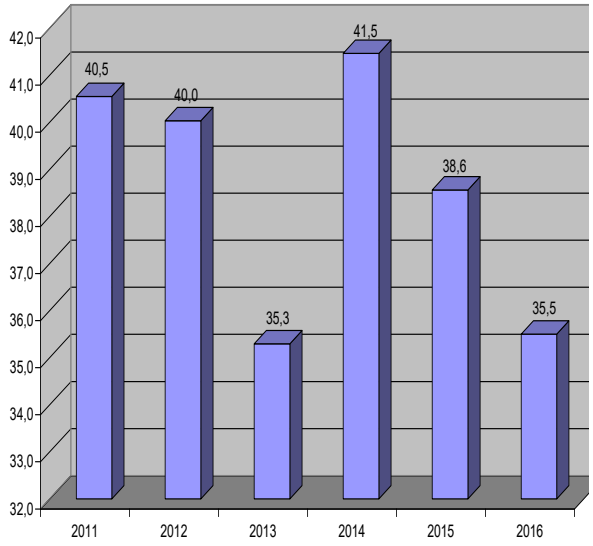
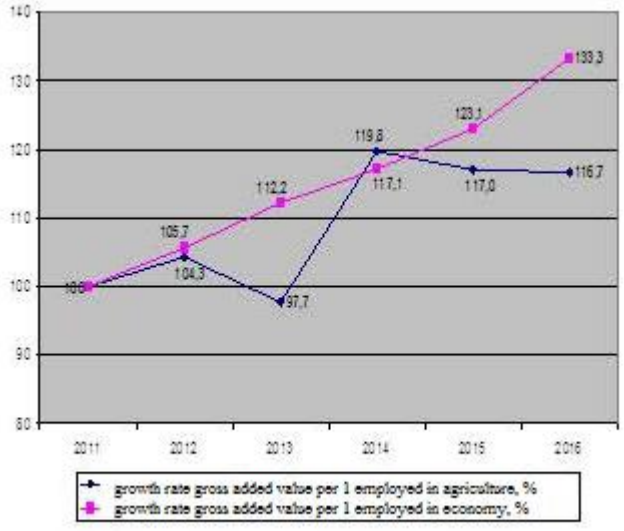


Diagram 3

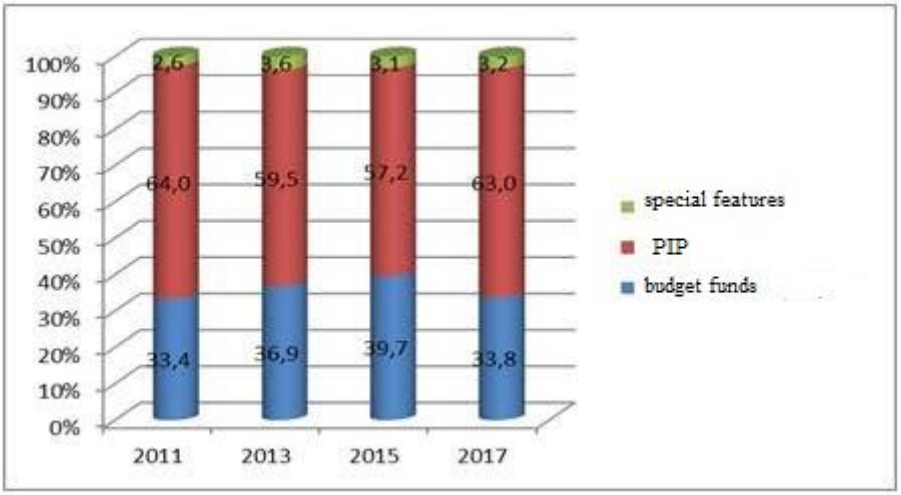
Labor productivity growth indices, % (2011 = 100%)



Foreign direct investment in agriculture accounted for 2.1% of total FDI. Annually about 8% of funds in the framework of official development assistance goes to agriculture.
At the same time, budget financing of the industry is insufficient - on average over the past five years, the amount of financing is about 0.7% of GDP with an average annual growth of %. Share of funds allocated under the Public Investment Programme remains relatively high in the total amount of budget financing.

Diagram 4

Financial structure of the agriculture in the Republic of Tajikistan, %



Together with international organizations, the Government is taking measures to rehabilitate the agricultural infrastructure. The aggregate direction of resources for the period of 2011-2017 is linked with implementation of projects in the following sub-sectors (five relatively large areas):

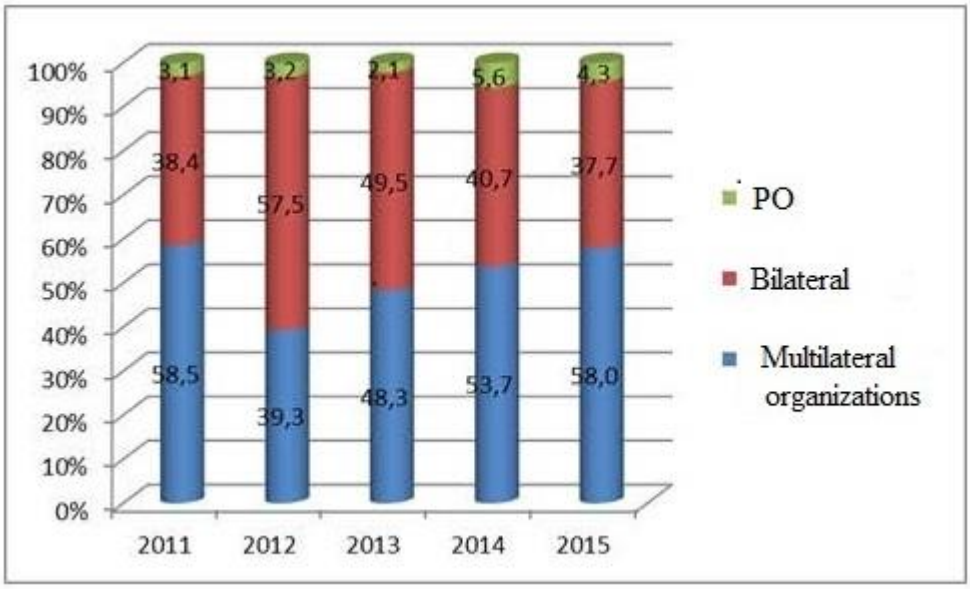
- irrigation and water resources management (about 28% of funds);
- development of agricultural processing industry (about 19% of funds);
- development of agricultural entrepreneurship (about 13% of funds);
- plant production / pest control (about 13% of funds);
- livestock / veterinary services (about 8% of funds).

At the same time, more and more funds are provided in the form of grant support for reforms.

The largest contribution to the development of the Agriculture and irrigation sector is provided by multilateral organizations, which allows to assert that the priorities and policies of these organizations have a significant impact on the scale and direction of financial flows within agriculture of the country.

Diagram 6.

The ratio of payments for the Agriculture and irrigation sector with a breakdown of international organizations' groups, %



In the course of structural changes, the most part of agricultural organizations is private, therefore, enabling environment created for competition in this sector.

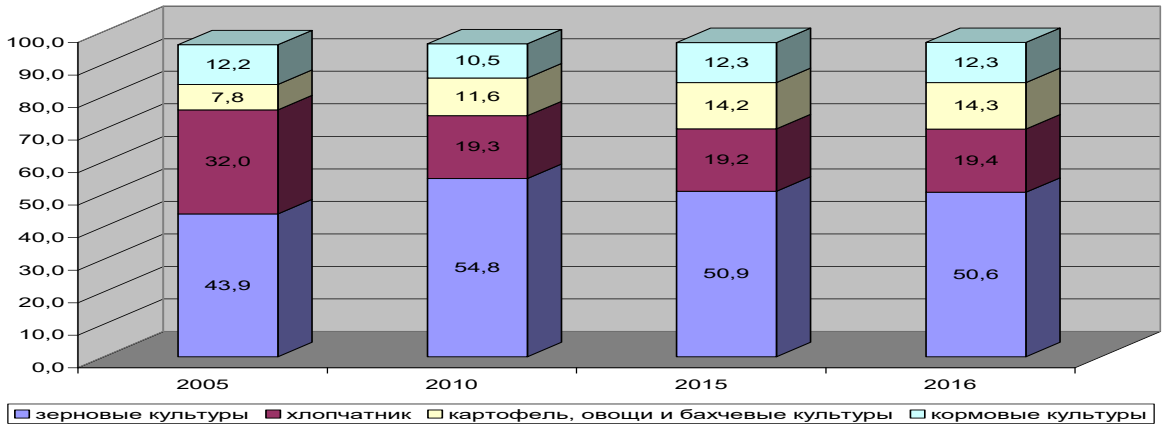
In the structure of agricultural production, there have been shifts associated with an increase in the share of food and a decline in the share of industrial crops.

Tajikistan does not have significant sizes of acreage - only 0.54 hectares per capita employed in agriculture.

In the structure of sown areas there are shifts due to the reduction of industrial crops.

Diagram 7

The structure of acreages, %



Growth in wheat production over the past six years has amounted to 4.5%, with an increase in yields and a small reduction in acreage. Dependency on wheat imports is weakening, but still remains (at the time of independence, almost 90% of wheat was imported, now less than 50%).
Gradually, the volumes of production of the main types of crop products are increasing: over the last five years, the growth in production: for vegetables and melons - by 1.4 times, for fruits and cereals – by 1.3 times.

Table 2

Average annual gross yield of main crops, thousand tons

		Годы		**Изменение**	
		2011	2016	среднегодовой рост, тыс. тонн	рост за период
1.	Cereals	1098,1	1435,8	67,5	+ 31%
2.	Wheat	726,9	917	38,0	+26,1%
3.	Rice	76,9	96,5	6,0	+25,5%
4.	Potato	863,0	898,1	7,0	+4%
5.	Vegetables	1242,0	1748,3	101,3	+41%
6.	Food melons	423,3	594,2	34,2	+40%
7.	Fruits	263,0	364	20,2	+38%

The growth of gross collections was primarily due to the increase in acreage and crop yields, which was a consequence of both a change in priorities when choosing the crops (reduction of crops, for example cotton) and a small technical and technological modernization.
The most significant growth in yields during the last five years was for cereals and melons.

Table 3

Growth dynamics in crop production for 2011-2016, %

		Growth of production volumes	**Yield growth**	**Growth of sown areas (acreage)**
1.	Cereals	+31%	+24	-1%
2.	Potato	+4%	-6	+13%
3.	Fruits	+41%	+15	+24%
4.	Food melons	+40%	+20	+16%

In animal breeding, the situation significantly varies by industry. The production of poultry meat increased at a lower rate.

Table 4

Production of key livestock products, in thous. tons

		Years	**Change**

		2011	2016	Average annual growth, in thous. tons	Growth over the period
1.	Meat of livestock and poultry	150.7	233.3	16.5	+54.8%
2.	Milk	695.9	918.0	44.4	+31.9%
3.	Eggs	254.7	337.1	16.5	+32.4%
4.	Honey	2.9	4.0	0.2	+36.1%

At the same time, in the cattle breeding sector an instable situations continues, which is linked with the increase in livestock numbers, from one hand, but with a shortage of feed, on the other hand

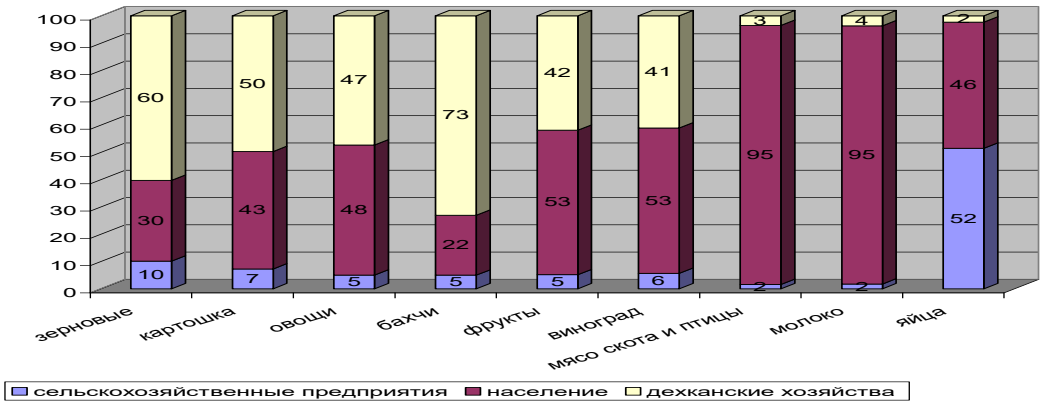
At the same time, low productivity of production remains in the sector - on average, in the country, only 1 573 kg of milk was bred from each cow per year, and the yield of a litter from 100 cows was 60 heads (on average over the past five years).

The contribution of key stakeholders to food security. The country's agriculture is represented by three categories of farms: agricultural enterprises, dekhkan farms and farms of population.

A certain division of labour has emerged between the categories of farms: dekhkan farms are relatively more concentrated in production of cereals and melons, the share of population farms in production of livestock products is high..

Diagram 8

Share of agricultural products by categories of agricultural producers, %



At the same time, food production is carried out to a greater extent based on small agricultural producers.

Table 5

Size and scale of key groups of agricultural producers

	In plant growing		**In animal-breeding**	
	Acreages per 1 farm, ha	Average share in crops production, ,%	Number of livestock and poultry per 1 farm, headsзяйство, голов	Average share in production ,%
Dehkan farms	3.7	54.1	8.2	3.3

In general, the small sizes of agricultural producers restrict an access to necessary resources (such as seeds, technologies, fertilizers, equipment and machinery, funding) and strengthens the logistical base of production, which, coupled with an inadequate storage, high losses after harvesting and limited opportunities for more profitable processing of agricultural products, slow down the pace of poverty reduction, especially in rural areas of the country.

In the same time, agriculture is the largest "employer" for women and men. Although there are no legal and official barriers that prevent women from obtaining property in ownership, however, the vast majority of small dehkan farms are registered in the ownership of men. This limits the participation of women in decision-making about the management of land as a productive asset.

The relatively low level of incomes of the rural population, the relatively higher poverty level in rural areas, are one of the main factors of land degradation. In addition, although the poverty level of the population is decreasing, the problem of intensive use of land resources remains.

In general, the agriculture in Tajikistan is still "working" mainly on current production and consumption; it has not yet the capacity for the sustainable future development.

Irrigated lands provide 90 percent of gross agricultural output. The main water consumer in Tajikistan is the agrarian sector and supporting industries, which consume about 90 percent of the collected water (Hakimov, 2015).

Another problem for the agricultural sector in Tajikistan, as in other Central Asian countries, is the loss of water due to the failure of the irrigation and drainage system. The results of recent studies show that water losses in Central Asia range from 30 to 50 percent.

Food security in Tajikistan can be ensured only based on the right combination of the possibilities of own production and import. In this regard, it is necessary to avoid the two extremes, since they are fraught with increasing risks not only for food, but also for national security. Tajikistan, like other countries, will never fully provide itself with all kinds of food. Moreover, this orientation seems flawed. No country in the world adhere to such a position. For example, the pursuance of full grain supply through own production can result in a sharp rise in prices for meat, milk, vegetables, etc., since such a pursuance in the current situation is fraught with radical changes in the structure of cultivated areas. An attempt to increase grain production in the 1990s led to a reduction in the share of forage crops from 36 to 10%, as a result of which new problems arose, which is the provision of livestock products to the population. The same thing happened with other types of food crops.

Meanwhile, the country has all the opportunities to increase the self-sufficiency index of milk to 70-80%, eggs - up to 10%. As for meat, it seems expedient to rapidly increase the production of poultry meat (broiler poultry) and rabbits, to reduce the production of lamb and goat meat, to maintain the same level of beef production.

As for wheat, it must be admitted that most of it should be imported from Kazakhstan and Russia. This is required in the interests of improving the efficiency of agriculture. The cost price of one ton of durum wheat varieties in Kazakhstan is USD 70-90, and in Tajikistan - USD 120-180. Tajik wheat loses to Kazakh and Russian wheat in both quality and production costs.

On those rain-fed foothill massifs where wheat is grown, it is possible to create modern export-oriented industrial gardens and vineyards. With an average yield of wheat on these lands, 7 centners from 1 hectare can generate income of USD 271.8. If you grow grapes of table varieties, with an average yield of 150 centners per hectare, we can get an income of USD 11,650. Viticulture is capable to bring income 42.8 times more than wheat production. On the income received from each hectare of the vineyard, we can buy 466 centners of wheat.

The similar situation is observed with the production of meat. The agricultural sector in the country neither now nor in 50 years is able to produce 460-550 thousand tons of meat, in accordance with scientifically justified standards of the requirements in this product. The most reasonable way out of the described situation is to determine the course for achieving on average meat consumption in the country at the level of 30 kg per capita. The remaining 50% of the shortage of per capita meat consumption must be compensated by importing it.

Tajikistan is able almost entirely to provide itself with sugar at the expense of its own production. We are talking about the production of 210-220 thousand tons of sugar. At present, sugar is not produced in the country; although studies prove that in conditions of dry subtropics, it is quite possible to obtain from one ha, 500 centners of sugar cane with sugar content up to 21%. In the country, as experience shows, it is possible to obtain from one ha 450-500 centners

of sugar beet with sugar content up to 18%. Growing for industrial purposes 20 thousand tons of sugar cane (in the Farkhor region and in the lower reaches of Kafirnigan) and sugar beet (in Temurmalik, Gonchi Zafarabad districts), with the productivity noted above, will allow to get up to 190 thousand tons of sugar.

In general, the country has many opportunities to meet the needs of its population in milk and dairy products, eggs, potatoes, fruits, grapes and berries, vegetables, melons, sugars through its own production. The demand for bread and bakery products, meat, fish will be mainly met by imports, and to a lesser extent by the development of own production.

