Food and Agriculture Organization
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Regional TCP
on Empowering Smallholders
and Family Farms
(TCP/RER/3601)

Smallholders and family farms in Tajikistan

Country study report

2019

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Abbreviations and acronyms

ACTED	Agency for Technical Cooperation and Development
ADB	Asian Development Bank
AEC	adult education centre
AKDN	Aga Khan Development Network
AIC	agro-industry complex
ALRI	Agency on Land Reclamation and Irrigation under the Government of Tajikistan
APC	Agrarian Policy Concept of Tajikistan
ARP	Agricultural Reform Programme of Tajikistan for 2012–2020
CA	Central Asia
CPF	Country Programming Framework
CPI	consumer price index
DF	dehkan farm
DRS	Districts of Republican Subordination
EBRD	European Bank for Reconstruction and Development
ECA	Europe and Central Asia
ECTAP	Enhanced Competitiveness of Tajik Agribusiness Project
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FDI	foreign direct investment
FSP	Food Security Program of Tajikistan for the period until 2015
GBAO	Gorno-Badakhshan Autonomous Oblast
GDP	gross domestic product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
HydroMet	Agency for Hydrometeorology the Committee of Environmental Protection under the Government of the Republic of Tajikistan
IFAD	International Fund for Agricultural Development
IWMR	Integrated Water Resources Management
JFPR	Japan Fund for Poverty Reduction
LEBSP	local executive body of state power
MOA	Ministry of Agriculture of Tajikistan
M&E	monitoring and evaluation
NADF	National Association of Dekhkan Farms
NGO	non-governmental organization
NDS-2030	National Development Strategy of Tajikistan for the period up to 2030
PRS	Poverty reduction strategy of Tajikistan for the period of 2010-2012
PSF	private subsidiary farm
Tajikistan	Republic of Tajikistan
SDC	Swiss Agency for Development and Cooperation
SDGs	Sustainable Development Goals
TAAS	Tajik Academy of Agricultural Sciences
TAU	Tajik Agrarian University named after Sh. Shotemur
TajStat	Statistical Agency under President of the Republic of Tajikistan
TCP	Technical Cooperation Programme

TC	tax code
UN	United Nations
UAT	unified agricultural tax
USA	United States of America
USAID	United States Agency for International Development
VGGT	Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security
WB	The World Bank
WUA	water users association

Executive summary

Introduction

Smallholders and family farms are among the most widespread forms of agriculture in the world. Their appearance in the countries of Europe and Central Asia is connected with the transition to a market economy and the adoption of land reforms in the early 1990s, which led to the widespread emergence of smallholders and family farms formed on the basis of large state collective farms. After almost three decades at the beginning of the first phase of land reforms, smallholders and family farms still face considerable difficulties in doing business in the agricultural sector.

To support smallholders and family farms in addressing actual tasks and improving their economic situation, the Food and Agriculture Organization of the United Nations (FAO) initiated a Regional Initiative for Empowerment of Smallholders and Family Farms in Europe and Central Asia aimed at helping to achieve the global goal of eradicating poverty in rural areas of targeted countries, ensuring food security. Thus, in each of the target countries (Albania, Armenia, Georgia, Kyrgyzstan, North Macedonia, Republic of Moldova and Tajikistan), there were conducted country studies focused on:

a) the structural processes of agriculture transformation;
b) the state of the activities of smallholders and family farms (definitions, data and typologies);
c) the needs, challenges and constraints of smallholders and family farms; and
d) policy initiatives, the prerequisites for policy formulation and implementation in each target country.

Methodology and approach

The research methodology combines the use of desk research, interviews with key stakeholders and case studies.

The desk research covers an assessment of available policy documents, research papers, reports, studies and more from public authorities, academia, and international donors and organizations. Furthermore, the desk research covers official statistics from public sources supplemented with poverty and living conditions surveys, data/statistics from academia, donor organizations and other contributors.

Interviews are accomplished with the aim of contributing data and information to answer the four research questions. Interviews are conducted with selected resource persons representing key stakeholders. The interviews target different stakeholders and are streamlined to the individual interviewee or groups of interviewees, depending on the findings from the desk research phase.

Case studies are used to illustrate or demonstrate various topics. One example is case studies of policy interventions to demonstrate the results and impacts of these interventions. It could be an investment support scheme, or it may be a training of farmers accomplished by advisory services. Based on the

documentation and information gathered from these interventions, recommendations are formulated to existing or to new policies.

In addition to these research methods, there were organized two workshops with key stakeholders in Dushanbe.

One introductory workshop was accomplished right at the beginning of the working process, and the second workshop was a validation workshop in which the preliminary findings, conclusions and recommendations were presented to stakeholders.

The role and weight of smallholders and family farmers in the economy of the country

Smallholders and family farms, as one of the forms of dehkan farms, are new economic actors in the recent history of the Republic of Tajikistan. However, at this moment there is no single agreed-upon definition of smallholders in Tajikistan, and there are no clear indicators for the definitions of both smallholders and family farms. The current situation, with the absence of a clear and shared conceptual apparatus, causes differences in approach to the definition of these farms applied by different stakeholders. At the beginning of 2017, there were formed more than 174 837 dehkan farms in the country. The main share (79 percent) of dehkan farms operate in the Sughd and Khatlon regions (TajStat, 2017b). Male farmers are often the heads of dehkan farms, but due to the unprofitable nature of the industry and the growth of external and internal migration of the male population, the number of dehkan farms headed by women is also growing.

Dehkan farms make a significant contribution to the development of the agricultural sector. They account for 32 percent of agricultural production and 7 percent of the country's gross domestic product (GDP) as a whole (TajStat, 2017c). The main activity of the dehkan farm is connected with the production of products (cereals and legumes, cotton, potatoes and cucurbits) in the horticulture sector. The cultivated area of agricultural crops in dehkan farms was 545 100 ha. In general, 5.177 million ha of land (37 percent of the total land fund) have been assigned to dehkan farms for their activities, of which 2.591 million ha of agricultural land were allocated for agricultural production. With regard to livestock, in the structure of the agricultural sector, the share of dehkan farms in this sector is about 3 percent (TajStat, 2017a).

In general, it can be noted that dehkan farms account for a significant part of agricultural output, thereby significantly reducing the burden on the state to address the issue of food security.

It should be noted that in modern conditions, the role of private subsidiary farms also noticeably increases, the distinctive features of which are economic independence, rational use of the informal

labour of all family members, ownership of manufactured products and income, and free small business, in which the owner, organizer, entrepreneur and village worker are united in one person.

Table 1 shows the key indicators of dehkan farms and private subsidiary farms related to the economy in 2016:

Table 1. Key indicators of dehkan farms and private subsidiary farms related to the economy, 2016

Indicator	dehkan farms	private subsidiary farms
Contribution to the country's GDP, %	7	13
Agricultural Production, %	34	61
Livestock Sector, %	3	94
Horticulture Sector, %	49	45

SOURCE: TAJSTAT, 2008B; TAJSTAT, 2010B; TAJSTAT, 2015B; TAJSTAT, 2017C.

Needs, challenges and constraints

One of the main objectives of this research is to identify the needs, challenges and constraints that affect the economic, social and environmental state of the dehkan farms and their development, as well as to develop conclusions and relevant recommendations. It should be noted that these needs, challenges and constraints are largely interweaved and interrelated with each other, which makes it difficult to determine the specific cause-and-effect relationship.

A constraint hampering the development of the dehkan farm is the low profitability of the agriculture sector, despite the fact that this sector as a whole plays a significant role in the economy of the country (21 percent of the GDP). This factor, in interdependence with others, causes a lack of additional financial resources for farmers to invest in the development of their farms, leading to the deterioration of living conditions in rural areas. Another consequence is the outflow of specialists within the framework of internal and external migration – mostly the men in rural areas, including the younger generation.

Low profitability, which is affected by the negative impact of frequent price hikes in the domestic market, can in turn cause financial planning challenges for smallholders and family dehkan farms. In this case, it should be noted that farmers do not have the necessary knowledge for financial planning and management.