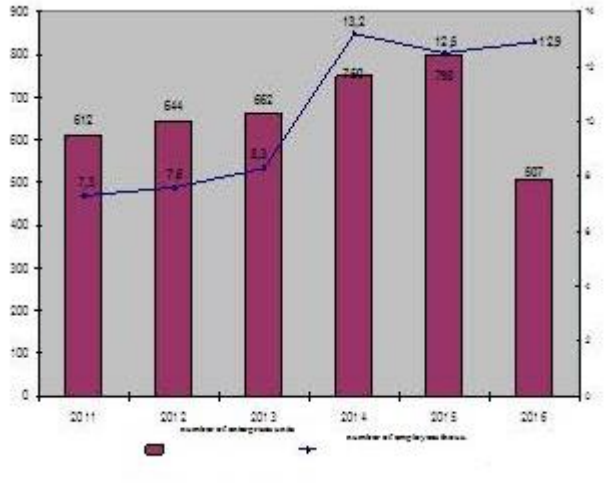
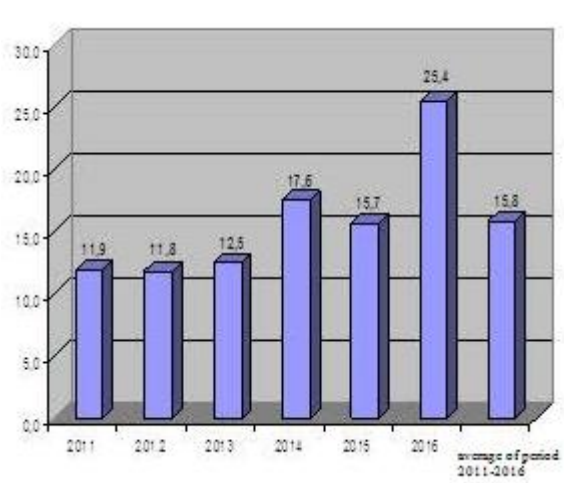
4.2. Processing industry

The dual nature of the development of primary agricultural production is also reflected in the food industry of the country. Currently, only about 20% of agricultural products are processed. For the volume of processing, the energy and financial limitations are more important than production capacity.

There are several large food industry enterprises that are located in cities. These enterprises are engaged in the processing of small volume of agricultural products, which are sold to a greater extent in the domestic market. Along with them there is a network of small-scale food production, mainly at the household level, serious obstacles to expanding their activities do not allow this sector to develop sufficiently. New enterprises for processing agricultural products are mostly small and, as a rule, informal, they face problems related to financial means, management, marketing and logistics. The slow development of the agricultural processing sector means that very few jobs have been created in this sector.

In the past five years, the domestic food industry has grown at a faster pace in comparison with agricultural production. However, the share of food industry in the structure of the economy is still lower than in countries with comparable incomes, which means that there are possibilities for increasing the added value in the agrofood sector. Moreover, the indicator of the "depth of the food industry", which measures the level of development of processing of agricultural products in the country in comparison with agricultural production, is of quite low importance in Tajikistan.

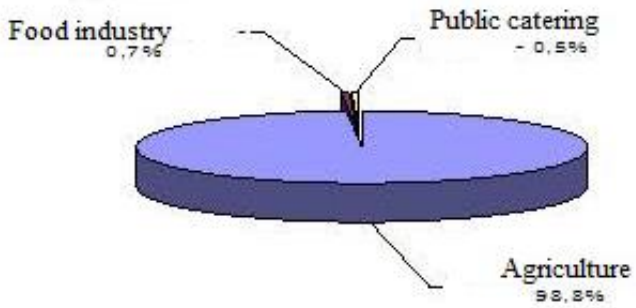
At the same time, the growth in the number of food industry enterprises and employment is very unstable. In addition to the above, there are 16 employees per 1 enterprise, the gap in the size of enterprises is significant.

Diagram 9 **Number of enterprises and average annual number of employees employed in food production**	**Diagram 10** **Number of employees per 1 enterprise producing food products, people**
	
Source: calculated using the data of the Statistics Agency under the President of Republic of Tajikistan	

In general, employment in the food sector (jobs in agriculture, food processing industry and public catering system) is shifted towards agriculture, although based on strategic guidelines, employment growth in sectors with higher added value is more preferable, including in the food industry and system of public catering.

Diagram 11

Employment structure in the food sector, 2011-2016, averages, %*



Source: calculated using the data of the Statistics Agency under the President of Republic of Tajikistan.

Generally, such transformations can be achieved by qualitatively improving the skills of rural workers in the production of agricultural products and in other segments of the food sector. In the future, there will be a growing demand for workers who possess modern practical methods and tools. In addition, to promote changes in food systems and attract investment, incl. FDI, in addition to skills and competencies related directly to agricultural production, it will be necessary to develop other skills in such areas as storage, sorting and processing of products.
The scale of production in the food industry is small on the average. In recent years, the production and the volume of production per one food processing plant has grown quite rapidly, mainly due to the increase in the scale of production (volume in production per enterprise).

4.3. Inter-sectoral links

The health sector plays a key role in combat malnutrition. Medical services for mothers and children represent a platform for prevention and treatment of diseases caused by malnutrition, and contribute to the improvement of social factors that ensure health of the population. Government expenditures on health is only 2.2% of GDP, which is less than 6% of total budgetary allocations. Dependence on external financing of health sector poses a threat to the sustainability and "elasticity" of the health system itself. The effective health financing policy, practical expansion and implementation in all regions of the country is extremely necessary for strengthening food security and improving the quality of nutrition.
In Tajikistan, there is a weak practice of feeding infants and young children, which leads to very high rates of low weight and height. Only 20% of children in Tajikistan receive optimal nutrition according to the standards of "infant and young child feeding" (IYCF) - in terms of variety of food and frequency of food intake, and only 41% of infants aged 6 to 8 months receive a good and adequate nutrition, necessary for development. Poor practice of caring for sick children directly affects high rates of low weight (or acute malnutrition) in Tajikistan. Incorrect and harmful care practices, such as dehydration among children with diarrhea, are observed among children at 38%. Expanding access to health care and awareness of nutrition issues could improve the practice of care and provide better nutrition for children.
Distinctive features of nutrition in Tajikistan are the consumption of a large number of carbohydrate foods, which account for more than 60% of the energy received by the body, the consumption of small amounts of proteins, and a small variety, which leads to a deficiency of microelements.

The poorest indicators of child health in Tajikistan, including the physical stunting are observed in the poorest households; there is also a clear economic disparity between rural and urban populations. This is explained by significant factors that negatively affect the poorest households: lack of access to adequate food, lack of access to safe drinking water, poor hygiene, lack of access to quality health care and lack of awareness. The next section discusses the importance of poverty reduction in strengthening food security and providing adequate nutrition.

Social protection plays an important role in ensuring the permanent security of the most vulnerable citizens, and in the event of economic shocks, it helps to save their income, ensures food security, well-being and access to health services. The system of social protection includes the following: social insurance, providing protection from risks and unfavorable factors (state social protection); social assistance in the form of payments or in-kind assistance; and social integration of poor and marginalized citizens for full participation in economic and social life. Such support is extremely important for persons with disabilities who need long-term social assistance, as well as for "working poor"; there are great opportunities for incorporating the elements of social support into sectoral policies. State social protection programmes help people recover from shocks and strengthen their potential to cope with similar phenomena in the future.

The system of social protection in Tajikistan is not integral; its institutional powers are distributed across several ministries and departments at different levels. The benefits from this are small, and the goals are not clearly indicated. In 2009, the poor population received only 23% of the total volume of social assistance payments, which was less than three percent of their own consumer spending per capita. Only 43% of poor households received financial assistance from the government; while 33% of non-poor households also received social assistance.

Measures for social protection play a positive and important role in strengthening food security and providing adequate nutrition; however, monetary assistance, especially in current volumes - is not sufficient to significantly improve the welfare of households and reduce their vulnerability. In addition to increasing the amount of monetary assistance, measures are needed to create a system of state insurance and social protection to strengthen food security and provide access to livelihoods in the short term. However, strategic changes are needed in the system of social protection, guaranteeing sustainable access to means of subsistence in the long term.

Education. The Republic has already achieved the task of ensuring universal access to primary education, gender equality in the system of primary and secondary education. Attention is paid and there is still a need to improve the school infrastructure, improve quality, mainly in the training of teachers, improve learning outcomes and transferable skills, as well as create an enabling environment and opportunities for lifelong learning. It is known that the educational potential significantly enhances the competitive positions of employees - the more significant it is, the higher the economic activity and employment, the lower the risk of falling into unemployment and the shorter its duration, greater earnings and wider access to attractive jobs, better consumption patterns and access to food. At present the school feeding mechanism also "works" to increase school enrollment. Nearly 360,000 primary school children, their teachers and support staff in 2000 schools in 52 rural areas receive hot meals every school day. This accounts for 60% of all schools in rural areas, including all food-hazardous areas identified by the Food Security Monitoring Information System (FSMIS) during a household survey organized by WFP.

Transport connections. The efficient transport sector is an essential component of ensuring food security. Currently, the contribution of transport sector in the country's GDP is about 13%, and in the provision of employment - 2%.

In general, in the republic through the implementation of a number of road and railway projects within the country, it became possible to solve the task of creating the unified transport network linking all regions and create a basis for a balanced spatial development of the country. At the same time, active participation in the implementation of several projects for the establishment of international transport corridors will allow to ensure diversification of transport routes for

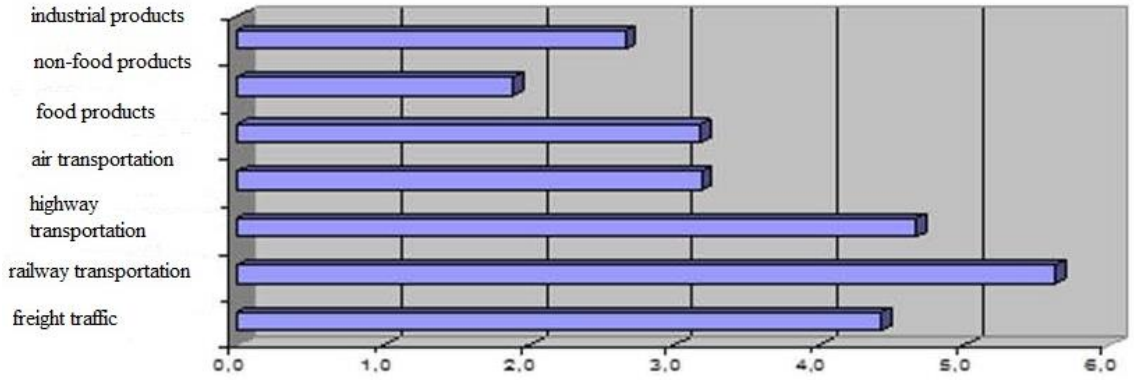
foreign trade.

According to calculations, the increase in investment in the transport sector by 1% ensures the increase in the volume of cargo transportation by 0.20%. At the same time, this category of expenses has an impact on transport with a delay of 2 years.

Although investments in development of the transport system of the republic are the most significant, for entrepreneurs of the Republic of Tajikistan, one of the factors that reduce the profitability of private investments, especially in agriculture and in processing related industries, is the relative high cost of transporting goods both inside the country and deliveries to external markets. The cost of freight transportation services remains relatively high and is growing at priority rates. Thus, over the past 10 years of development, the growth rate in tariffs for transport services has outpaced the rates of growth in the economy, in particular, in food and non-food products, and in industrial products.

Diagram 12

Price increase for products and services in economic sectors in 2005-2015, times



Reducing transportation expenses and transportation tariffs create opportunities for sustainability of economic growth in the country, and first of all, for prompt and stable food supplies.

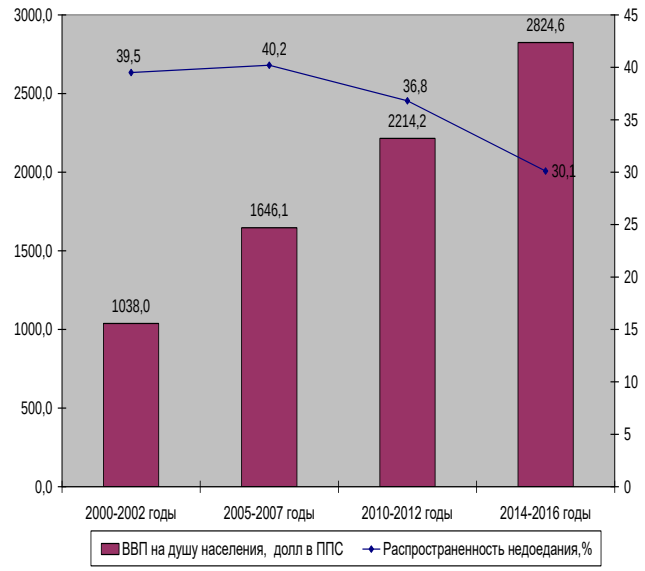
5. FOOD SECURITY SITUATION AND NUTRITION IN THE REPUBLIC OF TAJIKISTAN

5.1. Setting key aspects of food security and nutrition

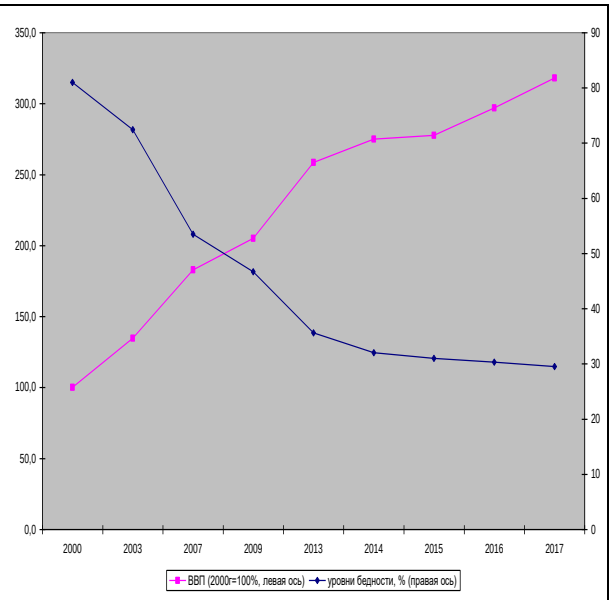
Economic growth, strengthening food security and improving nutrition. After 2000, Tajikistan has been experiencing the high rates of economic growth per capita, averaging 7.7% per year, which allowed to reduce the proportion of people living in extreme poverty (from 36% in 1999 to 14% in 2016), and this downward trend is continuing, through slowly. At the same time, the prevalence of malnutrition was reduced - the share of people suffering from chronic hunger decreased from 39.5% in 2000-2002 to 30.1% in 2014-2016.

Agriculture plays a critical role in economic growth of the country. The domestic food production has increased dramatically, which derives from the policy measures, institutional reforms and investments in national and sectoral development programmes.

Diagram 13	**Diagram 14**
GDP per capita and prevalence of undernourishment in Tajikistan*	**GDP growth rate and poverty level of population**



Source: World Bank (2017),FAO (2017.)



Source: calculated using the data of Statistics Agency under the President of Republic of Tajikistan.

Despite of the fact that there is a high correlation between the GDP growth and the prevalence of malnutrition at the relative rate (R = -0.77), as well as between the growth of value added in agriculture and decline in the scale of malnutrition (R = -0.95), some slowdown in the progress of food security is partially due to the low level of investment in agriculture, which is dominated by small family farms with limited opportunities for modernization and innovation, and increase in income inequality (the Gini coefficient rose from 29.5 in 2000 to almost 34 in 2015, the World Bank, 2017). In general, the incomes of 10% of the most better-off population are 14.5 times higher than those of the poorest 10%. Especially, the difference in rural areas is 22.7 times. And the dynamics (for the period 2011-2016) of the coefficient of funds[2] demonstrates that the scale of the ongoing changes is not significant. At the same time, the stock coefficient remains high in rural areas.

An assessment of food availability for urban and rural residents, unfortunately, has not yet been carried out. However, the identification of differences would allow to adjust policies aimed at the development of the village, providing rural families with access to land, and promoting small businesses.

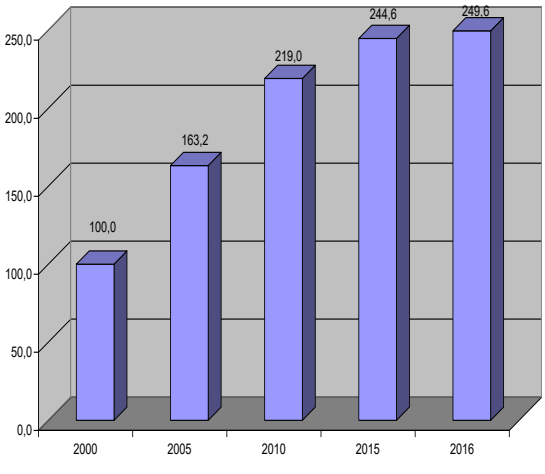
Unfortunately, the satisfaction of the needs of the population by cities and districts of the country is not assessed, but this aspect of analysis is one of the most important.

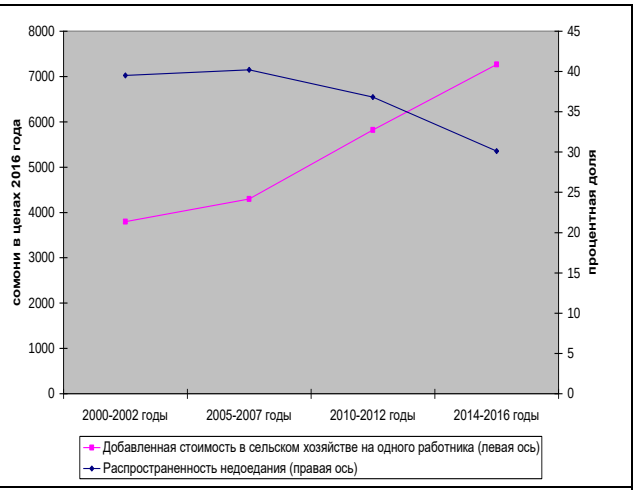
At the same time, trade liberalization led to the replacement of local production of certain types of food products and finished goods with imported goods.

Inequality in the allocation of assets such as land, water, capital, education and health, the progress rate has slowed down in terms of the scale of malnutrition.

Diagram 15 **Indicators of production per capita, % (index of 2000=100%)***	**Diagram 16** **Productivity of agricultural products and prevalence of undernourishment**

[2] The coefficient of funds is the ratio of the average income in the upper decile (having the highest income) and the lower decile (having the lowest incomes). The coefficient of funds shows how many times the income of 10% of the richest population is on average larger than the income of 10% of the poorest population





**Source: calculated using the data of the Statistic Agency under the President of the Republic of Tajikistan*

At the same time, trade liberalization led to the replacement of local production of certain types of food products and finished goods with imported goods.

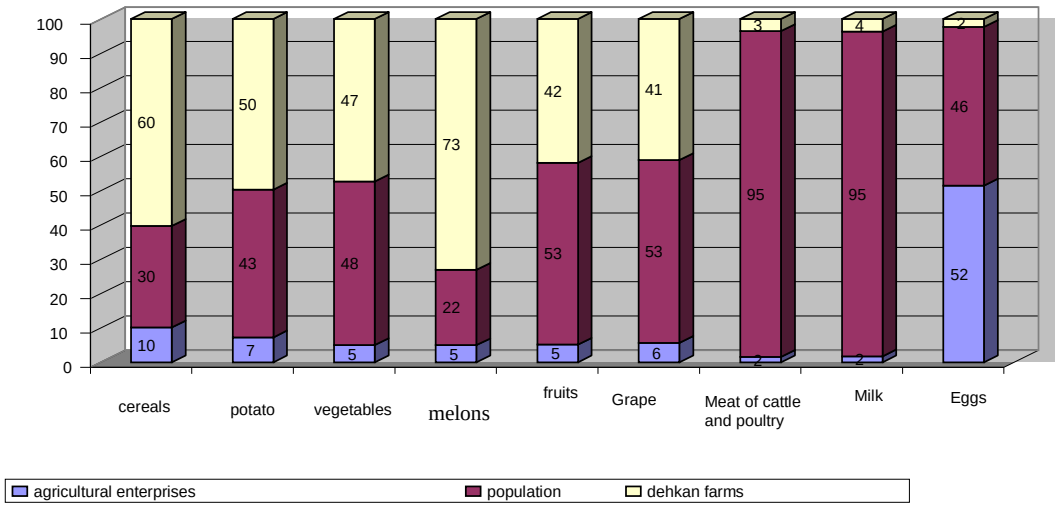
Indicators of malnutrition in Tajikistan. There are still some areas, where the progress in providing food security should be enforced.

Prevalence of malnutrition. During the period from 2000 to 2016, the percentage of people suffering from hunger in Tajikistan decreased from 39.5% to 30.1%, but their absolute number increased slightly (from 2.5 to 2.6 million people), which indicates a very slow progress in this area. In 2014-2016, the energy value of the diet in the country remains below the average (97%) and correlates with the level of GDP per capita.

Prevalence of stunting among children under 5. Between 2000 and 2016, the prevalence of stunting in Tajikistan decreased by 6.5 percentage points, as a result of which, although the level of delay shifted from "high" to "medium"[3], but it stills remains a serious problem for the health care system of Tajikistan.

Diagram 17

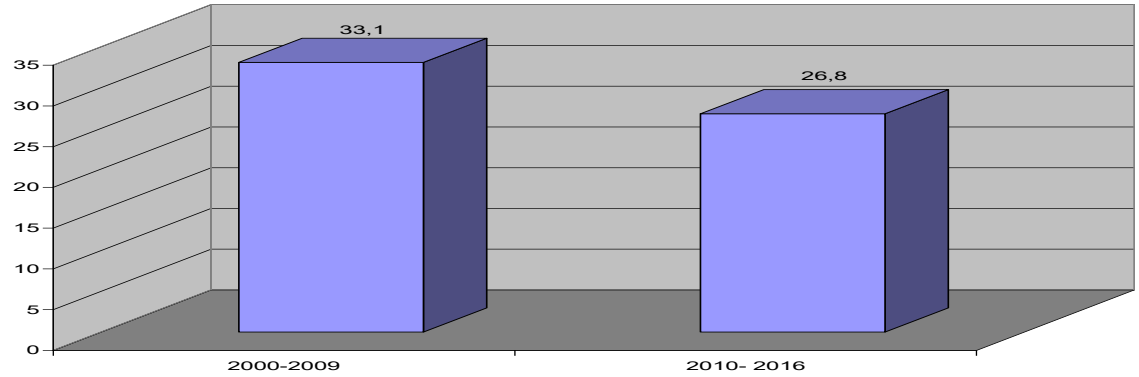
Share of agricultural products by types of agricultural producers, in %



[3] The following thresholds are set for the prevalence of stunting, being important for the health care system: <20% - low, 20-29% - medium, 30-39% - high, >+ 40% - extremely high (WHO, 2010).

Diagram 17

Prevalence of stunting among children under 5 in Tajikistan, %*



**Source: WHO, 2017.*

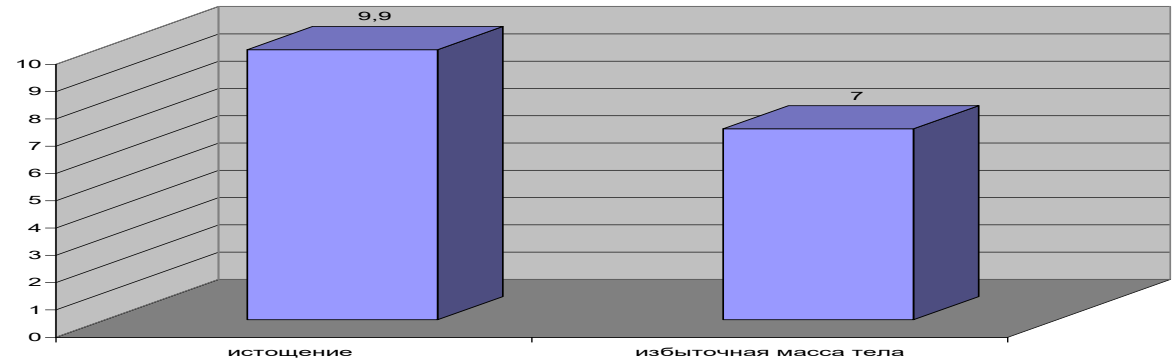
A slow improvement in situation of more access to safe drinking water and improved sanitation and technical facilities has become a factor that hampers the progress in overcoming the issues of malnutrition and stunting of children.

By 2017, only 71% of the rural population has access to improved / main water sources, and only 41% of the rural population has access to improved sanitation facilities (World Bank, 2017).

The prevalence of wasting and overweight in children under five. Currently, 9.9 percent of children, or 100,000 children under the age of five suffer from wasting, which is close to the extremely high level as per WHO standards[4]. And while the prevalence of underweight and wasting still exceeds the prevalence of overweight.

Diagram 18

Prevalence of wasting and overweight among children under five in Tajikistan, % (2016) *



**Source: WHO, 2017.*

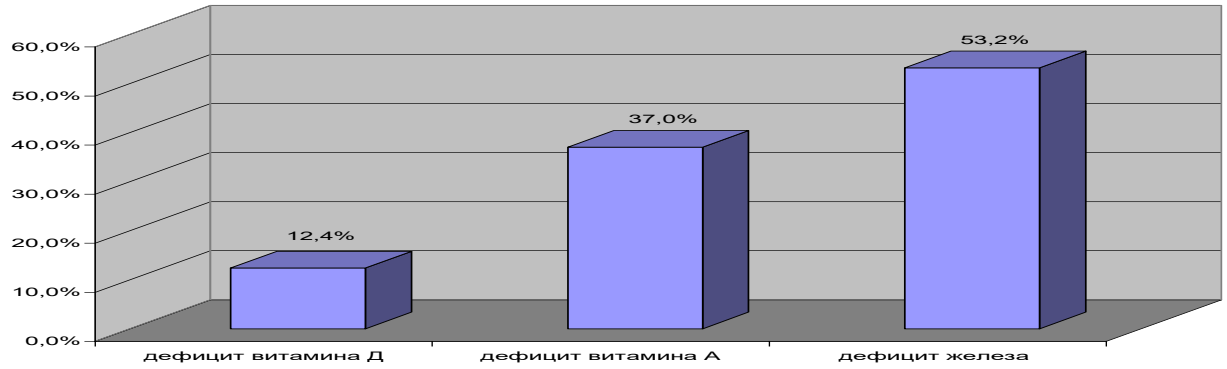
Prevalence of obesity among adults in Tajikistan. The country has relatively low prevalence of obesity - 10.9% (FAO, 2016), i.e. three times lower than the level of malnutrition. At the same time, the growth rates are not only because of an increase in per capita income level (consumption of more caloric foods with an increasingly active lifestyle), but also because of inadequate nutrition associated with the consumption of low-cost foods having high content of fat, sugar and other refined carbohydrates, and of course insufficient awareness of the population about healthy diet models.

[4] The following thresholds are set for the prevalence of wasting, being considered important for the health care system: <5% - acceptable, 5-9% - unsatisfactory, 10-14% - serious,> = 15% - extremely high (WHO, 2010).

Deficiency of micronutrients. Micronutrients deficiency costs the country about 1% of the country's GDP (ADB, 2005). According to the national nutrition survey, anemia was diagnosed in 25.8% of children under five and 21.7% of women of reproductive age. These indicators are slightly lower than the prevalence of malnutrition (30.1%), which indicates that the problem has a broader stratum / resource. Among the children, the relatively high levels of deficiency are with vitamins A and D, as well as iron.

Diagram 19

Deficiency of individual micronutrients in children in Tajikistan, % (2016)*

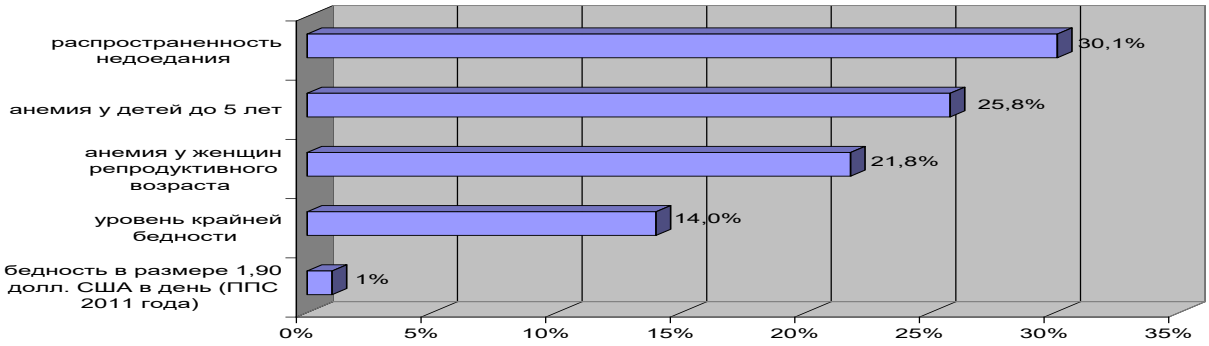


* Source: National Nutrition Survey in Tajikistan (2016).

In this way, the three main problems of inadequate nutrition in the country are malnutrition, micronutrient deficiency and a little over-nutrition. The indicators of the prevalence rates of these three issues as a whole correlate with the per capita income level. But if the indicators of malnutrition and micronutrient deficiency correlate with income moderately, then the correlation of indicators of obesity and overweight with per capita income is high.

Diagram 20

Indicators of food security and nutrition in the Republic of Tajikistan (2016)*



* Source: World Bank (2017), National Nutrition Survey in Tajikistan (2016), FAO (2017).

National policy factors contributing to achievement of SDG-2 objectives. The Republic of Tajikistan has started implementation of the Agenda 2030. Wherein:

• there is a separate law on food security, policy documents defining the role of food security are adopted, nutrition programmes are introduced, including within the framework of a more general health strategy;

• the main instruments of export policy are the export promotion tools. The programme of export support and promotion, including the export of agro-food products, as well as the Regulation on the Permanent Commission for the Promotion of Domestic Production and Export Promotion, has been adopted and is being implemented;

• the country participates in the activity of new regional structures dealing with food security issues, such as the Islamic Organization for Food Security (headquarters in Astana, Kazakhstan, in 2016) and the Regional Coordinating Center for Food Security of the Economic Cooperation Organization (headquarters in Turkey, 2012);
• the country participates in UNDP events in the frame of the Strategy of integration, Accelerating Progress and Policy Support (SIAPPS);
• A voluntary national review was prepared in the framework of SDGs achievement.

Macroeconomic trends as a factor affecting the situation and policy. During 2014 -2016, there was a downturn in economic growth compared to 2010-2013 - from 7.2% to 6.5%. In addition, a decline in the national currency against US dollar and euro that started in 2014 and continued in 2015-2017. The decline in the inflow of remittances caused a decline in the volume of ultimate consumption of population. This was reflected in food availability at the expense of reducing import capacity and made access to food more difficult due to the reduction in potential government revenues that protect poor households from rising domestic food prices (FAO, 2017a).

Diagram 21

Economic growth rates and dynamics of exchange rate*

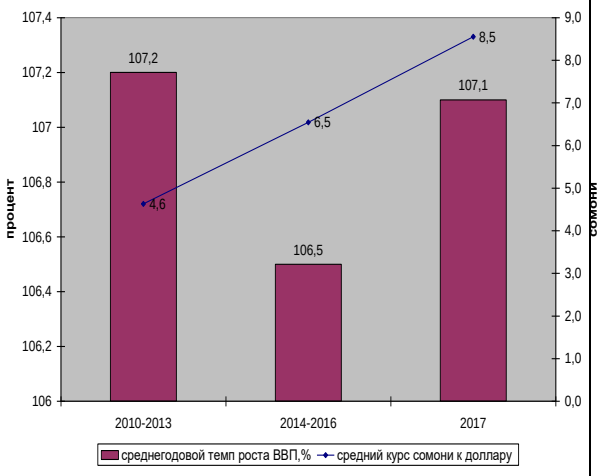
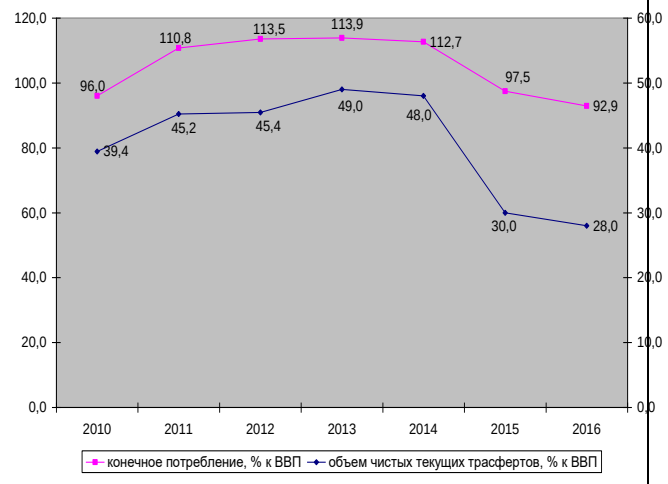


Diagram 22

Final consumption and volumes of net current transfers, % of GDP*



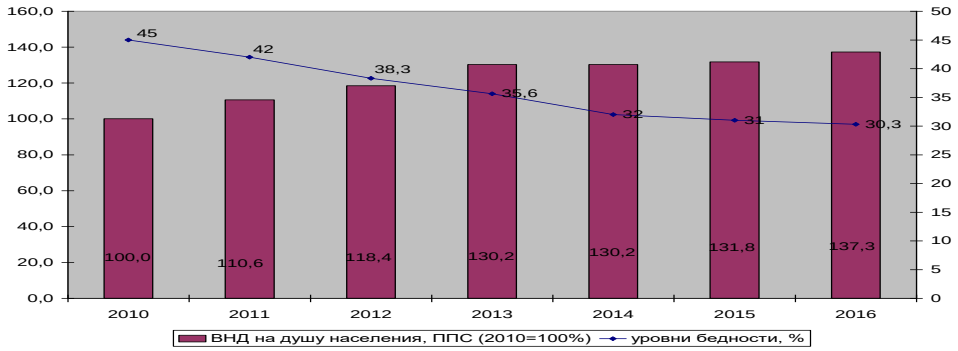
**Source: calculated using the data of the Statistics Agency under the President of Republic of Tajikistan.*

At the same time, though macroeconomic shocks did not lead to reduction of funding the programmes on agricultural policy programs, but their volumes are very low - in relative terms, the volume of government expenditures in agricultural sector - 0.7% to GDP.
And in the agriculture itself, the strategy of moving away from concentration of agriculture on monotonic crops and increasing diversification of agricultural products are under implementation.

Extreme poverty is the main obstacle to ensuring people's access to food. The reduction in poverty is effected by the overall economic growth and remittances.

Diagram 23

Growth rates of GNI per capita and levels of poverty of population*



Source: calculations based on data from the World Bank and the Statistics Agency of the Republic of Tajikistan

There are some population groups in the country that are deprived of the benefits associated with economic growth and prone to a higher risk of extreme poverty. In general, rural areas are characterized by heavier and more persistent forms of poverty than urban areas. At the same time, there are still limited opportunities for employment outside the agricultural sector and diversification of the income, as well as stagnation of entrepreneurial activity, which leads to outflow of population from the village.