Other interrelated challenges include access to water and the deterioration of irrigation infrastructures built before independence that currently need major repairs. Until the beginning of the 1990s, the irrigation system as a whole supported the normal melioration regime of irrigated lands. The sharp decrease in financing for cleaning and repair works, as well as the lack of an appropriate agro-technical approach when using saline lands, violating irrigation regimes, has caused over 50 000 ha of land from the general irrigated area to be in an unsatisfactory melioration state. Infrastructure challenges, in turn, cause a shortage of water for irrigation.

In addition, dehkan farms suffer from the effects of rising groundwater levels and salinization of the soil. Soil waterlogging and soil infertility due to inefficient irrigation lead to a decrease in yield and undermine the productivity of agricultural land, which in turn contributes to the increase in poverty.

Another constraint to development is limited access to agricultural inputs, such as agricultural equipment and machinery, seeds, fertilizers and pesticides. Access to agricultural equipment or machinery (such as tractors, combines and cultivators) is a serious challenge for smallholders – especially for women, as will be discussed throughout this report – hindering the optimal organization of production and potentially reducing yield. Dehkan farms that invest in the purchase of seeds, fertilizers and pesticides do not receive the expected results and incomes. At the same time, it should be noted that farmers often purchase cheaper, low-quality products.

Access to new technologies is another challenge of dehkan farm development. More often, accessibility is affected by the difference in the areas of land plots of smallholders, mainly because of their small size. On one hand, the small size of land plots limits the introduction of efficient production technologies such as mechanization or crop rotation, and on the other hand, the small size allows for the introduction of such techniques as drip or string irrigation.

The need for consultation services on taxation issues, production technologies, agribusiness, exports, sales, marketing and more is a challenge faced by all types of dehkan farms, and not just smallholders and family farms.

One of the constraints for the development of smallholders is the sale of agricultural products. According to the interviewed dehkan farms, today, for most of the dehkan farms, direct access to markets and supermarkets is closed. Dehkan farms have to be satisfied with only the services of second-hand dealers, who purchase products at a known low price and then sell it at wholesale markets with 100-percent to 200-percent churning surcharge.

A significant factor affecting, among other things, the development of smallholders and family farms are the insufficiency of state investment in agriculture and the absence of an agricultural insurance system. Currently, dehkan farms have no protection and bear the risks associated with climate hazards and emerging adverse weather conditions. The only assistance that dehkan farms receive when they have been harmed by climate hazards and adverse weather conditions is state aid in the form of small subsidies for agricultural inputs or temporary suspension from taxes.

The last important point that should be mentioned is the simplification of the tax burden. Agriculture is considered one of the important sources of tax revenues, currently bringing in about 35 percent of the total amount of tax revenues. This means that agriculture is one of the main sources of funding for other socio-economic sectors of the economy of Tajikistan. Currently, agriculture is subject to three main taxes: the cotton fiber export tax; the unified agricultural tax, levied depending on the characteristics of the land; and payment for water use on irrigated lands.

National agriculture policy affecting smallholders and family farms

In 2016, the National Development Strategy of Tajikistan for the period until 2030 (NDS-2030) was approved. One of the main strategic goals of the NDS-2030 is to ensure food security and people's access to quality nutrition and agriculture. As specified in the document development scenarios, only in the case of the inertial plan it is assumed that the share of the agrarian sector in the GDP structure will remain at the same level and will prevail over the industry. As per the industrial and industrial-innovative scenarios, the share of the agrarian sector in GDP will fall either to 20 percent or to 17–18 percent.

The NDS-2030, in terms of agriculture, is conceptually interconnected with the Agricultural Reform Program of Tajikistan for 2012–2020 (ARP), a significant national policy document developed in the field of agriculture. The achievements of the ARP should become an integral part of the planned implementation of the NDS-2030 and determine the possibility of increasing the export of products with high added value and the development of organic farming, including export-oriented and import-substituting development. Due to intensification of agricultural production, diversification of economic growth according to NDS-2030 is expected.

It should be noted that ARP aims to provide high-yield and export-oriented agriculture to improve the living standards of the rural population, ensure food security, strengthen the position of agriculture in the regional division of labour, and develop productive and profitable agriculture based on rational use and sustainable management of natural resources.

In general, the ARP aims to achieve two main national goals:

- conducting a common agricultural reform, including institutional reform, at the national and local levels; and
- developing productive and profitable agriculture based on rational use and sustainable management of natural resources.

The ARP is based on the National Development Strategy of Tajikistan for the period up to 2015 (NDS-2015), the Poverty Reduction Strategy for the period 2010–2012, the Food Security Program of Tajikistan for the period until 2015, and the Agrarian Policy Concept of Tajikistan. Therefore, as a common goal, it is necessary to implement reforms and solve the main challenges identified in the above strategies and programmes.

The Government recognizes that gender equality is essential for sustainable economic growth, and as such gender equality is mainstreamed into both the NDS-2030 and the ARP. The ARP aims to promote gender equity "at every step of the reform" because the "success of agriculture reform will depend to a large extent on how the potential of women is realized and their rights are exercised" (Government of Tajikistan, 2012) Particular attention is given to equality in long-term land tenure, ensuring equal access to finance for farming, capacity development of women and men, and mitigation of the effects of climate change on particularly vulnerable groups, such as female-headed households.

Conclusions

1. As a result of a number of adopted political decisions that began in the 1990s, more than 170 000 dehkan farms have been created in Tajikistan.
2. Of the dehkan farms, which account for three-fourths of the land, more than half are smallholders and family farms. According to various sources, the average size of the land area of smallholders and family farms is no more than 2 ha.
3. Agriculture is one of the important sources of tax revenues, which currently accounts for about 35 percent of the total tax revenue. To date, agriculture is subject to three main taxes: a) tax on the export of cotton fiber; b) a unified agricultural tax, levied depending on the characteristics of the land; and c) payment for water use on irrigated land.
4. Taking into account the fact that the dehkan farms and private subsidiary farms make a significant part of agricultural output, they significantly reduce the burden on the state to address the issue of food security by contributing to the provision of food, thereby reducing poverty.
5. To date, there is no official agreed-upon definition of smallholders in Tajikistan, and there are no clear indicators for the definition of both smallholders and family farms.
6. The challenges and constraints collected during this country study could be categorizes as either: a) directly related to the activities of farmers and thus under their influence; or b) factors that farmers cannot influence but that can have negative or positive impacts on the development of dehkan farms.
7. The first group of challenges and constraints includes the problems faced by farmers at the stages of production, storage and sale of products. Based on the identified challenges, the needs of farmers were identified.
8. The second group of challenges and constraints includes constraints that act as deterrent barriers to the development of the dehkan farms:

    a) There is a lack of a widespread system of advisory services on the market that would allow for the filling of gaps in knowledge and skills of farmers.
    b) Expensive credits make financial services unavailable.
    c) Irrigation systems have a great deal of wear and tear, and there is a lack of a clearly defined system of interaction between dehkan farms and water user associations, on one side, and the local Agency for Land Reclamation and Irrigation under the Government of Tajikistan, on the other side, which leads to limited access to water resources.
    d) Because of massive male migration, women are increasingly becoming *de jure* and (more commonly) *de facto* heads of farms. Persisting gender-based inequalities that keep women in lower status in society – with limited access to knowledge, resources, decision-making and networks, and with a significant pay gap – have direct impacts on the productivity of dehkan farms and private subsidiary farms and, as a result, on food security and agricultural development.
    e) Climate change causes an increased risk to farmers, where the responsibility is entirely imposed on dehkan farms, demotivating agricultural producers.
    f) In the case of availability of opportunities for expanding dehkan farms, the farms' readiness to cover the processing along with production and taxes will act as a deterrent barrier.

9. The Government and the Ministry of Agriculture are aware of all the challenges and constraints associated with the development of the agricultural sector, including the dehkan farms identified

in this study. But due to low financing of the sector from the state budget, such tasks as achieving financial stability or creating a national insurance system for the agricultural sector have not been fulfilled to this day. At the same time, it is worth noting that most of the planned reforms are implemented with the support of development partners.