Diagram 24

Poverty rate by regions, 2017

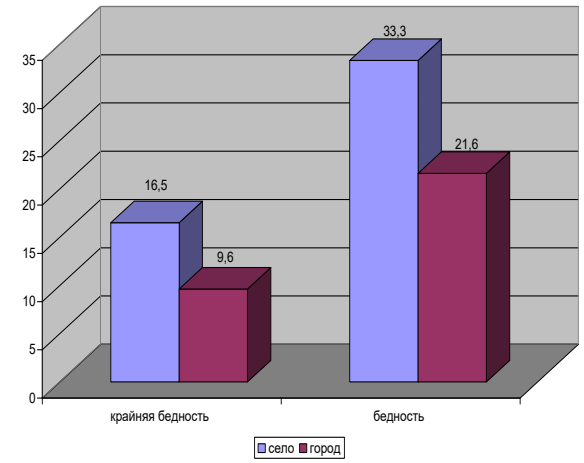
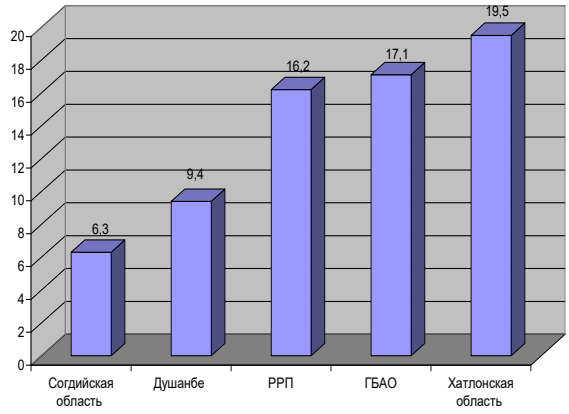


Diagram 25

Levels of poverty by enlarged regions of the country, 2017лики



**Source: Statistics Agency under the President of Republic of Tajikistan.*

Accordingly, attention should be paid to the rural population, since the majority of people in the country suffering from extreme poverty living in rural areas.

A special vulnerable group in terms of access to decent employment and sources of stable income is rural women - they are more engaged in low-paid, seasonal or part-time jobs, have less access to ownership and management of productive resources (land and water).

At the same time, there is a process in the country - the transition from social security with a relatively high coverage to more targeted, as a rule, targeted to specific categories of the population of social assistance programmes. The share of such expenditures is around 0.5% of GDP.

Promotion of nutrition programmes and initiatives. In the course of 2015-2017, there were changes related to this programme - the government, in the framework of cooperation with the World Food Programme, has committed itself to implement a sound national school feeding programme integrated into the national social protection system (WFP, 2016). In addition, the

Food Security Council is functioning in the country to coordinate food security activities at the policy level. Programmes on promotion of and healthy nutrition are being implemented.

At the same time, efforts to eradicate hunger and reduce malnutrition and efforts to ensure food security should be synchronized.

5.3. Assessments of food dependency

The ratio of imported and own food has not been changing much yet, but we can observe the trends of improvement.

Table 6

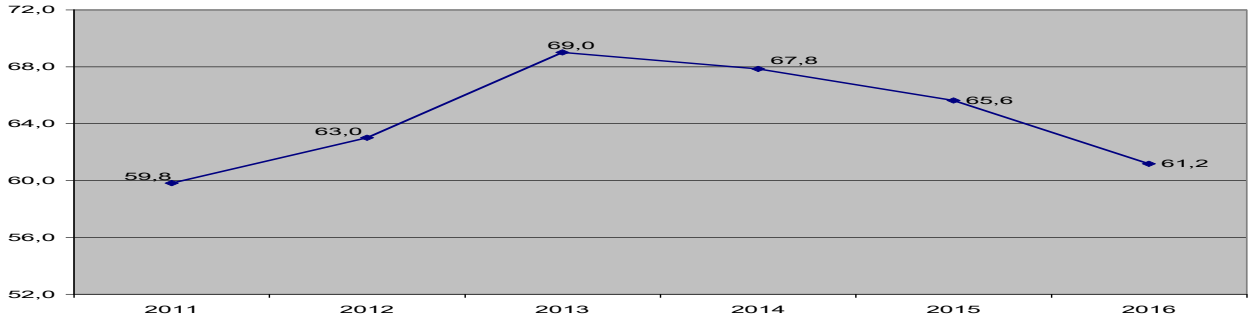
The level of food dependency of Tajikistan for individual products

	Years						during 2011-2016, on average
	2011	2012	2013	2014	2015	2016	
Wheat, in thous. tons							
Production	726.9	812.6	947.4	868.4	896.3	917.1	861.5
Import	442.5	757.7	640.2	774.9	858.8	1034.1	751..4
Ration of import to production, %	60.9	93.2	67.6	89.2	95.8	112.8	86.6
Potato, in thous. tons							
Production	863.1	991.0	1115.7	853.7	887.4	898.1	934.8
Import	12.6	33.1	42.6	29.3	51.0	5.4	29.0
Ration of import to production. %	1.5	3.3	3.8	3.4	5.7	0.6	3.1
Vegetable, in thous. tons							
Production	1242	1342.4	1490.6	1549.5	1666.6	1748.3	1506.6
Import	4.2	13.8	4.6	27.8	16.1	1.5	11.3
Ration of import to production, %	0.3	1.0	0.3	1.8	1.0	0.1	0.8
Fruits, in thous. tons							
Production	263	313.2	328.5	341.3	299.3	364	318.2
Import	18.5	22.3	42.3	46.7	34.9	23.9	31.4
Ration of import to production, %	7.0	7.1	12.9	13.7	11.7	6.6	9.8
Meat and meat products, in thous. tons							
Production	150.8	162	173	198..8	217.7	233.3	189.3
Import	66.5	60.7	59.7		62.7	38.7	57.7
Ration of import to production, %	44.1	37.5	34.5		28.8	16.6	32,3
Milk and milk products, in thous. tons							
Production	695.9	778.3	828.2	854.7	889	918	827.3
Import	6.5	7.9	10.5		9.8	8.9	8.7
Ration of import to production, %	0.9	1.0	1.3		1.1	1.0	1.1

An integral indicator of the import-dependency during the last five years has been very high and fluctuated within the narrow range (60% - 69%).

Diagram 26

Integral level of import-dependency, in %



At the same time, the role of agriculture and food in the country's total volume of exports remains low (of course, if compare with the capacity) - in recent years, the share of these goods fluctuates within the range of 3.6 - 5.8%, and improvement in the foreign trade balance for food products is not happening at this stage.

Diagram 27

Share of food products in the total foreign trade of the Republic of Tajikistan

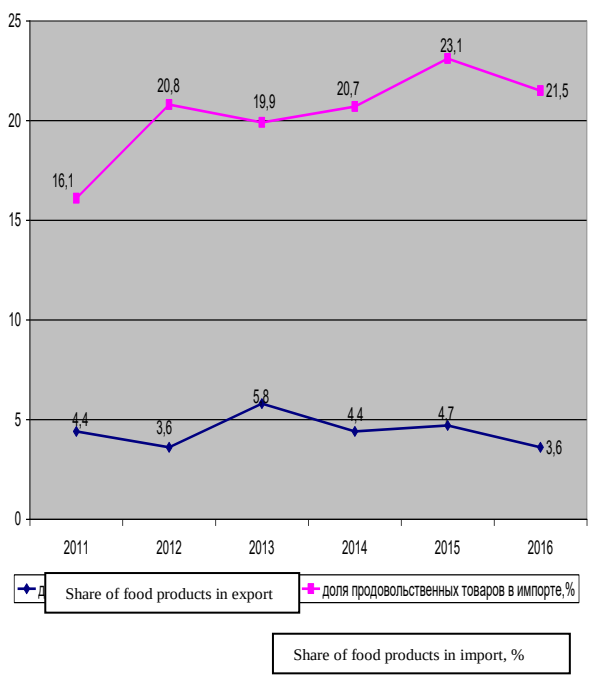
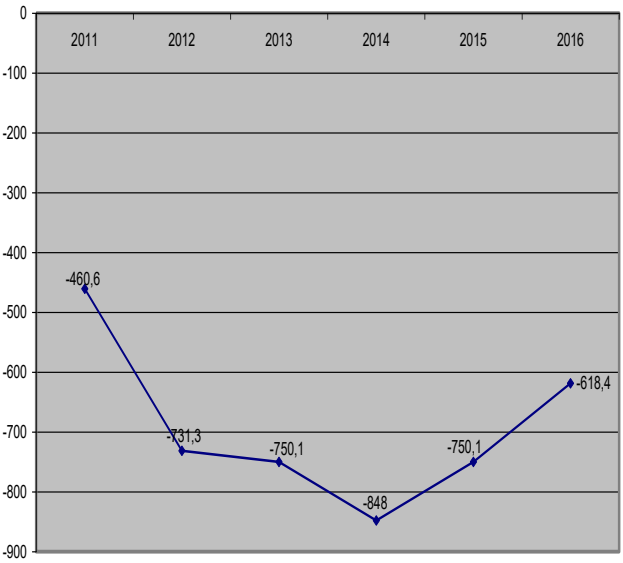


Diagram 28

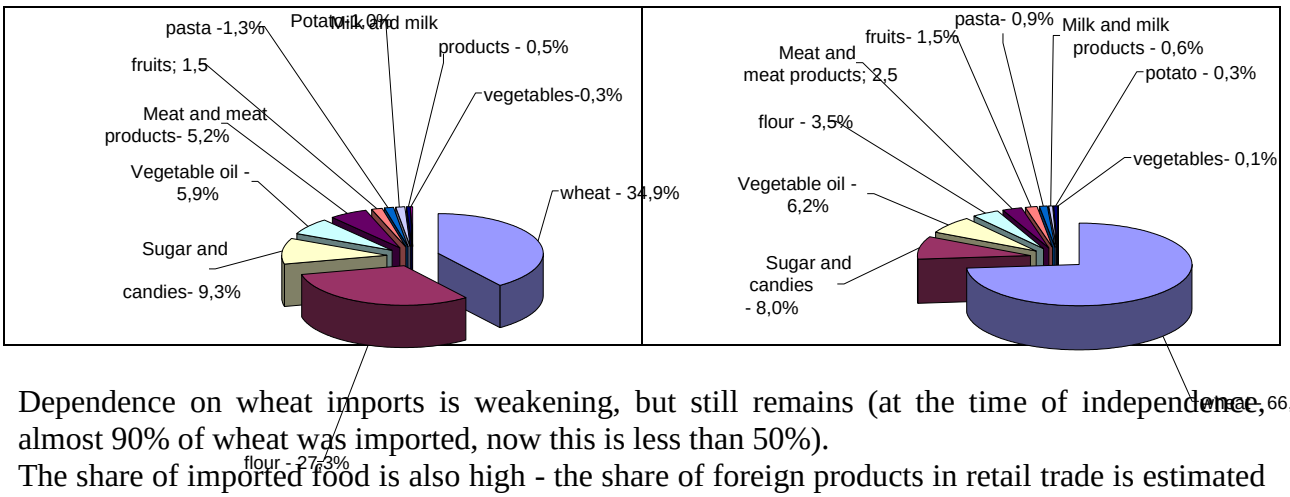
Volume of net exports of food products, in mln USD



Wherein, in the frame of food structure of the import the share of wheat is significant and increases with the reduction of the share of flour.

Diagram 29-30

Structure of food imports, %	
in 2011	in 2016



Dependence on wheat imports is weakening, but still remains (at the time of independence, almost 90% of wheat was imported, now this is less than 50%).

The share of imported food is also high - the share of foreign products in retail trade is estimated at the range of not less than 60%.

High levels of import dependency indicate that the traditional identifications of the objectives of the industry development - ensuring domestic needs, including import-substitution are very ambitious.

Need to state that there is a strong correlation between the indices of changes in the volumes of import and the net national disposable income (0.91). In this regard, the decline, though insignificant, of import in recent years is not the results of import-substitutions, but to the increase in population incomes, affecting the value of imports (caused, including by remittances).

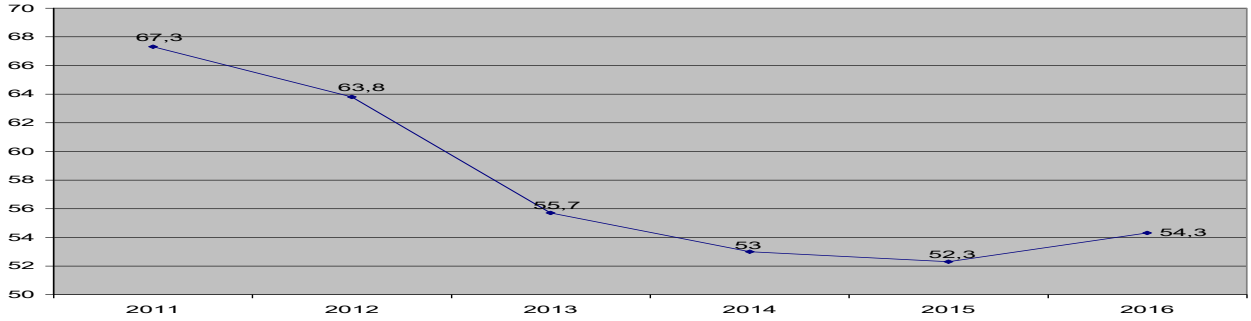
5.3. Economic accessibility of food for the population

If the food security is deemed a situation, when the country provides economic access for the population to food sufficient for a healthy lifestyle (international approach), then the share of food expenditures in the final consumption of the family will allow to assess the economic opportunity of families to buy a full-fledged diet[5].

In Tajikistan, over the past five years, the level of food expenditures has remained very high.

Diagram 31

Share of consumer spending on food, %



The situation gradually improved, but remained critical for the group of population that have the lowest income. Even during the prosperous years, the share of food costs here remains critically high.

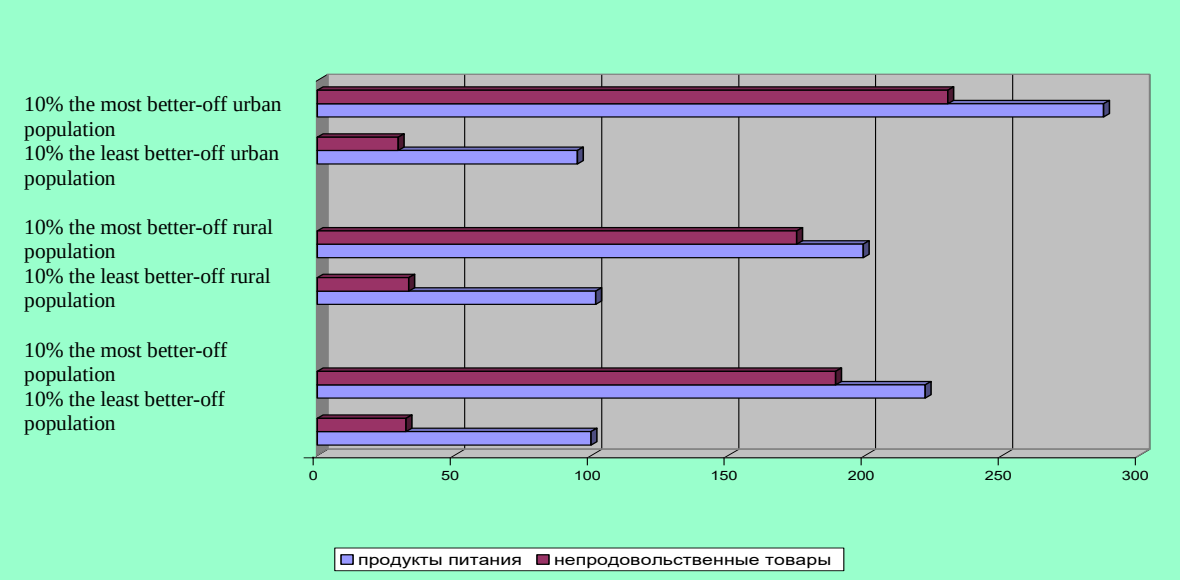
The costs of the poor on food reach 60% of their budgets. Taking into account the fact that most of the consumption expenditures of the poor is on food, any decrease in income has serious consequences for such families. Families with high incomes, as a rule, consume better and more

[5] Remark – if the share of food expenditures does not exceed 20%, then most likely we can talk about the economic accessibility of food. If less than one-third of the income is spent on food, then the level of accessibility can be considered average; more than one-third, but less than 50% - high; over 50% - critical.

expensive foods, where the low-income families, in contrary, less quality and cheaper.

Diagram 32

Per capita consumption by quantiles, in TJS (2015)[6]

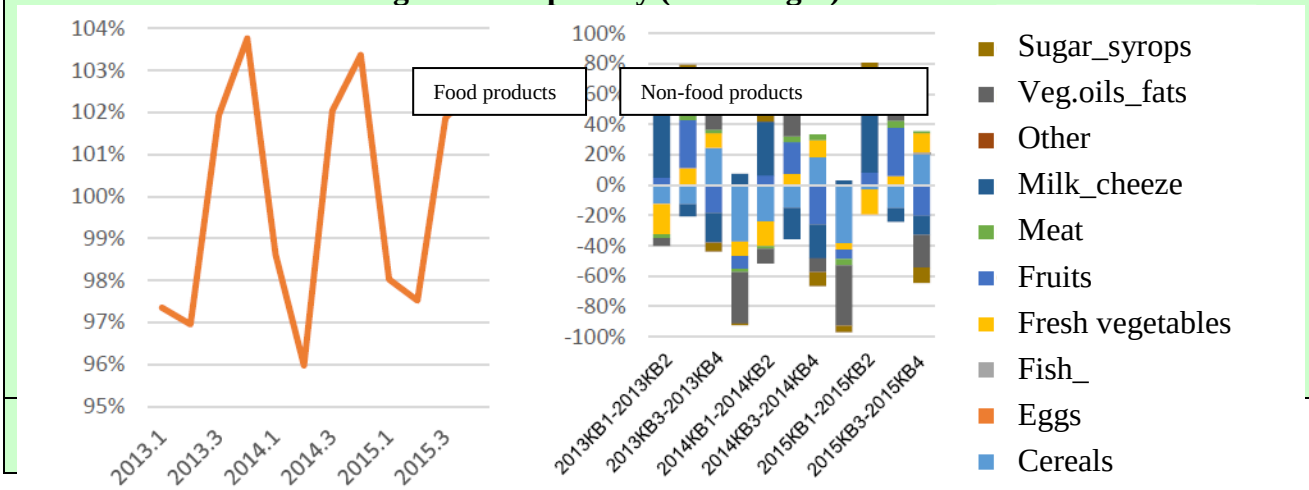


Box 1. Seasonality of the risk of food deprivation

In Tajikistan, the seasonal food deprivation is a stable trend: the winter and spring months are associated with an increase in the share of population whose consumption is below the line of extreme poverty, which is almost 8 percentage points higher than the average annual minimum indicator. The most critical situation in recent years was observed in the first quarter of 2014, when the level of food poverty was higher than the annual average indicator by almost 4 percentage points, which was due to reduction in consumption of cereals and vegetable oils / fats (Seitz, 2017).