Recommendations

Based on the results and conclusions of the research, a number of recommendations were developed:

1. **Develop a single official definition with specific indicators for smallholders and family farms.** Specific statistical data, the collection of which will be carried out on the basis of clear and understandable indicators, will provide specific information on the size of small and family dehkan farms. Further, the information obtained can form the basis for the development of targeted programmes to promote the development of small and family dehkan farms. TajStat and the State Committee for Land Management and Geodesy can be responsible for discussion and introduction of a single concept with specific indicators.
2. **Strengthen the quality control system for seeds, pesticides and fertilizers imported into the country**. In this direction, a coalition of the state and the private sector can be created, in which the state has a regulative role. On the basis of the private sector, a dealer network can be created on a competitive basis to provide the market with quality seeds, pesticides and fertilizers. Increasing awareness and confidence of farmers in seeds, fertilizers and pesticides can be organized through the creation of demonstration agro-sites that can function both in research institutes (such as the Tajik Academy of Agricultural Sciences and the Tajik Agrarian University named after Sh. Shotemur) and in the dealer networks.
3. **Improve information to women and men farmers.** A review of existing loan products offered by financial institutions showed that products are available that take into account the seasonality of the business, which is important for the farmer, but some farmers are not aware of this. Women are the ones who are less likely to receive this information. The recommendation may be to increase women and men farmers' awareness through the financial institutions themselves.
4. **Lower the annual interest rate to 15 percent in national currency.** At the same time, loans are indeed expensive, which makes them practically inaccessible to smallholders and family farms. Lowering the annual interest rate to 15 percent in national currency will allow farmers to solve financial problems in a timely manner. It should be considered that loans received by commercial banks of Tajikistan from external sources are expensive. Based on the results of the hand-over workshop[1], it is recommended to consider the possibility of communication with investment funds to attract and obtain low-cost loans by commercial banks of Tajikistan for the agricultural sector.
5. **Create an insurance product for agricultural activities.** This would allow, to a certain extent, the minimization of farmers' risks associated with such issues as climate change, land erosion,

[1] On 26 October 2018, a workshop was held in Dushanbe with main stakeholders, such as representatives of the Ministry of Agriculture, the National Bank of Tajikistan, the National Association of Dehkan Farms, international donor organizations, etc. In total, six people participated.

devastation, depletion and waterlogging (increased groundwater), low yields, floods, drought, locust attacks and sudden frosts.

6. **Improve knowledge and skills for women and men.** The needs for knowledge and skills can be overcome through several options. Short courses for training on specific topics can be created on the basis of the existing Adult Education Center and National Association of Dehkan Farms representatives in the regions.[2] One of the options may be to facilitate the exchange of experiences among farmers of different regions. Successful examples of this options are the projects Gendered Enterprise and Markets Program and AgroMarkets Program, implemented by Oxfam and HELVETAS, respectively. Of particular relevance is increasing women's access to knowledge and skills so that the gender knowledge gap can be reduced and the economic opportunities of women increased.
7. **Improve communication between farmers and consumers.** The establishment of a sustainable link between the wholesale buyer/supermarket and the manufacturer would allow farmers to resolve issues with the sale of products. The cooperation of farmers to produce products of a single breed and size would increase the attractiveness of products in the domestic and foreign markets and directly increase the income of the farmer. The basic condition is the establishment of cooperatives that unify the dehkan farms. Since the cooperative is a legal entity, higher taxes can become a barrier. The Ministry of Agriculture can promote the idea of tax incentives for cooperatives at the state level and may establish incentives and other measures for increasing women's access to and benefit from cooperative membership.
8. **Establish support services for dehkan farms and private subsidiary farms at the local executive body of state power level.** This would require the development of clear objectives and strengthening the technical and institutional capacity of the recruited staff in the local executive body of state power on agricultural issues. However, there is a risk of trained local executive body of state power staff loss. In the future, having used the skills of its specialists and with the support of private sector and non-governmental organizations, the Ministry of Agriculture should contribute to local executive bodies of state power the provision of information and consultation to dehkan farms and private subsidiary farms.
9. **Create advisory and information Web platform**. A single, publicly available advisory and information Web platform that accumulates modern approaches and knowledge could be a means of improving the skills of specialized local experts and students through online training. Furthermore, consultants, local experts and students could apply their knowledge at the training courses of the school, adult education centre or National Association of Dehkan Farms on a paid basis. This platform would also allow farmers to increase their knowledge on modern agriculture issues. The Web platform could be placed on the websites of the Ministry of Agriculture or the Tajik Academy of Agricultural Sciences.
10. **Develop specific measures for women's economic and social empowerment**, in line with the Agricultural Reform Program of Tajikistan for 2012–2020, to contribute to closing the gender gap in dehkan farm and private subsidiary farm management.
11. **Simplify the taxation regime.** Remove the phrase "without further processing" from Article 298 "General Provisions" of Chapter 44 "Simplified taxation regime for producers of agricultural products (single tax)."

[2] The National Association of Dehkan Farms unites 109 Associations of Dehkan Farms throughout the country.

Шарҳи мухтасари ҳисобот

Муқаддима

Хоҷагиҳои хурд ва оилавӣ яке аз шаклҳои маъмултарини пешбарандаи соҳаи кишоварзӣ дар ҷаҳон мебошанд. Пайдоиши онҳо дар кишварҳои Аврупо ва Осиёи Марказӣ дар натиҷаи гузариш ба иқтисоди бозорӣ ва қабули ислоҳоти замин дар аввалҳои солҳои 90-ум вобаста аст, ки он боиси ташкилёбии васеъи хоҷагиҳои хурд ва оилавӣ дар заминаи хоҷагиҳои калони давлатии коллективӣ гардиданд. Пас аз қариб се даҳсола аз оғози марҳилаи аввали ислоҳоти замин, хоҷагиҳои хурд ва оилавӣ то ҳанӯз бо мушкилоти зиёде дар пешбурди фаъолияти соҳибкории худ дар соҳаи кишоварзӣ дучор мешаванд.

Барои дастгирии хоҷагиҳои хурд ва оилавӣ дар ҳалли мушкилоти мавҷуда ва беҳтар намудани вазъи иқтисодии онҳо, Ташкилоти озуқа ва кишоварзии Созмони Милали Муттаҳид (FAO) ба иҷро намудани Ташаббуси минтақавӣ ҷиҳати васеъ намудани ҳуқуқ ва имкониятҳои хоҷагиҳои хурд ва оилавиро дар кишварҳои Аврупо ва Осиёи Марказӣ оғоз намуд, ки ба мусоидат намудан барои комёбшавӣ ба ҳадафи глобалӣ оиди аз байн бурдани камбизоатӣ дар минтақаҳои деҳоти кишварҳои ҳадафӣ, ва ба таъминоти амнияти озуқаворӣ равона карда шудааст. Ҳамин тавр, дар ҳар як кишварҳои ҳадафӣ (Албания, Арманистон, Гурҷистон, Қирғизистон, Македония, Ҷумҳурии Молдова ва Тоҷикистон) тадқиқотҳо гузаронида шуданд, ки ба таҳлил ва омӯзиши ҷиҳатҳои зерин равона шудаанд: а) равандҳои сохтории тағйирёбии соҳаи кишоварзӣ; б) ҳолати фаъолияти хоҷагиҳои хурд ва оилавӣ (тавсифҳо, маълумот, ва навъ); в) эҳтиёҷот, мушкилот ва маҳдудиятҳое, ки хоҷагиҳои хурд ва оилавӣ бо онҳо дучор мешаванд; ва г) ташаббусҳои сиёсӣ, замина барои таҳия ва татбиқ намудани сиёсат дар ҳар як кишвари ҳадафӣ.

Методология ва усулҳои тадқиқот

Методологияи тадқиқот истифодабарии тадқиқоти мизӣ, гузаронидани мусоҳибаҳоро бо тарафҳои асосии манфиатдор ва омӯзиши воқеъаҳои муайянро дар бар мегирад.

Тадқиқоти мизӣ ба худ баҳодиҳии ҳуҷҷатҳои сиёсии мавҷудбуда, корҳои тадқиқотӣ, ҳисоботҳо, тадқиқотҳо ва дигар маводҳоеро, ки аз мақомотҳои давлатӣ, доираҳои васеъи илмӣ, донорҳо ва ташкилотҳои байналмилалӣ ба даст оварда шудааст, дар бар мегирад. Ғайр аз ин, тадқиқоти мизӣ, омӯзиши омори расмии аз манбаъҳои кушод гирифта шударо, ки аз ҳисоби тадқиқотҳои сатҳи камбизоатӣ ва шароити зист, маълумот/маълумоти оморӣ аз доираҳои илмӣ, ташкилотҳои донорӣ ва дигар иштироккунандагон пурра карда шуданд, дар бар мегирад.