Diagram 33

Seasonal fluctuations in the official level of food poverty (average annual rate = 100%), on the left and breakdown of changes in food poverty (on the right)



In Tajikistan, the largest share of food expenditures is spent on bread and bakery products.

[6] Clarification – the data will be updated.

The weak purchasing power of poor people and socially vulnerable groups is exacerbated by major problems, such as dependency of the country on imports of staple foods, especially wheat, and necessity to develop food systems towards more effective management of local production and imports.

Although the consumption of food per capita increases (especially in the part of crop production), but on average for most products, the recommended dietary norms are not met now. The corresponding level is still especially low in milk, meat products, fruits and sugar.

Table 7

Level of food consumption in the country, kg per person per year

		Years		Rational norm	Level of meeting the rational norm in 2016, %
		2011	2016		
1.	Bread products	160	151.5	130	116.5
2.	Potato	34	39.1	45	86.9
3.	Vegetables and melons	72.8	80.4	142	56.6
4.	Fruits and berries	40.0	30.4	78	39.0
5.	Sugar and confectionery	12.5	14.3	33	43.3
6.	Meat and meat products	11.8	14.8	60	24.7
7.	Fish products			12	
8.	Milk and milk products	54.5	39.5	251	15.7
9.	Eggs (pieces)	46	68	165	41.2
10.	Vegetable oil	14.3	17.1	12	142.5

At the same time, the existing diets by caloricity and the content of basic nutrients (fats, carbohydrates, proteins, including animal origin) do not yet fully meet the recommended standards.

The access of households to food in sufficient quantity, variety and quality, to ensure good health, depends on the ability of households to purchase food products as well as on the physical access of households to the market where they can buy food.

In Tajikistan, economic and physical access to food also suffers from high instability due to various risks, including:

(1) Extreme seasonality affecting the production of food and the availability of various products, and also, in many cases, the lack of physical access of rural communities to the markets;

(2) The impact of high fluctuations in the prices of imported food;

(3) The impact of risks associated with the labour migration and remittances that depend on external economic and political conditions and labour legislation.

Households may also face difficulties in livelihoods and incomes at different times of the year, from losing jobs, sickness of the family member or other problems. Households, who are already very poor, have heavily suffered from such events. Social protection mechanisms can play an important role in protection and stabilization of households' food security and access to basic services such as education and health –

Under such conditions, it is vital to conduct monitoring of food security situation in the country and, first of all – an economic access to food by territories, groups of population with different incomes. It is necessary to develop a methodology for monitoring and analysis of food security situation in the country, since existing approaches require serious adjustments in terms of clarification of the information base, a set of indicators, the nature of analysis, identification of disadvantaged regions with difficult access to food. There is a need to prepare a set of measures

for such territories with the view of reducing the risks of emergence of negative social phenomena.

5.4. Promotion of systems and norms for mandatory fortification of food products

Provision of micronutrients through fortification of staple foods is one of the main public health priorities.

The cost-effectiveness ratio is up to 30:1 in case of salt iodization, and 28:1 in case of flour fortification.

Based on cost-benefit analysis (CBA) of wheat flour fortification, it was revealed that failure to address this problem may result in economic losses of USD 878 million over the next decade.

Table 8

Some economic estimates of possible losses due to deficiency of vitamins and minerals[7]

	Consequences of deficiency of vitamins and minerals	in mln USD
1.	Nerve tube defects	3.125
2.	Neonatal mortality	61.935
3.	Maternal mortality	1.226
4.	Iron deficiency anaemia among children	394.507
5.	Iron deficiency anaemia among adults	417.154
6.	**Cumulated volume of economic losses over 10 years**	**877.947**

At the same time, in accordance to some estimations – over ten years, a successful programme in the field of flour fortification can reduce these losses by 302 mln USD.

In view of the relatively higher consumption of bread and bakery products in Tajikistan, wheat flour is an ideal means for fortification with iron and folic acid. As a rule, with each meal consumption, it is estimated that per capita consumption totals 410 grams per day. From 2007 to 2014, efforts were made to introduce and maintain wheat flour fortification that did not succeed, but starting from 2014 with implementation of the GAIN project – the Global Alliance for the Improvement of Nutrition, with financial support from USAID, cooperation with the Government of Tajikistan revitalized towards creation of enabling environment for fortification[8].

To date, until further acceptance of wheat flour fortification as an intervention to address the micronutrients deficiency, the Government of Tajikistan and other stakeholder are awaiting the results of the analysis of flour fortification to determine its economic efficiency in resolving the issues related to iron and folic acid deficiencies.

In 2016, the Parliament of the country developed a bill "On Fortification of Flour", but there is yet no legislative verdict on adding a premix of micronutrients to flour. The requirements for fortification set forth in this law also regulate the flour imported from Kazakhstan and the Russian Federation.

According to the Law of the Republic of Tajikistan "On salt iodization" and other resolutions of the Government of the RT, which came into force in recent years, the relevant entities are instructed to ensure iodization of salt for home consumption, for use in food industry enterprises, and also as animal feed. In Tajikistan, according to the law, universal iodization of salt is under strict control of the state. Pursuant to the state standard for iodized edible salt, the content of iodine in iodized edible salt should correspond to 10% (40 mkg). The mass fraction of the chemical microelement must be strictly observed. All this should be indicated by manufacturer on the label, including the form of iodine. TajikStandard should monitor and check the quality of edible salt in retail outlets. Sale of non-iodized salt and its importation into the republic, in accordance to the current legislation, is categorically disallowed.

[7] Food Fortification in Tajikistan: A Cost-Effective Strategy for Sustainable Economic Growth/ *USAID*, GAIN, June 2016

[8] The progress on implementation of the mentioned project will be provided later.

BOX. In Tajikistan, a number of national and regional projects on fortification of food products are implemented:

1. UNICEF regional projects on salt iodization during 1990s. While the national and regional aspects of advocacy have been successful in creating demand and government support, the iodized salt industry has faced constraints in maintaining production and supply. Thus, this project revealed that the financial support for procurement of technology and production resources was not sufficient to stimulate the continuous production of iodized salt. On the other hand, the programme on early flour fortification faced difficulties in maintaining consumer attractiveness; perceived and real changes in organoleptic properties of fortified flour led to a poor reputation of fortification of food products in the whole region.

2. Regional initiatives of the Asian Development Bank (ADB) and the Japan International Cooperation Agency (JICA) for fortification of salt and wheat flour in 2001 and 2005. In the frame of the first project, a regional network of marketing, distribution, rules for trade in iodized salt and fortified flour was piloted. The second project was aimed at strengthening and sustaining the progress achieved due to the fact that more attention was paid to supply chains, demand creation and regulation. Both projects demonstrated some success in sentinel areas and in obtaining political motivation for enacting mandatory laws on fortification of food products. However, these projects have also suffered from a lack of key investments in regulatory and legal oversight and lack of stakeholders' participation necessary for sustainable food fortification.

3.

6. PROVIDING FOOD SECURITY THROUGH MORE RATIONAL USE OF NATURAL RESOURCES IN THE CONTEXT OF CLIMATE CHANGE

6.1. Setting objectives

Risks associated with climate change and adaptation measures on reducing consequences of these risks for the population and key industries of the economy are important elements of the National Development Strategy of Tajikistan for the period to 2030.

Over the last several decades, natural disasters, especially those related to climate change, are causing ever more serious damage to the country's agriculture. It is estimated that during the period from 1990 to 2017, there were 65 natural disasters in Tajikistan affecting more than 6.8 mln people with the economic damage of mover USD 1.8 bln. USA (EM-DAT- www.emdat.be). The country is exposed to various natural disasters, including droughts, floods, earthquakes and landslides. At the same time, the level of danger of these disasters in the country is estimated as "very high" (INFORM, 2017). At the same time, there are problems in providing a systematic assessment of damage and losses to agriculture caused by natural disasters, because there are limited human, technical and financial resources for conducting such assessments.

Some examples of the consequences of severe drought:
- in 2000-2001, losses were estimated at the range of 5% of GDP (World Bank, 2009). At that time, in almost all regions of the country, the precipitation was below average (on average 60% of the norm), and the volume of water in the rivers was approximately 40-85 % (FAO and WFP, 2001). This led to a decrease in crop yields by 30-40% and availability of water to the population, and, in general, to an increase in undernourishment and inadequate nutrition.
- In 2007-2008, yields decreased by more than 40% (CAREC, 2015). Combined with the global increase in food prices, this has led to an increase in the number of undernourished people to 2.2

million people (FAO, 2008).
Such assessments are necessary to better understand the factors of vulnerability and threats, as well as to make more informed decisions and improve the effectiveness of measures and investments with the view of reducing risks.
To solve the interrelated problems of food security and climate change, the large-scale transformations of production systems are needed.

It can be identified four sectors that are both prone to climate and priorities for development: (1) energy, (2) water resources, (3) transport, and (4) agriculture.

Agriculture is one of the most risk-prone sectors in the country. Tajikistan is deemed a country being more vulnerable to climate change in Europe and Central Asia, and according to the global index INFORM, it is ranked the 56th place, which indicates the highest level of vulnerability among other countries[9]. The main factors for natural disasters, which have negative consequences, are unsustainable agricultural practices and ineffective management of natural resources. The low ability to adapt the agrarian sector has serious consequences on ecosystems as well as on livelihoods of the rural population.
Of the 180 countries ranked by the global adaptation index of the University of Notre Dame, Tajikistan ranks the 111th. Tajikistan ranks 78th among the most vulnerable countries and 52nd among less prepared countries. In the Index of Long-term Climate Risks, Tajikistan ranks 29th.
During the period of 1940 – 2012, Tajikistan experienced an increase in temperature of 0.1ºC-0.2ºC for every decade of this period. There is an increase in the number of days with a temperature of 40ºC and above. During 2001-2010, the recent recorded trends of the warming show that the average temperature for each decade was 0.8ºC higher than the average for the districts located at 1000-2500m above sea level. The annual volume of rainfall increased from 1940 to 2012, by 5% -10%.
Moreover, resources for emergency measures in case of major crises are limited, and measures for stabilization of the market are largely limited. The government set the strategy to ensure food security by increasing domestic production and self-sufficiency of the main agricultural crops, against significant imports of wheat and other food products. Nevertheless, this puts the stability of food system at risk in the case of significant reduction in local production, fluctuations of prices in regional markets and a decrease in the purchasing power of the poor or other crises.
Women are considered to be more vulnerable to adverse effects for health and nutrition caused by climate change, for example, in case of reduction in food production followed by a decrease in consumption of food products, income and purchasing power. Two thirds of those who suffer most from natural disasters are women, girls and boys.
Limitation in land resources, high population growth rates, soil degradation and water loss, damaged irrigation canals, irrigation and drainage systems, where 93% of the country is covered by mountains, are also challenges facing the agricultural sector.
In Tajikistan, a change in temperature and precipitation of sediments is well observed. Over the past 65 years, in valleys and high mountains, the temperature on average has increased by 0.7-1.20 ^{0}C and 0.1-0.70 ^{0}C, respectively, and in cities by 1.2-1.90 ^{0}C. Due to the impact of climate change, glaciers of the country have faced changes, and during the last 50-60 years, according to some estimations, these glaciers lost 20% of the volume and 30% of the area (Water for Life Conference, Dushanbe, 8-10 June 2015).
The OSCE Study (2010) focuses on the physical consequences of climate change, the potential impact on natural resources, the impact on key sectors of the economy, public health, life style of local communities, strategies and adaptation programmes, review of the legislative framework and the national programme of action. The CAREC study (2013) assesses the current trends and impacts of climate change in the Central Asia countries as well as possible consequences and

[9] INFORM – global, open source for risk assessment for humanitarian risks and natural disasters.

adaptation problems.
Some researchers believe that climate change can potentially exacerbate poverty by decreasing yields of agricultural crops, rising food prices and increasing the incidences of diseases penetrated through water and increasing the frequency and severity of disasters (Heltberg et al., 2010). Their results show that especially the eastern mountainous Districts of Republican Subordination (DRS), lower reaches, hills in the southern districts of Sughd and Khatlon regions are the most vulnerable due to climate change.
Studies indicate that among 28 countries in the region, Tajikistan is the most sensitive to climate change[10] and has the least adaptation capacity[11].
The relatively high values of the sensitivity index indicate a higher vulnerability to climate change, while a small value of the adaptive capacity index indicates a lower adaptation capacity of the country.
According to the estimates, in Tajikistan, as a result of impact of the high level of emissions and lack of adaptation capacity, by 2050 and 2080, in comparison with the current state, the food security will deteriorate by 24 and 43%, which is deemed the highest among Central Asian countries (WFP, Met Office Hadley Center).

Table 9.

Food insecurity index, %

	2050	**2080**
Low level of pollution and high adaptation capacity	4	9
Low level of pollution and low adaptation capacity	11	4
Low level of pollution and lack of adaptation capacity	18	19
Average level of pollution and high adaptation capacity	9	3
Medium level of pollution and low adaptation capacity	15	9
Medium level of pollution and lack of adaptation capacity	23	24
High level of pollution and high adaptation capacity	10	16
High level of pollution and low adaptation capacity	17	29
Medium level of pollution and lack of adaptation capacity	24	43

Source: WFP, Met Office Hadley Centre. http://www.metoffice.gov.uk/food-insecurity-index/

Over the past decades in Tajikistan, the ambient temperature has been growing by 0.1 ^{0}C per annum. The current surface of glaciers as a reservoir and regulator of water supply regulator "according to preliminary estimates, glaciers (2003-2013) cover 7,000 km or 4.8 percent of Tajikistan's land area, whereas in the mid-20th century, the area of glaciers covered 6% of the country's territory "(Third National Communication, UNFCCC, 2014).

Lack of water resources in Tajikistan. Water is an indispensable resource for agricultural production, therefore, overcoming the problems of rational irrigation and water use is extremely important to ensure sustainability of food systems. According to the data on fresh water intake from renewable sources, it was revealed that Tajikistan suffers from acute shortage of water (91%). According to the forecasts of the World Resources Institute, by 2030, Tajikistan will experience a "high" level of "water stress". In this regard, institutional coordination and cooperation at all levels is essential to ensure integrated water resources management with the

[10] Climate change sensitivity index is based on physical indicators (accessible renewable water resources per capita and air pollution level), economic indicators (share of employment and cost of assets), share of population over 65 years old (as the most sensitive group pf population) and economic indicators reflecting the importance of agriculture in the economy (share of employment and cost of assets). More details are provided in Fay et al., 2010).
[11] Adaptation capacity index includes social (inequality in incomes), economic (GDP per capita) and institutional measures. More details are given in Fay et al., 2010).

participation of all stakeholders.

6.2. Changes in productivity of agricultural crops

Barley is one of the crops that is subject to climate change. Considering the similar growth rates of the productivity of barley, one can expect the growth in productivity by almost 19 and 13%.
Productivity of wheat in the face of climate change remains more or less at the same level.
The effects of climate change are significant for corn. Productivity of corn in the face of climate change by 2050 is 27% less than the baseline scenario.
Rice is less sensitive to climate change, at least in context of Tajikistan, than other crops. Given the current growth rate of productivity, by 2050, the productivity of rice will increase accordingly by 38% in comparison with the baseline year. Productivity of vegetables also has some downward trend.
A more or less similar picture of the impact of climate change can be observed in the case of fruits, as was the case with vegetables. Climate change will lead to the decrease in yields in 2050, after a slight increase in 2020-2040 in comparison with 2015.
The reverse situation can be seen with the case of potatoes. The gap between climate change and climate change scenarios is also becoming significant by 2050, but yields are much higher in the climate change scenario than in the baseline scenario of non-climate change.
Also, the reverse picture can also be observed in the case of cotton. The cotton productivity starting from 2025 is insignificantly higher in the climate change scenario than in the baseline scenario.
Tajikistan faces a rapid population growth, as a result of high birth rate. Population growth leads to фт increase in demand and a shift in the demand curve up the supply curve. At the same time, need to note that the global price changes that affect supply throughout the world will lead to the shift in domestic supply. On the other hand, the supply will decrease in response to climate change and continues process of land degradation and water scarcity, with some exceptions at the level of agricultural crops, as the results of the present review show. Moreover, the restriction of natural resources, such as arable land and water, limits the growth rate of production.
Climate change, which is the cause of declining yields, shifts the domestic production curve downward, and vice versa.
Climate change has a negative impact on the demand side, being relatively significant or insignificant, depending on crops. For instance, the demand for cotton, fruits and vegetables for the entire observed period is insignificantly lower (on average 1-1.5%) in the climate change scenario, while the demand for potatoes, for example, is 7% less in the climate change scenario, compared to the baseline scenario (Figure 6.4.7.).
Ultimately, compensation mechanisms are linked to the situation with net trade in response to changes in supply and demand.