Мусоҳибаҳо бо мақсади ба даст овардани маълумот оиди гирифтани ҷавоб ба чор саволи тадқиқотӣ гузаронида мешаванд. Мусоҳибаҳо бо коршиносони интихобшуда гузаронида мешаванд, ки тарафҳои асосии манфиатдорро намояндагӣ менамоянд. Мусоҳибаҳо ба тарафҳои гуногуни манфиатдор равона карда шудаанд, ва ба талаботҳои мусоҳибони алоҳида ё гурӯҳҳои шахсоне мусоҳибшаванда вобаста ба натиҷаҳои давраи тадқиқот мувофиқа карда шуданд.

Гузаронидани омӯзиши воқеъаҳои муайян барои тасвир ё нишон додани мавзӯъҳои гуногун истифода бурда мешавад. Яке аз мисолҳо ин омӯзиши воқеъаҳои муайян оиди тадбирҳои сиёсӣ, ки барои нишон додани натиҷаҳо ва таъсири ин тадбирҳо истифода бурда мешавад. Ин метавонад таҳияи нақшаи (тарҳи) дастгирии сармоягузорӣ ё гузаронидани омӯзиш (тренинг) барои деҳқонон аз ҷониби хадамоти машваратӣ бошад. Дар асоси ҳуҷҷатҳо ва маълумотҳое, ки дар натиҷаи ин тадбирҳо ҷамъ оварда шудаанд, тавсияҳо барои сиёсатгузории ҳозира ё оянда пешниҳод карда шудаанд.

Илова бар ин усулҳои тадқиқотӣ, дар шаҳри Душанбе ду семинар-машварат бо иштироки тарафҳои асосии манфиатдор ташкил карда шуданд.

Як семинар-машварати ибтидоӣ барои шиносоӣ бо тадқиқот дар оғози раванди корӣ гузаронида шуд, ва семинар-машварати дуюм оиди валидатсияи (тасдиққунии) натиҷаҳои тадқиқот буд, ки дар он натиҷаҳои аввалаи тадқиқот, хулосаҳо ва тавсияҳо ба тарафҳои манфиатдор пешниҳод карда шуданд.

Нақша ва аҳамияти хоҷагиҳои хурд ва оилавӣ дар иқтисодиёти кишвар

Хоҷагиҳои хурд ва оилавӣ, ҳамчун яке аз шаклҳои хоҷагиҳои деҳқонӣ, дар таърихи навини Ҷумҳурии Тоҷикистон субъектҳои нави иқтисодӣ мебошанд. Бо вуҷуди ин, дар айни замон ягон тавсифоти муайяни мувофиқа карда шудаи хоҷагиҳои хурд дар Тоҷикистон мавҷуд нест, ва инчунин нишондиҳандаҳои дақиқ барои муайян намудани хоҷагиҳои хурд ва оилавӣ вуҷуд надоранд. Вазъияти кунунӣ, аз сабаби набудани дастгоҳи консептуалӣ ва умумӣ, ба истифодабарии усулҳои ҳархела барои муайян намудани ин хоҷагиҳо дар байни тарафҳои гуногуни манфиатдор оварда расонд. Дар ибтидои соли 2017, дар ҳудуди кишвар зиёда аз 174.837 хоҷагии деҳқонӣ ташкил карда шуданд. Ҳиссаи асосӣ (79 фоиз)-и хоҷагиҳои деҳқонӣ дар вилоятҳои Суғд ва Хатлон фаъолият доранд (TajStat, 2017b). Аксар вақт роҳбарони хоҷагиҳои деҳқонӣ мардон мебошанд, аммо бо сабаби бесамаранок будани ин соҳа ва афзоиши муҳоҷирати дохила ва беруна дар байни мардон, шумораи хоҷагиҳои деҳқоние, ки роҳбарони он занон мебошанд, инчунин афзуд.

Хоҷагиҳои деҳқонӣ барои рушди соҳаи кишоварзӣ саҳми арзанда мегузоранд. Ба ҳиссаи онҳо 32 фоизи истеҳсоли маҳсулоти кишоварзӣ ва 7 фоизи маҷмӯи маҳсулоти дохилии кишвар (ММД) рост меояд (TajStat, 2017c). Фаъолияти асосии хоҷагиҳои деҳқонӣ бо истеҳсоли маҳсулоти кишоварзӣ (ғалладона ва донагиҳо, пахта, картошка ва полезӣ) дар соҳаи растанипарварӣ вобаста аст. Майдони кишти зироатҳо дар хоҷагиҳои деҳқонӣ 545 100 га гектарро ташкил доданд. Умуман, 5.177 миллион гектар замин (37 фоиз аз фонди умумии

замин) ба хоҷагиҳои деҳқонӣ барои фаъолият ҷудо карда шуданд, ки аз он 2.591 миллион гектар заминҳои кишт барои истеҳсоли маҳсулоти кишоварзӣ ҷудо карда шуда буданд. Нисбати соҳаи чорводорӣ бошад, дар сохтори бахши кишоварзӣ ҳиссаи хоҷагиҳои деҳқонӣ дар ин бахш тақрибан 3 фоизро ташкил медиҳад (TajStat, 2017a).

Умуман, қайд кардан зарур аст, ки қисми зиёди маҳсулоти кишоварзӣ аз тарафи хоҷагиҳои деҳқонӣ истеҳсол карда мешаванд, ва ин сарбории давлатро барои ҳалли масъалаҳои амнияти озуқаворӣ хеле осон мегардонад.

Қайд кардан зарур аст, ки дар шароити муосир нақши хоҷагиҳои ёрирасони шахсӣ низ назаррасанд. Хусусиятҳои фарқкунандаи он мустақилияти иқтисодӣ, истифодаи оқилонаи меҳнати ғайрирасмии ҳамаи аъзоёни оила, ҳуқуқи моликият ба маҳсулоти истеҳсолшуда ва даромад мебошад; инчунин ин тиҷорати озоди хурд мебошад, ки дар он як шахс ҳам соҳиб, ҳам ташкилкунанда, ҳам соҳибкор ва ҳам деҳқон мебошад.

Дар ҷадвали 1 нишондиҳандаҳои асосии иқтисодии хоҷагиҳои деҳқонӣ ва хоҷагиҳои ёрирасони шахсӣ барои соли 2016 оварда шудаанд:

Ҷадвали 1. Нишондиҳандаҳои асосии хоҷагиҳои деҳқонӣ ва хоҷагиҳои ёрирасони шахсӣ барои соли 2016.

Нишондиҳандаҳо	Хоҷагии деҳқонӣ	Хоҷагиҳои ёрирасони шахсӣ
Ҳисса дар ММД-и кишвар, %	7	13
Истеҳсолоти кишоварзӣ, %	34	61
Соҳаи чорводорӣ, %	3	94
Соҳаи растанипарварӣ, %	49	45

МАНБАЪ: TAJSTAT, 2008B; TAJSTAT, 2010B; TAJSTAT, 2015B; TAJSTAT, 2017C.

Эҳтиёҷот, мушкилотҳо ва маҳдудиятҳо

Яке аз мақсадҳои асосии тадқиқоти мазкур ин муайян кардани эҳтиёҷот, мушкилотҳо ва маҳдудиятҳое, ки ба вазъи иқтисодӣ, иҷтимоиву экологии хоҷагиҳои деҳқонӣ ва рушди онҳо таъсир мерасонанд ва инчунин таҳия намудани хулосаҳо ва тавсияҳои лозима, мебошад. Бояд қайд намуд, ки эҳтиёҷот, мушкилотҳо ва маҳдудиятҳои мазкур хело бо ҳам пайваста ва алоқаманд буда, он муайян кардани муносибати мушаххас ва оқибатиро мушкил мегардонад.