6.3. Food security and access to food products in the face of climate change

Climate change will affect all four aspects of food security: food availability, food accessibility, food consumption and the stability of food systems. Also, climate change will affect human health, livelihoods, food production and distribution channels, as well as changes in purchasing power and market flows of food (World Food Programme [WFP], 2014).
The availability of food depends on the temperature change, which in turn affects the yield and depends on changes in the structure of precipitation that affect the quality and quantity of the crop. On the other hand, climate change leads to higher prices and causes an obstacle in access to food for the most vulnerable groups of people living with relatively low incomes. And the share of income spent for food needs will increase substantially to meet consumer needs. In addition, climate-related risks affect calorie intake, which causes disease and hunger, thus reminding a vicious circle. The volatility of production caused by climate change is making its adjustments in behaviour of individuals and public policies on food security, causing instability in the form of food shortages, access and use of products (WFP, 2014).

The results of studies by various authors show that climate change is the main problem of food availability in the future. In 2050, the availability of food per capita in the climate change scenario is two percent less than in the baseline scenario without climate change. In spite of increase in food supply by 14 and 12% in 2050, against 2015, respectively, in the baseline scenario and climate change scenarios, because of population growth, the problem of food availability will remain topical.

Climate change leads to an increase in the number of malnourished children. The number of children suffering from malnutrition will decline annually throughout the forecast period, and in 2050 their number will decrease by 32% and 29%, respectively, in the baseline scenario without climate change and climate change scenario.

Studies show that climate change will lead to rising costs for agriculture. For example, in 2050, the costs of agriculture in the climate change scenario exceed the corresponding figure for the baseline scenario without climate change by 7%.

The results of researches demonstrate that climate change is a challenge to food security of the country, the consumer loses well-being, whereas the producer will benefit from higher prices, provided the yield of most crops have a downward trend.

7. SECTORAL PRIORITIES FOR STRENGTHENING FOOD SECURITY AND ENSURING QUALITY NUTRITION IN TAJIKISTAN

Sustainable management of food security, access to food should be based on three components:

- level 1 – investments in land and water resources management, rural infrastructure;
- level 2 – investments in agriculture and food industry, where economic entities deal with rational management;
- level 3 – investments in human capital. Poor, non-interested and unqualified rural population – key factor of ineffective use of land and water resources.

7.1. Agriculture sector

For the food market, the most suitable is a mixed type of regulation, which is based on the following principles:

- realization of the development priorities of each region with special focus on social sphere to meet the needs of the entire population;
- maintaining the most important proportions of the market sphere, the ratio of the volumes of commodity production and demand, goods and money supply;
- selection of the most effective organizational forms of regulation of market relations and, first of all, the creation of an effective commodity distribution system.

Based on these principles, the work is justified by the system of state regulation of the food market, which includes economic, organizational and administrative measures.

The task is to increase agricultural productivity and provide affordable food products for all. Continuous population growth complicates the organization of food supply, postulating the need to increase the levels of productivity in agriculture. To ensure food security throughout the world, without further degradation of the environment, it is necessary to develop and implement sustainable agricultural practices.

In economic measures, it is proposed to stimulate demand and supply for food in the form of:

- procurement for state needs with the participation of market entities of all forms of management;
- concessional lending, including under the bond of the future harvest;
- designing a mechanism and development of leasing of pedigree cattle, agricultural machinery and equipment for processing;

- enhancing the system of risk minimization and insurance of transactions on the market;
- formation of an effective marketing system for agricultural and fishery products and interstate commodity circulation system;
- regulation of the equilibrium state of the food market, including:
- applying commodity and financial interventions, when necessary;
- creation of state and interstate food reserves with development of the necessary regulatory framework;
- formation of a pricing system based on indicative prices for the main types of products;
- regulation of imports (through application of measures of tariff-non-tariff regulation of the import of agricultural and food products);
- antimonopoly regulation;
- promotion of export of competitive agricultural products based on:
- optimization of production structure by areas and targeted purpose of production (food, raw materials for processing, export funds, economic needs) in accordance with the natural and economic conditions of the regions of the country;
- development of raw material zones for the production of agricultural raw commodities for processing enterprises to their full need;
- development of production of new types of food products of functional purpose, scaling up production of semi-finished products of high degree of readiness;
- development of waste-free technologies in all branches of the processing industry; exploring possibilities of using secondary processing products for fortification of feed rations in livestock;
- enhancement of an information system for export support, networks of information and marketing centres, insurance of export contracts;
- development of specialization and interstate division of labour taking into account the natural, climatic and economic conditions of the state;
- increase an inflow of investments into agriculture through establishment of joint ventures that develop mutually beneficial interstate cooperation, exchange of assets and cross ownership over them, the formation of strategic alliances in agriculture.

Organizational measures include:
- formation of a reserve food fund and conducting commodity and procurement interventions;
- implementation of exchange mechanisms for formation of prices for food and raw materials, that allow to forecast changes in market conditions, to insure marketing risks of entities;
- regulation of commodity flows in the system of regional wholesale food markets based on logistics;
- development of market infrastructure on the basis of concessional lending for the construction of wholesale markets, storage facilities, refrigerators, commodity exchanges, terminals and other structures serving the goods turnover system;
- intensification of work on presentation of investment opportunities with the view of attracting investment;
- arranging fairs, exhibitions of products produced by the agro-industrial set of the country.

Administrative measures include the following areas:
- adoption of state standards aligned with international standards and technical regulations of food;
- development of the unified approaches to assessing the quality and safety of food;
- monitoring of food safety and quality;
- control over the use of unregistered food additives and flavours, pesticides, means of fighting the animal diseases and so forth;
- measures to certify and stimulate the production of high-quality products;
- information exchange at inter-governmental level between the national supervisory authorities of the CIS member-states on products dangerous to human life, health and heredity of people, property and environmental protection identified by supervisory authorities and other governmental regulatory bodies.

The regulatory system is very complicated and has both direct (subsidies and compensations) and indirect (support for development of market infrastructure) character. For specific conditions and markets, the design of regulators may vary, but the basis of its application should be the adequacy of economic conditions, market conditions and expected development trends.

The task of ensuring full food security will be successfully resolved only under active state regulation of its own production, with the attention of public institutions to issues of efficiency and achievement of optimal ratio between domestic production and import of food products throughout the whole range of their varieties.

While it is often mentioned that the country lacks investment in the economy, the solutions offered by international community are not always adapted to local needs, or in other words they lack a long-term vision. The choice of a technology or strategy that we consider to be good for the development of agriculture in the country should be discussed with various stakeholders: scientists, farmers, food producers for households and others. One of the mistakes observed in the past in Tajikistan as well as in other countries – the tendency of replacement of varieties of species traditional for the country, which adapted to their special environment, species that are designed to produce a high yield only in response to the high contribution of mineral fertilizers and pesticides.

Such attitude, instead of solving the problem of poverty, contributes to it.

Before commencing national or regional procurements, it is necessary to study the formal and informal seed sectors of the country, which is more convenient compared to the seeds purchased in industrialized countries, mainly too expensive rather than adaptive to the local conditions. Import of seeds should be approved by national and regional experts, in order to avoid problems related to the adaptation capacity and further use by farmers. Coordination among organizations working in the same sector as agriculture, as well as projects aimed at developing the seed sector, is highly recommended.

Those farmers who have access to irrigated lands, or who are able to provide the irrigation system with their lands, have better production and income. In the same way, access of households to clean drinking water limits the susceptibility of households to waterborne diseases and improves family health. In Rasht Valley, about 50 percent of population depends on the river being a source of drinking water, while only 53 percent of the arable land is provided with irrigation systems.

Small sizes of the plots of households - food producers are not adapted to existing agricultural machinery.

Poor conditions of many households usually make the use of such agricultural machinery economically inefficient. Therefore, livestock could be an intermediate solution for households experiencing a shortage of labour force.

Generally, for the whole industry - yet impossible to increase the return on use of agricultural resources and build into vertical food chains.

At the same time, the main tools for solving food security issues are the increase in productivity of agricultural crops by introduction of intensive methods of agricultural production and the expansion of sown areas. However, at the same time, a comprehensive integrated and interrelated approach is important to effectively use water and land resources. This will help to balance the resources required for management of lands with the view of agricultural use, to improve the "habitat". The development of the country’s economy and effective solution of social issues depend to a large extent on solution of issues related to the level and intensity of the use of land and water resources.

At that, water resources management might help to increase the efficiency in agriculture as well as in general the degree of water availability. While water use remains not entirely effective – the level of water consumption per unit of production of GDP is high - USD 0.35 per 1 cubic meter, which is 8 times lower than middle-income countries, water losses are significant – not less than 40%, the population's access to water and sanitation is the most problematic in rural areas. If the

current trends in water use continue, this will disallow to reveal the capacity of agriculture, to ensure water availability for other sectors of the economy and households.

7.2. Health and education sectors

With a view to providing conditions for protection and enhancement of health and improving the effectiveness of student learning through sustainable nutrition development, a "Strategy for Sustainable Development of School Meals in the Republic of Tajikistan for the period to 2027" was developed and approved (Decree of the Government of the Republic of Tajikistan, September 29, 2017, № 456). Attaining the goals and objectives of the mentioned strategy will be through development and adoption of short- and medium-term programmes, pilot projects and other activities and will contribute to the establishment and development of quality school meals in the country.

In the frame of implementation of the mentioned strategy, as well as the "Concept for the development of school meals in general education institutions of the Republic of Tajikistan" (Decree of the Government of RT, February 28, 2015, No. 102), by 2020 all school canteens should be repaired and provided with the necessary equipment. Thus, in order to implement this strategy, the Government of the Russian Federation allocated 6.6 mln USD.

Taking into account the national peculiarities of the traditional diet and domestically produced products, the Ministry of Health and Social Protection of the Republic of Tajikistan designed a "Collection of recipes for school meals", comprising of 127 recipes, which facilitates organisation and provision of quality nutrition for schoolchildren. A Resource Centre for training of school cooks has been established.

In accordance with the Implementation Plan of the Concept for the Development of School Feeding, with the technical support of WFP and the Social and Industrial Food Service Institute of the Russian Federation, activities started to expand the pilot schools and the events titled "School Meals Days" are annually held in the pilot cities and regions.

Within the framework of the USAID Feed the Future (*Ғизо ба хотири оянда*) project, maternity houses and children's clinical departments in the pilot regions are equipped with modern medical equipment and other medical facilities (incubator, neonatal equipment, refrigerators, air conditioners, etc.).

With the aim of achieving certain successes and coordinating inter-ministerial activities, expanding effective nutrition measures in the field of nutrition within the framework of “Global Movement for Scaling up Nutrition (SUN)”, a Coordination Council was established under the Ministry of Health and Social Protection of Population of the Republic of Tajikistan and its action plan was endorsed.

Need to note that solutions to the problems of ensuring food security and nutrition, as well as problems of improving access to health services (especially primary health care), it is impossible to resolve by one sector, for instance health, but rather it is necessary to use an inter-sectoral and multilateral approach, to have mutual activities between various government bodies (agrarian, economic) and non-governmental bodies, including the civil society, to use public-private partnership. It is extremely important to create Councils on nutrition and food security and to develop multidimensional and sectoral programmes of actions aimed at mobilization of available financial and human resources, taking into account the natural and climatic conditions.

It is equally necessary to strengthen information and advocacy works for introduction of healthy lifestyle models, enhancement of physical activity of population, including measures towards prevention of malnutrition, monitoring over the quality and safety of food products, information accessibility of adequate nutrition systems, and intensification of promotion of exclusive breastfeeding of infants.

In the frame of the Concept of improving school meals, the following steps are envisaged:

• *First stage* (2015-2016). At the first stage, the following actions shall be accomplished: (1) development and adoption of the Strategy for Sustainable National School Meals Programme, (2) development of a regulatory legal framework for school meals, (3) creating an organizational

and management infrastructure, (4) elaboration of a Programme of pilot projects for introduction of effective models of arrangement of school meals in accordance with international quality standards.

• *Second stage* (2017-2020). In the second stage, the Strategy for a Sustainable National School Meal Programme is implemented through: (1) development and implementation of a short-term National School Meals Programme, (2) large-scale introduction of new school meals models, (3) expansion of the School Meals Programme, and (4) improvement of production base goods distribution infrastructure that affect the effectiveness of the School Meals Programme.

• *Third stage* (after 2020). The third stage is the transition to independent implementation of programme of improving school meals within the annually allocated funds from the State budget and other sources that are not prohibited by legislation of the Republic of Tajikistan, the formation of a modern school meals industry is being finalized in line with international standards of the modern and effective school meals programmes.

7.3. Social protection

Social protection system is an important tool to fight hunger. Efforts are aimed at providing monetary support in promoting food security and nutrition, access to health care and education, especially for children.

At the same time, actions to distribute food and promote employment are also of great importance.

By 2018, during the reform of the social protection system in Tajikistan, it was possible:

- develop and implement a pilot implementation of a new program of Addressed Social Assistance based on the revised method. Full coverage of this program nationwide is planned before the end of 2018;
- to take the first steps towards integrated pension reform, the creation of a single register and the improvement of administrative procedures;
- to ensure progress on the observance of the rights of persons with disabilities to social protection in accordance with the approach laid down in the UN Convention on the Rights of Persons with Disabilities. Work in this direction needs to be developed, including in the direction of increasing coverage and volume of benefits.

The replacement rate, or average pension as a percentage of the average wage (on average over five years 32%) is not yet high enough, and it indicates that ensuring adequate protection, taking into account the prospects for growth in the number of persons of retirement age, will require more significant financial costs. That is, the gradual aging of the population (including as a result of a certain increase in life expectancy) will put pressure on the financing of the pension system in the future, limiting its ability to provide effective and sustainable support to the elderly population if the systems for supporting the development of productive and legal employment are not activated.

Thus, the social protection system in Tajikistan currently includes (1) social insurance and pensions based on programmes aimed at providing social insurance payments that replace income for the employed population (supplemented by programmes for those whose contribution to the mentioned programmes is insufficient), (2) social assistance programmes in the form of cash benefits and (3) social services.

The system of social insurance and pensions provides social payments for replacement of income for elderly, people with disabilities and in cases of loss of the breadwinner (loss of income as a result of long-term inability for work), as well as in case of illness, child care and loss of job (loss of income as a result of short-term inability to work). In terms of category of people, these programmes are designed for persons employed in the formal sector of the economy. For those who have insufficient work experience or have not contributed sufficient money, a programme of social pension is in place. In addition, the insurance system includes one-time cash benefits to cover the costs of funeral or child birth. The system is funded by contributions from employers and from taxes in general. Collection of contributions for social insurance is the task of tax

authorities. The Social Insurance and Pension Agency under the Government of the Republic of Tajikistan and its local divisions at the district /city level manage the social insurance and pensions system. With regard to the unemployment benefit programme, a part of administrative functions is performed by the Ministry of Labour, Migration and Employment of the Republic of Tajikistan along with its activities on expansion of job opportunities. Social assistance programme in the form of cash benefits (the system of targeted social assistance (TSA), as mentioned earlier, consists primarily of disbursing cash benefits on certain conditions for low-income families, a programme to compensate for electricity fees and other types of material and lump-sum cash assistance, to citizens in difficult life situations.

Social services in Tajikistan traditionally mean providing care oriented to public institutions, for example, care in in-patient institutions, and more recently, day care services. Beneficiaries are mainly children-orphans, people with disabilities and aged citizens.

According to the available data, expenditures on social protection in Tajikistan are estimated over 1.5 bln TJS or more than 4% of GDP. The system of social insurance and pensions accounts for almost 80% of spending in social protection sphere, while the share of cash payments in the form of social assistance and social services is 11% and 2% of social protection expenditures, respectively. The volume of the state spending on social protection in Tajikistan in general has a growth trend.

In the context of implementing government interventions in the area of social protection of population aimed at creating conditions that ensure a decent life and reduce poverty in the country, special emphasis is being made on overcoming the low level of food self-sufficiency, improving food security and improving the quality of food.

In light of this, the adopted policy documents of the country, such as "National Development Strategy of the Republic of Tajikistan for the period to 2030", "Mid-term Development Programme of the Republic of Tajikistan for 2016-2020", "The Strategy of Nutrition and Physical Activity in the Republic of Tajikistan for 2015- 2024" and other afore-mentioned issues, such as the introduction of a full-fledged nutrition system and the food security are outlined as key tasks, which should be resolved during the next five years.

Resolving the identified tasks on the way to a new growth model in these documents are indicated as one of the necessary and key tools in the spheres of increasing efficiency and diversity of the real sector of the economy, enhancing productivity of human capital. Thus, for instance, in Section 1.2.3. Goals and priorities of the MtDP 2016-2020, based on the objectives of future development stipulated in the NDS-2030 and their implementation in the first stage, in MtDP 2016-2020, the issue "overcoming the low level of food self-sufficiency" is identified as a goal, but "ensuring equal access to social services, transition to a full-fledged nutrition system and sustainable provision of budget revenues" are highlighted as important priorities.

Therefore, implementing the policy in the area of social protection of population, the Government of the Republic of Tajikistan undertakes similar adequate measures towards development of the country's economy, its stable growth and stabilization of the financial situation, which will ultimately ensure both the social well-being of the population and access to adequate nutrition, in particular and to food security, in general.

8. STRENGTHENING FOOD SECURITY AND ENSURING ADEQUATE NUTRITION

Changes occurring in the global and national economy necessitate adjustment of the country's food security requirements in the medium and long term. From one hand, population growth, changing demographic structure and the expected increase in the population's incomes in future will likely contribute to a significant increase in demand for food products, as well as changes in the structure of nutrition due to a changing lifestyle and behavioural stereotypes. At the same time, achievement of the set tasks will be subject to solving problems of some reduction of water supply (because of climate change), degradation of the quality of land, insufficient efficiency and

productivity of agricultural production, insufficiently effective functioning of institutions in the agrarian sector. In addition, challenges are linked to the expected trends in rising food prices in world markets due to the growing demand for it and a reduction in supply caused by climate change.

According to the UN forecasts, during 2017-2030 the total number of population of the country will increase by 2.3 million people (UN DESA, 2017). As before, majority of the population will live in rural areas (69.2%).

Table 10

Forecasts by number of population and urbanization level in Tajikistan

Years	Population number, mln	Population growth, %	Share of urban population, %	Share of rural population, %
2017-2020	8.9-9.5	6.2	27.5	72.5
2021-2025	9.6- 10.4	7.3	28.8	71.2
2026-2030	10.5- 11.2	6.3	30.8	69.2
2017-2030	**8.9 – 11.2**	**25.5**		

*Source: Population - United Nations, 2017. Probabilistic Population forecast based on the World Population Prospects: The 2017 Revision. Population Division (http://esa.un.org/unpd/ppp/)

Along with the general increase in the population, the country expects an increase in its incomes, which will lead to an increase in demand for food products and certain types of food products, caused by changes in the structure of consumption.

Nowadays, there is a problem of food security, provided the supply of population with basic products of the own production is below the threshold (80%) determined in the Food Security Programme.

Table 11

Production and import of foodstuffs in the Republic of Tajikistan, on average for 2015 - 2016[12]

Food commodities	Needs of population[13], thous. tons	Actual production, thous. tons	Import, thous. tons	Actual supply, thous. tons	% supply	% self-provision
cereals	1151,9	1400,6	1109,2	2509,8	217,9	121,5
potato	406,8	892,8	28,3	921,1	226,4	219,5
vegetables and melons	1258,1	1708,1	930,2	2638,3	209,7	135,8
fruits and grape	705,6	332,0	34,9	366,9	52,0	47,1
milk and dairy products	2204,3	903,5	10,0	913,5	41,4	41,0
meat and meat products	530,4	154,4	50,7	205,1	38,7	29,1
vegetable oil	106,3	10,0	81,1	91,1	85,7	9,4
sugar and candies	292,2	14,2	121,6	135,8	46,5	4,8

Moreover, the consumption is not quite healthy – relatively more consumption of cereals substitutes the shortage in consumption of fruits, milk and meat products.

Table 12

Needs and consumption of food products, on average for 2015-2016

[12] Clarification – will be estimated /re-estimated taking into account the data /results of 2017 (so far, no data on import available)

[13] Per consumption norms, including gender and age structure of population.

Food commodities	Demand of population[14], thous. tons	Households consumption, thous. tons	Over-consumption (+), under-consumption (-) versus demands, thous. tons	Over-consumption (+), under-consumption (-) versus demands, %
Cereals	1151,9	1188,0	36,2	3,1
Potato	406,8	308,2	-98,6	-24,2
vegetables and melons	1258,1	688,7	-569,4	-45,3
fruits and grape	705,6	308,2	-397,4	-56,3
milk and dairy products	2204,3	495,0	-1709,3	-77,5
meat and meat products	530,4	125,7	-404,7	-76,3
vegetable oil	106,3	135,2	28,9	27,1
sugar and candies	292,2	117,9	-174,3	-59,6

At the same time, need to mention the existence of errors in statistical reports – per the reports, the supply of cereals not less than 2.5 times more than demand of population, but the dynamics of prices does not demonstrate decline (annual average growth rate 2%). If we take into account the additional demands for cereals - for industrial processing (based on existing production capacities), the formation of fodder and seed stock, the volume of supply still exceeds the demand by 1.2 – 1.3 times. Approximately the same situation with other crops (for example, potatoes). Therefore, actions towards improving accountability should be part of a common package of actions in the area of evaluation and monitoring of food security.

At the same time, the share of food products in the total volume of imports does not decrease and remains significant (over 20%), which testifies both the inadequate realization of its own capacity for production of food products and about vulnerability with a decrease in purchasing power (including due to a decrease in remittances).

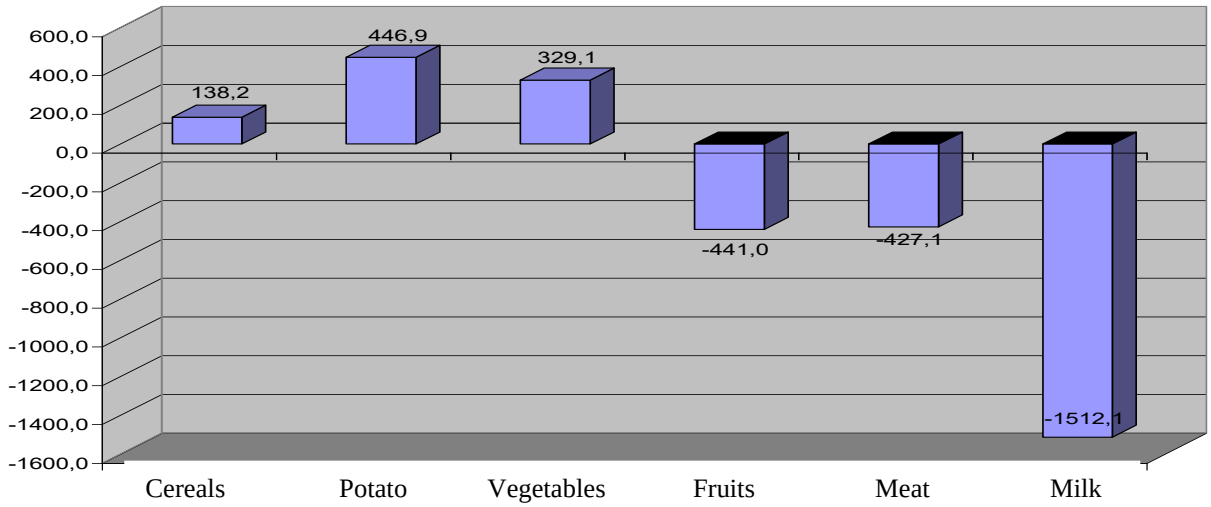
The main targets for progress towards ensuring food security in the framework of ensuring the availability of necessary amounts of food – will require an increase in the volume and optimization of the structure of food production based on forecast estimates of demand and preferences of population.

In the long term, *under the condition of preserving the volumes and structure of production of food products (at the level of 2015-2016)*, and if not to increase the productivity and cultivated areas, then the shortage of fruits and livestock products will be further aggravated.

Diagram 34

Food deficit in 2020[15], thous. tons

[15] Clarification – *if we focus only on the domestic production, and do not change the square of sown areas (acreage) and yield of crops.*



The main tools for resolving these issues - increase in the yield of agricultural crops through introduction of intensive methods of agricultural production and widening cultivated areas, but also a more precise justification of specialization of the country in the sphere of agricultural production.

At the same time, an integrated approach of actions is critical. Actions to strengthen food security in the medium term should be associated with ensuring of the following actions:

1. Measures towards prevention and prophylaxis of malnutrition through:

• supporting the exclusive breastfeeding programme for infants under six months to prevent nearly 20-percent mortality among children under five and reduce the factors of insufficient physical growth;

• prevention and resolving acute malnutrition among children (medium and severe forms) – awareness raising on proper nutrition, as well as close surveillance and treatment;

• supporting the practice of quality supplementary feeding of infants under six months and older;

• supplying food products with microelements to the most vulnerable with the view of reducing maternal and perinatal mortality, anemia and iodine deficiency;

• support in changing habits and behavior in the practice of feeding infants and young children (IYCF), including improving maternal nutrition.

2. A proper understanding of quality nutrition and hygiene in household, training of women (who make decisions in households on how and with what to feed the family) about rational nutrition; education of children at schools, raising their awareness on healthy nutrition and diversity of foods (including food that is processed and enriched with vitamins and micronutrients); teaching children – skills of cooking and preserving food.

3. Improving access to safe drinking water in communities and improving sanitation infrastructure.

4. Continuation of support to the programme of the state social protection in the area of quality nutrition, such as the national nutrition programme in schools, in order to improve nutrition and performance among children and to the maximum extend using the capacity of Tajikistan's youth in the economic development of the country.

5. Development of backup plans for timely and agreed actions to strengthen food security and ensure quality nutrition in case of crisis as a result of economic shocks, problems in agriculture or natural disasters. With the mentioned backup plans, it is necessary to include the state social protection schemes that provide access to foodstuffs, while creating production assets to strengthen the capacity to response to shocks (for example, a community infrastructure that enables to create a reserve stock of agricultural products).

In the long term, it is important to ensure the following areas of actions:

1. To restore and strengthen the role of the Food Security Council, delegating it the authority to effectively manage a multi-sectoral approach to strengthening food security and providing quality diet in accordance with the multi-sectoral platform of the SUN programme. Multi-sectoral management will ensure the positive impact of policies and all programmes on food security and nutrition (for example, in the spheres of agriculture, health and social protection) – that is, the issues of strengthening food security and ensuring quality nutrition will be included in all activities.
2. To ensure sufficient amount of allocations from the national budget to support the effectiveness of services in health and social protection systems, as well as create competitive conditions in agriculture.
3. To implement agricultural reform, since this sector is deemed the main one in strengthening food security and providing quality nutrition. To improve results, special emphasis should be given to supporting policies aimed at:
• support to diversification (variety) of products based on advanced agricultural practices and marketing of safe and costly food products throughout the year, including processed and fortified foods with vitamins and micronutrients;
• support to sustainable and integrated management and conservation of water and natural resources, with an emphasis on the efficient and equitable distribution of water for irrigation during cultivation of costly agricultural crops;

- bear in mind a special role of women, as well as limitations in their activities – not only as agricultural producers (for instance, access to land resources, market and financial means), but also as acting the key functions in the family (for instance, to increase free time for women – release them from some duties and responsibilities, in order to increase their time for taking care of the child – feeding, upbringing and having control over the income);
- increase the profitability and to enhance attractiveness of the sector, especially for small farmers – by strengthening the sustainability of value-added chains, expanding the agricultural sector and other means.

4. To scale up the coverage and improve the quality of services in the health sector and create an effective health and nutrition monitoring system to track key health indicators for the development of an appropriate policy and programmes.
5. To include the tasks of development and management of water and sanitation infrastructure and delivery of services in this field in public health policy.
6. To improve the coverage of target groups and scale up the coverage of social protection system to provide assistance to the most vulnerable and provide them with access to food.
7. To strengthen information systems to enhance food security and nutrition to: (i) support an integrated policy development in all relevant sectors; (ii) monitor key indicators; (iii) receive information on social protection and state insurance; (iv) ensure adequate action through cross-sectoral analysis and early warning.

9. MONITORING AND EVALUATION OF FODO SECURITY AND NUTRITION

Indicators featuring food security are the quantitative and qualitative state, which allow to evaluate its system based on accepted criteria.
The system of indicators of CSR should cover all areas of the Strategy, all types of resources used for its implementation and all the results achievable in the course of implementation of the Strategy.

International approaches to evaluation of food security

Food security is in the centre of attention of international organizations and intergovernmental bodies, of which Tajikistan is a member.

One can agree with the proposed system of indicators[16], which are applied to evaluate food security situation in four areas: economic food security.

- Availability of products (indicators of production volumes, yield /productivity, level of stocks, losses, etc. are considered);
- Availability of food (an economic opportunity of acquiring necessary amounts of food for the existing incomes, the possibility of food movement (through evaluation of the proportion of paved roads in the total length of roads, density of railways, etc. are analysed));
- Stability of food supply (an evaluation is made for the availability of sufficient quantities of food in different periods, changes in food prices, etc. (cases of natural disasters and social unrest are monitored));
- Food consumption (evaluated from the perspective of compliance of actual consumption with norms for nutritional value: by calories, protein, micronutrients, etc.).

Because of the high population growth rate, the share of agricultural land per capita in Tajikistan is steadily declining. If in 1970 for every citizen there were 0.17 hectares of agricultural land, in 2017 this figure is only 0.08 hectares. Such situation requires a radical review of the attitude to effective use of land as an indispensable pre-requisite for facilitating the sustainable provision of FS&N (food security and nutrition) through implementation of the following tasks[17]:

2.1 By 2030, end hunger and provide to everyone, especially to the poor and vulnerable groups, including infants, the year round access to safe, nutritious and adequate food.

2.2 By 2030, to eliminate all forms of malnutrition, including achievement of internationally agreed target indicators related to combating stunting and wasting of children under five by 2025 and meeting the nutritional needs of adolescent girls, pregnant women and lactating women and the elderly people.

2.3 By 2030, to double the productivity of agriculture and the incomes of small food producers, particularly women, representatives of indigenous people, family farms, pastoralists and fishermen, including by ensuring secure and equal access to land, other productive resources and agricultural production factors, knowledge, financial services, markets and opportunities to increase value added and employment in non-agricultural sectors.

2.4 By 2030, to ensure creation of sustainable food production systems and introduce farming practices, which will allow enhancement of viability and productivity and increase production volume, contribute to ecosystems conservation, strengthen the capability of adaptation to climate change, extreme weather occurrences, droughts, floods and other disasters and gradually improve the quality of land and soils.

2.5 By 2020, to ensure conservation of the genetic diversity of seeds and cultivated plants, as well as of agricultural and domestic animals and their relevant wild species, including through the appropriate maintenance of various banks of seeds and plants at the national, regional and international levels, and to promote access to genetic resources and associated traditional knowledge and joint use on the fair and equitable basis of benefits arising from their application at the internationally agreed terms and conditions

2.a. To increase investment, including through intensification of international cooperation, in rural infrastructure, agricultural researches and propaganda of agriculture, technological development and establishment of genetic banks of plants and animals with the view of strengthening the capacity of developing countries, especially the least developed countries, in the field of agricultural production.

2.b. To eliminate and prevent the introduction of trade restrictions and distortions in global markets of agricultural products, including through the parallel elimination of all forms of subsidies for agricultural exports and all export measures that have similar effects, in accordance with the mandate of the Doha Round of negotiations on development affairs.

2.c. To undertake measures to ensure the proper functioning of the markets for food and

[16] Formulated by FAO.

[17] On the basis of achievement of relevant indicators – See Annex M&E System – 1.

processed products and facilitate timely access to market information, including on food stocks, in order to help to limit the excessive volatility of food prices.

It should be noted that implementation of SDG 2 and its tasks is directly connected to the implementation of other SDGs and their tasks (See Annex M&E System-2):

Obviously, in order to track the progress of implementation of these Goals and Objectives, it is necessary to form an appropriate Monitoring and Evaluation System based on the System of Indicators covering all activities, all types of resources used for its implementation, and all the results achievable in the course of implementing these actions.

For Tajikistan, in the frame of M&E System of CSR: FS & N, the following levels of **monitoring and evaluation** could be proposed:

Global

• World trends, country comparison

• Agreed limited set of indicators, IAEG-SDG

- 232 indicators

- Since 2017, Tajikistan has received IAEG membership

• Carried out by international organizations

• Based on data provided by countries in database

- https://unstats.un.org/sdgs/indicators/database/?area=TJK

National

• M&E system: implementation of activities and achievement of results, for NDS and SDG

• National set of indicators, adequacy through compatibility

• Based on national data: National Statistical Reporting, administrative and alternative

In addition, the system of indicators of M&E of CSR will cover target indicators for the implementation of actions on ensuring FS in Tajikistan within the framework of the Strategies and Programmes of the **following ministries and agencies (see Annex M&E System-3):**

1. Ministry of Agriculture of RT;
2. Ministry of Health and Social Protection of Population of RT;
3. Ministry of Energy and Water Resources (in the context of providing access to clean drinking water);
4. Moreover, key Development Partners (in the context of implementation of strategies and programmes related to FS):

1. WFP
2. FAO
3. UNICEF
4. WB
5. UNDP
6. ADP
7. International NGOs.

The government undertook necessary steps towards creating a system for monitoring of food security in the country. At the same time, attempts to compare food security indicators in Tajikistan may face difficulties, since the government-approved indicators are not fully synchronized with the world's main food security indicators.

Traditional notes, reviews, reports on food security situation include, as a rule, analysis of a limited range of indicators – the level of self-sufficiency, production volumes, exports and imports, norms and actual consumption.

Obviously, it is advisable to reduce the set of indicators for analysis, to establish annual monitoring. It would be extremely useful to prepare annually or every 3-5 years (as part of the Report on the implementation of the MtDP 2016-2020 and subsequent MtDP) a National Report on food security situation in the country.

10. LIST OF MATERIALS (LITERATURE) USED

- Cycle of statistical publications on "Food security and poverty".
- National social statistics and household budget statistics - Statistical Agency under President of the Republic of Tajikistan in the form of publications and electronic format (www.stat.tj).
- National researches on private sector development, poverty, consumption
- From the MDGs to the SDG: achievements and challenges (WHO, 2017).
- Food security and nutrition in Tajikistan (Tajikistan Development Coordination Council, Dushanbe, January 2015).
- Food Environment Description in cities from Central Asia and Eastern European countries - Tajikistan (Project FEEDcities - Eastern Europe and Central Asia, 2017).
- The application of zero tillage technologies and intensification of pasture productivity will create economic benefits while reducing land degradation (CGIAR, 2015).
- Food security and cooperation programme in the field of agriculture in Central Asia with a focus on Tajikistan (UCA report, 2013).
- Impact of Tajikistan's accession to the WTO on priority sectors - the food industry (ITC, 2014).
- Analysis of the factors affecting the production and processing of food products oriented to export (NASMB, 2015).
- Ways of sustainable self-sufficiency of the region by food (as exemplified by the regions of Central Tajikistan) - Aliev O.M., 2012.
- Regional aspects of ensuring food security (on materials of the Khatlon region of the Republic of Tajikistan) - Tagoev B., 2013.
- Food security of the Republic of Tajikistan - Gulov I.M., 2011.
- Agrarian reform and establishment of market relations in the agriculture of the Republic of Tajikistan (theory, methodology, practice) – Rakhmatov Kh.B., 2009.
- Agrarian reform of the Republic of Tajikistan (theory, methodology, problems and solutions) - Ashurov I.S., 2008.
- Sustainable land and agriculture management (Center for Development and Environment (CDDC), University of Bern, Switzerland, 2011.
- Review of the agro-food trade policy in the post-Soviet countries 2015-16 (FAO, 2017).
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- Gender equality, social protection and rural development: view from the Eastern Europe and Central Asia (FAO, 2016).
- Migration, agriculture and rural development (FAO, 2016).
- Food security programme up to 2020 (FAO, 2016).