Яке аз маҳдудиятҳое, ки ба рушди хоҷагиҳои деҳқонӣ халал мерасонад, ин фоиданокии пасти соҳаи кишоварзӣ мебошад, сарфи назар аз он, ки ин соҳа дар иқтисодиёти кишвар нақши хеле муҳимро мебозад (21 фоизи ММД). Ин омил бо ҳамбастагӣ бо дигар омилҳо, сабабгори норасоии маблағҳои иловагии молиявӣ дар деҳқонон барои сармоягузории рушди хоҷагиҳои

худ мегардад, ки ин ба бад шудани шароити зисти сокинони деҳот оварда мерасонад. Омили дигар ин баромада рафтани мутахассисон вобаста ба муҳоҷирати беруна ва дохила мебошад - асосан ин мардон аз деҳот, аз ҷумла ҷавонон мебошанд.

Фоиданокии паст, кадоме ба пасту баландшавии тез-тези нархҳо дар бозори дохилӣ таъсири манфӣ мерасонанд, метавонад дар навбати худ мушкилотро ба хоҷагиҳои хурд ва хоҷагиҳои деҳқонии оилавӣ ҳангоми банақшагирии молиявӣ ба миён оварад. Дар ин ҳолат, бояд қайд намуд, ки деҳқонон барои банақшагирӣ ва идоракунии дурусти молия ва маблағҳои худ дониши лозима надоранд.

Дигар мушкилоти бо ин вобаста, дастрасӣ ба об ва харобшавии инфрасохтори ирригатсиониро дар бар мегирад, ки ин инфрасохтор пеш аз ба даст овардани истиқлолият дар кишвар сохта шуда буд ва ҳозир ба таъмири калон эҳтиёҷ дорад. То оғози солҳои 90-ум, системаи обёрикунӣ, бакуллӣ, реҷаи мӯътадили заминҳои обёришавандаро таъмин мекард. Камшавии якбораи маблағгузории корҳо барои тозакунӣ ва таъмири система, инчунин вуҷуд надоштани усули дурусти агротехникӣ ҳангоми истифодаи заминҳои шӯр, ки боиси вайронкунии реҷаи обёрикунӣ шуд, ба ғайриқаноатманд гардидани ҳолати мелиоративии зиёда аз 50.000 гектар замин аз майдони умумии заминҳои обёришаванда оварда расонид. Проблемаҳои инфрассохторӣ, дар навбати худ, норасоии обро барои обёрӣ меорад.

Илова бар ин, хоҷагиҳои деҳқонӣ аз таъсири баландшавии сатҳи обҳои зеризаминӣ ва шӯршавии хок зарар мебинанд. Ботлоқшавии замин ва маҳсулдории пасти замин дар натиҷаи обёрии бесамар, боиси паст шудани ҳосилнокӣ мегардад ва ба маҳсулнокии заминҳои кишоварзӣ таъсир мерасонад, ки дар навбати худ ба афзоиши сатҳи камбизоатӣ мусоидат мекунад.

Омили дигари маҳдудкунандаи рушд ин дастрасии маҳдуд ба захираҳои кишоварзӣ, аз қабили таҷҳизоти кишоварзӣ ва техникӣ, тухмиҳо, нуриҳо ва зархимикатҳо мебошад. Дастрасӣ ба таҷҳизот ва техникаи кишоварзӣ (масалан, трактороҳо, комбайнҳо ва култиваторҳо) мушкилоти ҷиддие барои хоҷагидорони хурд мебошад, хусусан барои занон. Ин барои ташкили беҳтари истеҳсолот халал мерасонад ва эҳтимолан ҳосилнокиро паст мекунад. Хоҷагиҳои деҳқоние, ки маблағҳои худро барои хариди тухмӣ, нуриҳо ва зархимикатҳо сарф менамоянд, натиҷаҳо ва даромадҳои умед доштаро ба даст намеоранд. Ҳамзамон, қайд кардан лозим аст, ки деҳқонон аксар вақт маҳсулоти арзонтар ва пастсифатро харидорӣ мекунанд.

Дастрасӣ ба технологияҳои нав мушкилоти дигари хоҷагиҳои деҳқонӣ мебошад. Аксар вақт, гуногунҳаҷм будани қитъаҳои заминҳои хоҷагидорони хурд, асосан, бинобар андозаи хурди онҳо, ба дастрас намудани технологияи нав таъсир мерасонад. Аз як тараф, андозаи хурди қитъаҳои замин татбиқ намудани технологияҳои самараноки истеҳсолиро, ба монанди механизатсия ё киштгардон намудани заминро маҳдуд менамояд. Аз тарафи дигар, андозаи хурди қитъаҳои замин барои ҷорӣ намудани технологияҳои зерин, ба монанди обёрикунии қатрагӣ ё ба таври обпошӣ имконият медиҳад.

Боз як масъалаи дигаре, ки на танҳо хоҷагиҳои хурд ва оилавӣ, балки ҳама навъ хоҷагиҳои деҳқонӣ дучор мешаванд, ин талабот ба хизматрасонии машваратӣ оид ба масъалаҳои андозбандӣ, технологияҳои истеҳсолӣ, агробизнес, содирот, фурӯш, маркетинг ва дигар масъалаҳо мебошад.

Яке аз монеаҳо барои рушди хоҷагидорони хурд ин истеҳсоли маҳсулоти кишоварзӣ мебошад.

Мувофиқи мусоҳибаҳое, ки бо хоҷагиҳои деҳқонӣ гузаронида шудаанд, имрӯз аксари хоҷагиҳои деҳқонӣ ба бозорҳо ва фурӯшгоҳҳо (супермаркетҳо) дастрасии бевосита надоранд. Хоҷагиҳои деҳқонӣ маҷбур мешаванд танҳо аз хизматрасониҳои миёнравон қаноатманд шаванд, ки онҳо маҳсулоти кишоарзиро ба нархи арзон харидорӣ намуда, баъд онро дар бозорҳо яклухт бо нархи иловагии аз 100 то 200 фоиз зиёдтар мефурӯшанд.

Омили муҳиме, ки аз ҷумла ба рушди хоҷагиҳои хурд ва оилавӣ таъсир мерасонад, ин нокифоя будани сармоягузории давлатӣ ба соҳаи кишоварзӣ ва мавҷуд набудани системаи суғуртаи кишоварзӣ мебошад. Дар шароити имрӯза, хоҷагиҳои деҳқонӣ ҳеҷ гуна ҳимояе надоранд, ва бори хавфҳои аз ҳисоби офатҳои табиӣ ба вуҷуд омада ва ба шароити номусоиди обу ҳаво вобастаро ба души худ мегиранд. Кӯмаки ягонае, ки хоҷагиҳои деҳқонӣ дар сурати дидани зарар дар натиҷаи хатарҳои иқлимӣ ва шароити номусоиди обу ҳаво мегиранд, ин кӯмаки давлатӣ дар шакли кӯмакпулии начандон калон барои харидорӣ намудани захираҳои кишоварзӣ ё озодкунии муваққатӣ аз андозҳо мебошад.

Ҷиҳати муҳими охирон, ки онро зикр кардан лозим аст, ин соддатар кардани бори андоз мебошад. Кишоварзӣ яке аз сарчашмаҳои муҳимтарини даромадҳои андоз мебошад, ки дар айни замон тақрибан 35 фоизи даромади умумии андозҳоро ташкил медиҳад. Ин маънои онро дорад, ки кишоварзӣ яке аз манбаи асосии маблағгузорӣ барои соҳаҳои дигари иҷтимоию иқтисодии Тоҷикистон мебошад. Дар айни замон, ба соҳаи кишоварзӣ се андози асосӣ андохта шудааст: андоз аз содироти нахи пахта; андози ягонаи кишоварзӣ, ки вобаста ба хусусиятҳои замин ситонида мешавад; ва пардохт барои истифодаи об дар заминҳои обёришаванда.

Сиёсати миллӣ дар соҳаи кишоварзӣ марбут ба хоҷагиҳои хурд ва оилавӣ

Соли 2016, Стратегияи миллии рушди Тоҷикистон барои давраи то соли 2030 (СМР-2030) тасдиқ карда шуд. Яке аз ҳадафҳои асосии стратегии СМР-2030 ин таъмин намудани амнияти озуқаворӣ ва дастрасии аҳолӣ ба ғизоҳои хушсифат мебошад, ва соҳаи кишоварзӣ дар ин ҳолат ҳамчун восита барои расидан ба ин ҳадаф ҳисобида мешавад. Тавре, ки дар сенариҳои рушди таҳияшуда ва зикршудаи ҳуҷҷат нишон дода шудааст, танҳо дар сурати нақшаи инерсионӣ (ба мисли пештара), дар назар дошта шудааст, ки ҳиссаи соҳаи кишоварзӣ дар сохтори ММД дар сатҳи пештара боқӣ мемонад ва аз соҳаи саноат бартарӣ мегардад. Мувофиқи сенарияҳои саноатӣ ва саноатию инноватсионӣ, ҳиссаи соҳаи кишоварзӣ дар ММД то ба 20% ё 17-18% паст мефарояд.

Қисми СМР-2030, ки аз ҷиҳати марбут ба соҳаи кишоварзӣ вобастагӣ дорад, бо таври консептуали ба Барномаи ислоҳоти кишоварзии Тоҷикистон барои давраи солҳои 2012-2020 (БИК) алоқаманд аст, ки он айни ҳол ҳуҷҷати муҳими таҳияшудаи сиёсӣ барои соҳаи кишоварзӣ мебошад. Дастовардҳои БИК бояд қисми ҷудоинопазир барои татбиқи нақшаи СМР-2030 гардад ва имконияти баланд бардоштани содироти маҳсулотро бо арзиши баланди

иловашуда ва рушди кишоварзии органикиро, ки ба содирот ва гирифтани ҷои воридот равона шудааст, муайян намоянд. Мувофиқи СМР-2030 рушди иқтисодӣ гуногуншакл, бо назардошти интенсификасия (сердаромад кардани)-и истеҳсоли маҳсулоти кишоварзӣ пешбинӣ шудааст.

Бояд қайд намуд, ки ҳадафи БИК ин таъмин намудани соҳаи кишоварзии сердаромад ва тамоили содиротидошта буда, он барои баланд бардоштани сатҳи зиндагии аҳолии деҳот, беҳтар намудани амнияти озуқаворӣ, тақсимоти минтақавии меҳнат дар соҳаи кишоварзӣ ва рушди соҳаи кишоварзии сермаҳсул ва даромаднок дар асоси истифодаи оқилона ва идоракунии устувори захираҳои табиӣ равона карда шудааст.

Умуман, БИК барои ноил шудан ба ду ҳадафи асосии миллӣ равона карда шудааст:

- гузаронидани ислоҳоти умумии кишоварзӣ, аз ҷумла ислоҳоти институтсионалӣ дар сатҳи миллӣ ва маҳаллӣ; ва
- вусъат додани соҳаи кишоварзии сермаҳсул ва даромаднок дар асоси истифодаи оқилона ва идоракунии устувори захираҳои табиӣ.

БИК дар асоси Стратегияи миллии рушди Тоҷикистон барои давраи то соли 2015 (СМР-2015), Стратегияи паст кардани сатҳи камбизоатӣ барои давраи солҳои 2010-2012, Барномаи амнияти озуқавории Тоҷикистон барои давраи то соли 2015 ва Консепсияи сиёсати аграрии Тоҷикистон таҳия шудааст. Бинобар ин, ҳамчун ҳадафи умумӣ, ислоҳотҳоро амалӣ намудан лозим аст ва инчунин масъалаҳои асосии дар стратегия ва барномаҳои дар боло зикршуда муайяншударо, ҳал намудан лозим аст.

Ҳукумати Тоҷикистон баробарҳуқуқии гендериро барои рушди устувори иқтисодӣ муҳим мешуморад ва ҳамзамон ба масъалаҳои баробарҳуқуқии гендерӣ ҳам дар СМР-2030 ва ҳам дар БИК диққати ҷиддӣ дода мешавад. Дар БИК барои мусоидат намудани баробарҳуқуқии гендерӣ «ҳар як марҳилаи ислоҳоти соҳаи кишоварзӣ» равона карда шудааст, зеро «муваффақияти ислоҳоти соҳаи кишоварзӣ аксаран ба он вобаста аст, ки имкониятҳо ва иқтидори занон чӣ гуна ичро мешаванд ва чӣ гуна ҳуқуқҳои онҳо амалӣ хоҳанд шуд» (Ҳукумати Тоҷикистон, с. 2012). Диққати махсус ба таъмин намудани баробарӣ дар заминдории дарозмуддат, таъмин намудани дастрасии баробар ба маблағгузорӣ дар соҳаи кишоварзӣ, таҳкими иқтидори занон ва мардон ва паст кардани оқибатҳои тағйирёбии иқлим барои гурӯҳҳои хусусан осебпазири аҳолӣ, ба монанди хонаводаҳое, ки сарпарасти он зан аст, дода мешавад.

Хулосаҳо

1. Дар натиҷаи як қатор қарорҳои сиёсӣ, ки солҳои 90-ум қабул шудаанд, зиёда аз 170 ҳазор хоҷагиҳои деҳқонӣ таъсис дода шуданд.
2. Аз хоҷагиҳои деҳқоние, ки сеяки заминҳои кишоварзиро ишғол мекунанд, зиёда аз нисфи онҳо хоҷагиҳои хурд ва оилавӣ мебошанд. Мувофиқи маълумот аз манбаъҳои гуногун, андозаи миёнаи қитъаҳои замини хоҷагиҳои хурд ва деҳқонии оилавӣ на зиёда аз 2 гектар аст.

3. Кишоварзӣ яке аз сарчашмаҳои муҳимтарини даромадҳои андоз мебошад, ки ҳоло тақрибан 35 фоизи ҳаҷми умумии даромадҳои андозҳоро ташкил медиҳад. Имрӯз соҳаи кишоварзӣ се андози асосӣ доранд: а) андоз аз содироти нахи пахта; б) андози ягонаи кишоварзӣ, ки вобаста ба хусусиятҳои замин ситонида мешавад; ва в) пардохт барои истифодаи об дар заминҳои обёришаванда.
4. Бо назардошти он, ки хоҷагиҳои деҳқонӣ ва хоҷагиҳои ёрирасони шахсӣ қисми зиёди маҳсулоти кишоварзиро истеҳсол мекунанд, онҳо вазифаи давлатро дар ҳалли масъалаҳои амнияти озуқаворӣ хеле сабук карда, дар таъминоти ғизо мусоидат мекунанд, ва бо ин роҳ сатҳи камбизоатиро паст менамоянд.
5. То имрӯз, тавсифоти расмии мувофиқа карда шудаи хоҷагиҳои хурд дар Тоҷикистон мавҷуд нест, ва инчунин нишондиҳандаҳои дақиқ барои муайян намудани хоҷагиҳои хурд ва оилавӣ вуҷуд надоранд.
6. Мушкилотҳо ва маҳдудиятҳое, ки дар рафти ин омӯзиши кишварӣ муайян карда шудаанд, метавонанд чунин гурӯҳбандӣ карда шаванд: а) бевосита ба фаъолияти хоҷагиҳо вобаста мебошанд, ки ба он таъсир расонида метавонанд; ё б) омилҳое, ки хоҷагиҳо ба он таъсир расонида наметавонанд, вале ин омилҳо метавонанд ба рушди хоҷагиҳои деҳқонӣ таъсири манфӣ ё мусбӣ дошта бошанд.
7. Гурӯҳи якуми мушкилотҳо ва маҳдудиятҳо, масъалаҳои ҳалталабро дар бар мегирад, ки хоҷагидорон бо онҳо дар ҳама марҳилаҳои истеҳсол, нигаҳдорӣ ва фурӯши маҳсулоти худ дучор мешаванд. Дар асоси муайян гардидани масъалаҳои ҳалталаб, эҳтиёҷоти хоҷагидорон муайян карда шуд.
8. Гурӯҳи дуюми мушкилотҳо ва маҳдудиятҳо, маҳдудиятҳоеро дар бар мегиранд, ки ҳамчун монеаҳои боздошткунанда барои рушди хоҷагиҳои деҳқонӣ амал мекунанд:

    a) Набудани системаи ҳаматарафаи хизматҳои машваратӣ дар бозор, ки он метавонист камбудиҳоро дар дониш ва малакаҳои хоҷагидорон бартараф намуда, сатҳи дониш ва малакаҳои онҳоро баланд бардорад.
    b) Гарон будани қарзҳо, ки хизматрасониҳои молиявиро дастнорас мекунанд;
    c) Фарсуда шудани системаҳои ирригатсионӣ, инчунин набудани ягон тартиби муайяни ҳамкорӣ байни хоҷагиҳои деҳқонӣ ва ассотсиатсияҳои истифодабарандагони об аз як тараф, ва бо шӯъбаи маҳаллии Агентии беҳдошти замин ва обёрии назди Ҳукумати Тоҷикистон аз тарафи дигар, ба дастрасии маҳдуди захираҳои обӣ оварда мерасонад.
    d) Аз сабаби ба муҳоҷират рафтани шумораи зиёди мардон, бештари занон ба таври қонунӣ ва амалан (аксар вақт) роҳбарони хоҷагиҳои деҳқонӣ мешаванд. Нобаробарҳуқуқии гендерӣ, ки ҳоло ҳам боқӣ мондааст, занонро дар ҷомеа дар сатҳи паст нигоҳ медорад, – бо дастрасии маҳдуд ба дониш, захираҳо, равандҳои қабули қарорҳо ва шабакаҳо, инчунин дар фарқияти калон ҳангоми пардохти музди меҳнат – бевосита ба маҳсулнокии хоҷагиҳои деҳқонӣ ва хоҷагиҳои ёрирасони шахсӣ таъсир мерасонад, ки дар натиҷа ба амнияти озуқаворӣ ва рушди соҳаи кишоварзӣ оварда мерасонад.
    e) Тағйирёбии иқлим ба хоҷагиҳои деҳқонӣ хавфи зиёдтарро ба вуҷуд меоварад, ки масъулияти он пурра ба дӯши хоҷагиҳои деҳқонӣ гузошта мешавад, ва бо ҳамин тариқ, ҳавасмандии истеҳсолкунандагони маҳсулоти кишоварзиро паст менамояд.
    f) Андозҳо ҳамчун яке аз монеаҳои боздошткунанда мегардад, дар ҳолати мавҷуд будани имкониятҳои васеъ барои вусъат додани хоҷагиҳои деҳқонӣ, омодагии хоҷагиҳои деҳқонӣ оиди коркарди маҳсулот бо баробари истеҳсолот.

9. Ҳукумат ва Вазорати кишоварзӣ аз ҳамаи мушкилотҳо ва маҳдудиятҳои марбут ба рушди соҳаи кишоварзӣ, аз ҷумла рушди хоҷагиҳои деҳқонӣ, ки дар ин тадқиқот зикр шудаанд,

огоҳ мебошанд. Аммо бо сабаби маблағгузории кам аз ҳисоби буҷети давлатӣ чунин вазифаҳо, ба монанди ба даст овардани устувории молиявӣ ё ташкили системаи суғуртаи миллӣ барои бахши кишоварзӣ ҳанӯз иҷро нашудаанд. Ҳамзамон, бояд қайд намуд, ки аксарияти ислоҳотҳои пешбинишуда бо дастгирии шарикони рушд амалӣ карда мешаванд.

Тавсияҳо

Дар асоси натиҷаҳо ва хулосаҳои тадқиқот як қатор тавсияҳо таҳия карда шуданд:

1. **Таҳияи тавсифоти ягонаи расмӣ бо нишондиҳандаҳои мушаххас барои хоҷагиҳои хурд ва деҳқонии оилавӣ.** Маълумоти мушаххаси оморӣ, ки дар асоси нишондиҳандаҳои дақиқ ва фаҳмо (даркшаванда) ҷамъ оварда мешаванд, иттилооти мушаххасро дар бораи андозаи хоҷагиҳои деҳқонии хурд ва оилавӣ таъмин менамояд. Ғайр аз ин, иттилооти дастрасшуда метавонанд ҳамчун асос барои таҳияи барномаҳои мақсаднок оиди пешбурди рушди хоҷагиҳои деҳқонии хурд ва оилавӣ истифода шаванд. Агентии Омор ва Кумитаи давлатии идоракунии замин ва геодезӣ метавонанд барои муҳокима ва татбиқи консепсияи ягона бо нишондиҳандаҳои мушаххас масъул бошанд
2. **Пурзӯр намудани системаи назорати сифатии тухмиҳо, зархимикатҳо ва нуриҳо, ки ба кишвар ворид карда мешаванд.** Дар ин самт коалитсияи давлат ва бахши хусусиро таъсис додан мумкин аст, ки дар он давлат нақши танзимкунандаро мебозад. Дар асоси бахши хусусӣ, шабакаи дилерӣ (тақсимкуни)-и рақобатпазирро таъсис додан зарур аст, ки мақсади он таъмин намудани бозор бо тухмиҳои хушсифат, зархимикатҳо ва нуриҳои минералӣ мешавад. Сатҳи огоҳӣ ва боваринокии хоҷагидоронро ба тухмиҳо, нуриҳо ва зархимикатҳо тавассути ташкил намудани намоишгоҳҳои агротехникӣ, ки онҳо метавонад ҳам дар муассисаҳои илмӣ (ба монанди Академияи илмҳои кишоварзӣ ва Донишгоҳи аграрии Тоҷикистон ба номи Ш. Шотемур) ва ҳам дар шабакаҳои дилерӣ амал намоянд, баланд бардоштан мумкин аст.
3. **Баланд бардоштани сифати иттилоот барои занон ва мардони хоҷагидор.** Таҳлили маҳсулотҳои мавҷудаи қарзии аз тарафи муассисаҳои молиявӣ пешниҳод шаванда нишон доданд, ки дар бозор пешниҳод оиди қарз бо назардошти мавсимияти тиҷорат дастрасанд, ки ин барои хоҷагидорон хеле муҳим аст, вале баъзе аз хоҷагидорон инро намедонанд. Занон касоне ҳастанд, ки бо эҳтимоли паст аз ин иттилоот дуртаранд. Тавсия додан мумкин аст, ки огоҳии занон ва мардони хоҷагидорро тавассути худи муассисаҳои молиявӣ баланд бардошта шавад.
4. **Паст кардани меъёри фоизи солона то ба 15 фоиз бо асъори миллӣ.** Бо вуҷуди ин, қарзҳо ҳақиқатан гаронанд, ва бинобар ин хоҷагиҳои хурд ва оилавӣ амалан ба он дастрасӣ надоранд. Паст кардани меъёри фоизи солона то ба 15 фоиз бо асъори миллӣ ба хоҷагидорон имконият медиҳад, ки мушкилоти молиявии худро саривақт ҳал намоянд. Аз дигар тараф қобили зикр аст, ки қарзҳои гирифтамешудаи бонкҳои тиҷоратии Тоҷикистон аз манбаъҳои

берунӣ худ гарон мебошанд. Дар асоси натиҷаҳои семинар-машваратии пешкашкунанда[3], тавсия дода мешавад, ки имконият барои робита бо фондҳои сармоягузорӣ баҳри ҷалб намудан ва гирифтани қарзҳои арзон ба соҳаи кишоварзӣ тавассути бонкҳои тиҷоратии Тоҷикистон дида баромада шавад.