- FAO Regional Initiatives - Europe and Central Asia (FAO, 2015).
- Tajikistan: Expanding funding opportunities in rural areas (FAO and EBRD report, 2006).
- Voluntary guidelines to support the progressive realization of the right to adequate food in the context of national food security (FAO, 2004).
- Rising food and energy prices in Europe and Central Asia (the World Bank's Regional Office for Europe and Central Asia, 2010).
- National Development Strategy of the Republic of Tajikistan for the period up to 2030.
- Medium-term development programme of the Republic of Tajikistan for the period 2016-2020.
- The concept of improving school nutrition in general education institutions of the Republic of Tajikistan.
- Nutrition and physical activity strategy for the Republic of Tajikistan for 2015-2024.
- National Health Strategy of the Republic of Tajikistan for the period of 2010-2020.
- The Law of the Republic of Tajikistan "On Food Security (as amended by the Law of the Republic of Tajikistan of November 27, 2014 No. 1158).
- Food security programme of the Republic of Tajikistan for the period up to 2015 (approved by the Decree of the Government of the Republic of Tajikistan No. 72 dated February 2, 2009).
- Programme on Agriculture Reform of the Republic of Tajikistan for 2012-2020 (approved by the Government of the Republic of Tajikistan on August 1, 2012, No. 383).
- On the formation of the Food Security Council under the Government of the Republic of Tajikistan.
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ANNEXES

Annex 1

Study results of additional information on the work of the WFP and the component "School meals" by regions of the country

A core team of consultants from the Public Organisation "Innovation Development Centre" on the development of the "Strategic Survey of Food Security and Nutrition in Tajikistan" (Alimov A.L., Muminova F.M., Babajanov R.M. and Davlatov A.) during January to April 2018 have been on working trips to a number of cities and regions of GBAO, Khatlon and Sughd oblasts, and the districts of the Rasht valley.

Meetings have been held in the WFP regional offices, secondary schools attended, where the WFP implements the "School Meal" programme. Meetings have been held with schoolteachers, parents, cooks and representatives of local communities.

During the meeting, all necessary information about activities of the WFP and the component “School meals” for the selected regions was refined and supplemented, and the questionnaire developed by the group was filled out. The elaborated questionnaire was discussed in focus groups, which include specialists from the WFP regional offices, teachers of attended schools, parents, cooks and representatives of local communities. The obtained answers to the questions have been summarized taking into account the opinions received in all the regions where monitoring of schools and the School Meals Programme have been implemented, and the opinions of the overwhelming majority of respondents have been summarized.

Survey results in focus groups

#	Question	Answer
1	Do you know that the NDS-2030 sets a goal not only to ensure food security, but also nutrition?	The overwhelming majority of those questioned answered positively. Yes, in this context, WFP promotes the National Development Strategy of Tajikistan, and will support the Government of Tajikistan and its partners in identifying the current problems and gaps in food security and nutrition that was formulated in the NDS-2030 and in the "UN World Road Map" necessary for the achievement of Sustainable Development Goals 2 (SDG-2) WFP by 2030.
2	What do you know about the Strategy of sustainable development of school meals in the Republic of Tajikistan for the period up to 2027?	Under the term “sustainable development strategies of school meals in the Republic of Tajikistan for the period up to 2027” we mean the joint actions and collective partnership of the Government of the Republic of Tajikistan and local Khukumats with the World Food Programme in addressing the challenges of ensuring food security and nutrition in the regions with a view to further transfer the World Food Programme’s School Meal Programme (up to 2027) to local Khukumat and local district education offices. We think that in order to achieve this goal, at this stage, we need to create a basic framework: - (1. construction of school infrastructures i.e. construction of new kitchens and canteens and at the same time legalization of school kitchens and canteens and a monthly payment for cooks. 2. Conduct quality trainings to the focal points of the Khukumat and focal points of the local district education departments on the basic life skills of the school food programme, i.e. from the writing of project proposals, to logistics, the programme monitoring format and the school

		feeding process, training on the reporting format, i.e. weekly, monthly, quarterly, semi-annual and annual. 3. Training focal points to the basics of computer software skills for timely reporting to higher and local Khukumats, district education offices on the progress of the school feeding process places, etc. Of course, this process is not easy and requires great joint efforts, material and financial resources from partners. We think that the course and realization of these endeavors will be implemented gradually until 2027 as outlined in the National Development Strategy of the Government of Tajikistan up to 2030 and the "World Road Map of the United Nations" necessary in achieving the Sustainable Development Goals 2 (SDG-2) by 2030.
3	How can you assess the partnership of the Government of the Republic of Tajikistan and local Khukumats with the World Food Programme in meeting the challenges of ensuring food security and nutrition, especially in rural areas?	The answer is positive. Since this is stipulated and clearly expressed in joint contracts on the distribution of the responsibilities of the parties to ensure high-quality and timely delivery of foodstuff to the WFP distribution points and the responsibilities of local Khukumats and local district education offices are reception, warehousing, food and distribution security. Monitoring of food distribution and reporting is a joint responsibility of the parties. To ensure high-quality nutrition, the WFP, in conjunction with the Ministry of Food Industry of Tajikistan, published (in 2017) a new textbook on the preparation of high-quality and high-calorie foods in local and rural schools, medical institutions in which the WFP has existing programmes. It should be noted that this textbook took the first place in the world exhibition of textbooks for the preparation of quality food in Beijing. In 2017, this textbook was published in large numbers and of good quality for all local and rural schools, medical institutions in which the WFP has existing programmes. We also believe that in problem solving on ensuring food security and nutrition, especially in rural area, an important role is given to a timely monitoring and reporting of parties, as well as to a timely and qualitative delivery of horticultural products (and in sufficient quantity) to local schools on the part of rural Jamoats, farmers, enterpreneurs and parents.
4	What types of food security and quality of nutrition are you aware of from the World Food Programme in Tajikistan?	An expanded answer to this question is given in paragraph 3.
5	What problems, in your opinion, exist in the process of implementing the tasks of ensuring food security	The following is the answer received in the Rasht zone of the Direct Ruled Districts (DRD): “The Rasht Valley has a favorable climate for the cultivation of basic food crops such as potatoes, carrots, beetroot and others. Horticulture,

	and quality of nutrition in your area?	livestock and beekeeping also have good indicators in the field of food security and quality of nutrition in rural areas of the Rasht Valley. But this potential is very limited. Prices for basic types of food products are excessively high and inadequate in comparison with real incomes of the population". A similar answer was received in the Sughd oblast (School # 40 of jamoat Histevarz, Bobojon Gafurov district).
6	How would you characterize the course of agrarian reforms or the course of reforms in the rural area?	The agrarian sector and the course of reforms in this sector need to consult with specialists in this field. With regard to the WFP programmes in the agricultural sector, we annually design many programmes called "Food for Labor" aimed at cleaning and restoring irrigation canals, developing horticulture, beekeeping, conducting drinking water to schools and simultaneously villagers, building and restoring numerous infrastructures such as roads, pedestrian bridges, construction of mud protection dykes, etc.
7	What state support tools for the domestic agricultural producer are working, and what needs to be adjusted / modernized?	Specialist advice and expertise in this field are needed in this sector.
8	How to create / develop mechanisms for managing the quantity and quality of imported food?	Specialist advice and expertise in this field are needed in this sector.
9	What are the opportunities and limitations in the region for standardization and certification of food products?	Specialist advice and expertise in this field are needed in this sector.
10	The chain of food sales and drive up the price, what to do?	Specialist advice and expertise in this field are needed in this sector

11	What opportunities are available: - local Hukumats - Association of Parents and Teachers - local entrepreneurs - international partners in solving problems of ensuring food security and quality of nutrition?	In meeting the challenges of ensuring food security and quality nutrition, local Khukumats, the Association of Parents and Teachers, along with local entrepreneurs, carry out and even outline significant changes, but this is certainly not enough due to the rapid population growth and demography in the Rasht region and we think that in all Tajikistan as a whole. As for international partners (IPs), significant investment by the IP in the field of food security and quality nutrition would be timely and we think that it will be much more focused. To do this, it is necessary to find other financial sources that can be involved in solving the problems of ensuring food security and quality nutrition after providing previously developed project proposals for IP in this area. As for the WFP, last year the pilot programmes in two districts of Khatlon oblast have been developed; the project on ensuring food security and nutrition; workers and their families were paid cash through IMON bank. In the future, it is planned to expand such programmes and small projects to other regions of Tajikistan. What are your suggestions for solving the problems of ensuring food security and quality nutrition in your area? Answer – "There are many approaches and options for solving the problems of food security and nutrition in the Rasht region, and in this direction the WFP always perseveres, and can help Khukumats and international partners to achieve their goals. We believe that at the moment, investing in large volumes to the agricultural sector in villages can play a key role in meeting the challenges of ensuring food security and nutrition in rural areas".

In the course of the meetings, the attitude of the residents to the WFP School Meals Programme was revealed - a very high rating has been given; the unresolved moments for improving the Programme and existing problems have been identified as well.

1. Per capita financing of secondary schools has certain shortcomings. Financing of the needs of small schools is not provided in timely manner. We are talking about secondary schools remote from district centres and, as a rule, these schools are problematic (without due repair, sanitary and hygienic problems, etc.), where the focus is mainly on the WFP School Meals Programme. These schools are the focus of particular attention.
2. Almost all schools covered by monitoring, (except for some of them (for instance, schools in the jamoat Histevarz Bobojon Gafurov district of the Sughd oblast)) have sanitary and hygienic problems, canteens and food blocks are in unsatisfactory condition. Many schools lack the heating system, water supply and sewerage systems. Schools are in need of major repairs and upgrades. For instance, (Schools # 3 and # 35 of Fakhrabod jamoat in Khuroson district of Khatlon oblast), due to the deteriorated roof, there is a threat of damage to the entire building.
3. Concerns are caused by areas with a special severe climate. For instance, Murgab district GBAO. Many schools in this region are characterized by a complex epidemiological situation, due to which schools are closed up to 3 months a year. Regional offices of WFP deliver mainly the flour, beans, vegetable oil, provide stoves for cooking and baking bread, pay for used fuel, etc. However, in these remote, mountainous areas there is a shortage of other products for a balanced diet - fresh vegetables and fruits, meat, eggs, etc. As a result, in these areas, the threat of the medical and epidemiological situation, different and chronic diseases, backwardness in development, etc. is high.
4. The status of the cooks in the canteens of school meals is not defined, which creates problems of payment for the cook and kitchen maids.
5. The team of consultants noted the importance of supporting the implementation of the WFP programmes as a support to the initiative to address school meal problems. In general, this initiative is supported by district leaders, jamoats and the parent committee. However, the regional development programmes do not specify or plan the activities of this plan. Coordination of activities with local governments and jamoats, tax authorities, sanitary epidemiological stations, etc. is necessary.

Annex 2

INDICATORS OF SDG 2, COUNTED BY THE STATE ADMINISTRATION BODIES OF THE REPUBLIC OF TAJIKISTAN

SDG indicator code	UN Statistics Code	Indicator SDG 2
STATISTICAL AGENCY UNDER THE PRESIDENT OF THE REPUBLIC OF TAJIKISTAN		
2.1.2	C020102	2.1.2 Level of moderate or acute food insecurity of the population (according to the "Scale of Perception of Food Insecurity")
2.3.2	C020302	2.3.2 Average income of small producers of food products by gender and status of belonging to indigenous peoples
MINISTRY OF ECONOMIC DEVELOPMENT AND TRADE OF THE REPUBLIC OF TAJIKISTAN		
2.b.1	C020b02	2.b.1 Subsidizing the export of agricultural products
2.c.1	C020c01	2.c.1 Indicator of price anomalies in the food market
MINISTRY OF FINANCE OF THE REPUBLIC OF TAJIKISTAN		
2.a.1	C020a01	2.a.1 Index of orientation to agriculture, determined by the structure of public expenditure
MINISTRY OF AGRICULTURE OF THE REPUBLIC OF TAJIKISTAN		
2.3.1	C020301	2.3.1 Volume of production per production unit, broken down by the size classes of farms / cattle-breeding / forestry enterprises
2.4.1	C020401	2.4.1 Share of agricultural land on which productive and non-exhaustive methods of farming are applied
2.5.1	C020501	2.5.1 Number of genetic resources of plant and zoological origin intended for food and *agriculture* that are stored in special facilities, either medium-term or long-term storage
2.5.2	C020502	2.5.2 Share of local breeds classified as follows: endangered; not endangered; the danger of extinction level is unknown
MINISTRY OF HEALTH AND SOCIAL PROTECTION OF THE REPUBLIC OF TAJIKISTAN		
2.1.1	C020101	2.1.1 Prevalence of malnutrition
2.2.1	C020201	2.2.1 Prevalence of growth inhibition in children under the age of five (standard deviation from the median growth rate to the age of the child in accordance with the child growth standards set by the World Health Organization (WHO), <-2
2.2.2	C020202	2.2.2 Prevalence of malnutrition in children under the age of five by type (undernutrition or obesity) (mean-square deviation from the median weight-for-age in accordance with child growth rates set by the World Health Organization (WHO) > +2 or <-2)

Annex 3

BRIEF CHARACTERISTIC OF USED DATA AND SOURCES
within preparation of the "Strategic Review for the Eradication of Hunger in Tajikistan"

	Data and source group	Focus of reflection in the Strategic Review	Detailing
1.	**Regulatory legal acts related to nutrition management, hunger eradication and food security**	- Reflecting the institutional framework for managing food security and nutrition in Tajikistan, including strategies, policies, programmes, institutional capacities and resource inflows - Rationale for the development direction, processes of regulating development of the food complex, ensuring access to food and eliminating hunger	• National Development Strategy of the Republic of Tajikistan for the period up to 2030 • Medium-term development programme of the Republic of Tajikistan for the period 2016-2020 • The concept of improving school nutrition in general education institutions of the Republic of Tajikistan • Nutrition and physical activity strategy for the Republic of Tajikistan (2015-2024) • National Health Strategy of the Republic of Tajikistan for the period 2010-2020 • The Law of the Republic of Tajikistan "On Food Security (as amended by the Law of the Republic of Tajikistan of November 27, 2014 No. 1158) • Food Security Programme of the Republic of Tajikistan for the period up to 2015 (approved by the Decree of the Government of the Republic of Tajikistan No. 72 dated February 2, 2009) • The Programme for Agriculture Reform in the Republic of Tajikistan for the period 2012-2020 (approved by the Government of the Republic of Tajikistan on August 1, 2012, No. 383) • On formation of the Food Security Council of the Republic of Tajikistan (FSCT)
2.	**Global Food Security Reports**	- Analytical reflection of development trends in the context of global understanding of the food security and improved nutrition in Tajikistan	• Review of the agro-food trade policy in the post-Soviet countries 2015-16 (FAO, 2017) • Review of the agro-food trade policy in the post-Soviet countries 2014-15 (FAO, 2017) • Gender equality, social protection and rural development: a view from Eastern Europe and Central Asia (FAO, 2016) • Migration, agriculture and rural development (FAO, 2016,) • Food security programmeme up to 2020

			(FAO, 2016) • FAO Regional Initiatives - Europe and Central Asia (FAO, 2015). • Tajikistan: Expanding funding opportunities in rural areas (FAO and EBRD report, 2006) • Voluntary guidelines to support the progressive realization of the right to adequate food in the context of national food security (FAO, 2004) • Rising food and energy prices in Europe and Central Asia (World Bank Regional Office for Europe and Central Asia, 2010)
3.	**Analytical notes**	- Formation of an analysis of the situation and trends in food security and nutrition in Tajikistan - Identification of the spectrum of visions for improving food security and nutrition.	• From the MDGs to the SDG: achievements and challenges (WHO, 2017). • Food security and nutrition in Tajikistan (Tajikistan Development Coordination Council, Dushanbe, January 2015) • Nutrition environment in the cities of Eastern Europe and Central Asia - Tajikistan (Project FEEDcities - Eastern Europe and Central Asia, 2017) • Application of zero tillage technologies and intensification of pasture productivity will create economic benefits while reducing land degradation (CGIAR, 2015). • The Food Security and Cooperation Programme for Agriculture in Central Asia, with a focus on Tajikistan (UCA report, 2013). • Impact of Tajikistan's accession to the WTO on priority sectors - the food industry (ITC, 2014) • Analysis of factors influencing the production and processing of food products oriented to export (NASMB, 2015). • Ways of sustainable food self-sufficiency in the region (on the example of Central Tajikistan) - Aliev O.M., 2012 • Regional aspects of ensuring food security (on materials of the Khatlon region of the Republic of Tajikistan) - Tagoev B., 2013 • Food supply of the Republic of Tajikistan

			- Gulov I.M., 2011 • Agrarian reform and establishment of market relations in the agriculture of the Republic of Tajikistan (theory, methodology, practice) – Rakhmatov Kh.B. 2009). • Agrarian Reform of the Republic of Tajikistan (theory, methodology, problems and solutions) - Ashurov I.S., 2008 • Sustainable land and agriculture management (Center for Development and Environment (CDE) of the University of Bern, Switzerland, 2011
4.	**Statistical compilations and reporting**	- Assessments of the situation and trends in food security and nutrition in Tajikistan - use of database for the time series of data from 2010 to 2016 / 2017 - In addition to national data, the application of regional assessments	The cycle of statistical publications on "Food Security and Poverty" National social statistics and household budget statistics - the Statistical Agency under the President of the Republic of Tajikistan in the form of publications and electronic format (www.stat.tj) National research on private sector development, poverty, consumption

Annex 4

List of figures, tables and diagrams.

List of figures.

List of tables.

List of diagrams

[18] Clarification – *if rely only on domestic production, and not changing the square of sawn areas (acreage) and crop productivity.*