5. **Таҳияи пешниҳоди суғуртавӣ барои фаъолияти кишоварзӣ.** Ин имконият медиҳад, то ба дараҷаи муайян хатари мушкилотҳоеро, ки хоҷагидорон бо онҳо дучор мешаванд, ба монанди тағйирёбии иқлим, эрозияи замин, харобшавӣ, беқувватшавӣ ва ботлоқшавии заминҳо (баландшавии сатҳи обҳои зеризаминӣ), ҳосилнокии паст, обхезӣ, хушксолӣ, ҳуҷуми ҳашаротҳои зараровар ва сармои ногаҳонӣ, камтар кунад.
6. **Баланд бардоштани сатҳи дониш ва малакаи занон ва мардони хоҷагидор.** Барои қонеъ гардондани талаботи хоҷагидорон оиди беҳтар намудани дониш ва малакаҳои онҳо якчанд роҳ мавҷуд аст. Курсҳои кӯтоҳмуддатро оид ба мавзӯъҳои махсус дар асоси Маркази таълимии калонсолон ва Ассотсиатсияи миллии хоҷагиҳои деҳқонӣ[4] дар минтақаҳо ташкил кардан мумкин аст. Яке аз роҳҳо ин мусоидат намудан барои ташкили мубодилаи таҷриба байни хоҷагидорони минтақаҳои гуногуни кишвар аст. Мисолҳои бомуваффақият, ин лоиҳаҳои «Барномаи Гендер, соҳибкорӣ ва бозор» ва «Барномаи Агро-Маркетинг» мебошанд, ки аз ҷониби ташкилотҳои Оксфам ва Ҳелветас амалӣ мегарданд. Вусъат додани дастрасии занон ба донишу малакаҳои муосир аҳамияти махсус дорад. Бо ин роҳ камбудиҳоро дар донишҳои гендерӣ бартараф намуда, имкониятҳои иқтисодии занонро вусъат додан мумкин аст.
7. **Беҳтар кардани робита байни хоҷагидорон ва истеъмолкунандагон.** Барқарор намудани робитаи устувор байни харидорони яклухт/супермаркетҳо ва истеҳсолкунандагон, ба деҳқонон имконият медиҳад, ки масъалаҳои фурӯши маҳсулотро ҳал кунанд. Ҳамкориҳои хоҷагидорон дар истеҳсоли як навъи маҳсулот ва андозаи якхелаи он, ҷолибияти маҳсулотро дар бозорҳои дохилӣ ва хориҷӣ баланд мебардорад ва бевосита даромади деҳқононро зиёд менамояд. Шарти асосӣ ин ташкили кооперативҳо мебошад, ки хоҷагиҳои деҳқониро муттаҳид месозад. Азбаски кооператив муассисаи ҳуқуқӣ мебошад, андозҳои баланд боз як монеае шуда метавонад. Вазорати кишоварзӣ дар сатҳи давлатӣ метавонад идеяи ба кооперативҳо додани имтиёзҳои андозиро пешбарӣ намояд ва метавонад омилҳои ҳавасмандкунӣ ва дигар тадбирҳоро барои баланд бардоштани дастрасии занон ба узвияти кооперативӣ ва аз он манфиат гирифтанро кор карда барояд.
8. **Таъсиси ҳадамоти дастгирикунандаи хоҷагиҳои деҳқонӣ ва хоҷагиҳои ёрирасонӣ шахсӣ дар назди мақомоти иҷроияи маҳаллии ҳокимияти давлатӣ.** Барои ин, таҳия намудани мақсадҳои муайян, таҳкими иқтидори техникӣ ва институтсионалии коргарони қабулшуда оид ба масъалаҳои кишоварзӣ дар мақомоти иҷроияи маҳаллии ҳокимияти давлатӣ лозим аст. Бо вуҷуди ин, хатари аз даст додани мутахассисони ихтисоснок аз мақомоти иҷроияи маҳаллии ҳокимияти давлатӣ мавҷуд аст. Дар оянда, бо истифода аз малакаҳои мутахассисони худ ва бо дастгирии бахши хусусӣ ва ташкилотҳои ғайриҳукуматӣ, Вазорати кишоварзӣ бояд ба мақомоти иҷроияи маҳаллии ҳокимияти давлатӣ барои пешкаши маълумот ва додани маслиҳат ба хоҷагиҳои деҳқонӣ ва хоҷагиҳои ёрирасони шахсӣ, кӯмак расонад.

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[3] Рӯзи 26 октябри соли 2018, дар Душанбе семинар-машварат, бо иштироки тарафҳои манфиатдори асосӣ, ба монанди намояндагони Вазорати кишоварзӣ, Бонки миллии Тоҷикистон, Ассотсиатсияи миллии хоҷагиҳои деҳқонӣ, донорон, созмонҳои байналмиллалии ва ғайра, гузаронда шуд . Умуман дар семинар шаш нафар иштирок намуданд.

[4] Ассотсиатсияи миллии хоҷагиҳои деҳқонӣ 109 Ассотсиатсияҳои хоҷагиҳои деҳқониро дар саросари кишвар дар бар мегирад.

9. **Таҳияи Веб-платформаи машваратию иттилоотӣ.** Веб-платформаи ягонаи машваратию иттилоотии ба ҳама дастрас, ки дар он усулҳо ва донишҳои муосир ҷамъ оварда шуданд, метавонад воситаи баланд бардоштани дараҷаи ихтисоснокии мутахассисон ва донишҷӯёни маҳаллӣ тавассути омӯзиши онлайн гардад. Бо вуҷуди ин, мушовирон, мутахассисони маҳаллӣ ва донишҷӯён метавонанд донишҳои худро дар курсҳои омӯзишӣ дар мактабҳо, Маркази таълими калонсолон ё Ассотсиатсияи миллии хоҷагиҳои деҳқонон ба таври пулакӣ истифода баранд. Ин платформа инчунин ба деҳқонон имконият медиҳад, ки донишҳои худро оид ба масъалаҳои муосири пешбурди соҳаи кишоварзӣ васеътар гардонанд. Веб-платформаро дар веб-сайтҳои Вазорати кишоварзӣ ва ё Академияи илмҳои кишоварзии Тоҷикистон ҷойгир намудан мумкин аст.
10. **Таҳияи тадбирҳои мушаххас оид ба вусъат додани ҳуқуқҳо ва имкониятҳои иқтисодӣ ва иҷтимоии занон** мутобиқи Барномаи ислоҳоти кишоварзии Тоҷикистон барои давраи солҳои 2012-2020 барои мусоидат намудан дар паст намудани фарқияти гендерӣ дар идораи хоҷагиҳои деҳқонӣ ва хоҷагиҳои ёрирасони шахсӣ.
11. **Соддатар кардани реҷаи андозбандӣ.** Аз моддаи 298 “Муқаррароти умумӣ” боби 44 “Реҷаи соддакардашудаи андозбандӣ барои истеҳсолкунандагони маҳсулоти кишоварзӣ (андози ягона)” ибораи “бидуни коркарди минбаъда” бароварда шавад.

Резюме

Введение

Мелкие и семейные хозяйства являются одной из наиболее распространенных форм ведения сельского хозяйства в мире. Их появление в странах Европы и Центральной Азии связано с переходом к рыночной экономике и принятием земельных реформ в начале 90-х годов, обусловившим повсеместное возникновение мелких и семейных хозяйств, сформированных на базе крупных государственных коллективных хозяйств. Спустя почти три десятилетия после начала первого этапа осуществления земельных реформ, мелкие и семейные хозяйства все еще сталкиваются со значительными трудностями в ведении бизнеса в секторе сельского хозяйства.

Для оказания поддержки мелким и семейным хозяйствам в решении актуальных задач и улучшении их экономического положения, Продовольственная и сельскохозяйственная организация Объединенных Наций (ФАО) инициировала Региональную инициативу по расширению прав и возможностей мелких и семейных хозяйств в странах Европы и Центральной Азии, направленную на содействие в достижении глобальной цели искоренения бедности в сельских районах целевых стран, обеспечение продовольственной безопасности. Таким образом, в каждой из целевых стран (Албания, Армения, Грузия, Кыргызстан, Северная Македония, Молдова и Таджикистан) были проведены страновые исследования, где основное внимание уделено: a) структурным процессам трансформации сельского хозяйства; b) состоянию деятельности мелких и семейных хозяйств (определения, данные и типологии); c) потребностям, проблемам и ограничениям мелких и семейных хозяйств; и (d) политическим инициативам, предпосылкам для разработки политики и ее осуществления, проводимые в каждой целевой стране.

Методология и подходы к проведению исследования

Методология исследования сочетает в себе проведение кабинетного исследования, интервью с основными заинтересованными сторонами и изучение конкретных случаев (кейс-стади).

Кабинетное исследование включает в себя оценку имеющихся нормативных документов, исследовательских работ, отчетов, исследований, а также других материалов, полученных от государственных органов, научных кругов, международных доноров и организаций. Кроме того, кабинетное исследование включает в себя изучение официальных статистических данных, полученных из общедоступных источников, дополненные данными исследования по уровню бедности и условиям жизни, данными/статистикой из научных кругов, донорских организаций и от других источников.

Интервью проводятся с целью предоставления данных и информации для получения ответов на четыре исследовательских вопроса. Интервью проводятся с отобранными специалистами,

представляющими основные заинтересованные стороны. Интервью нацелены на различные заинтересованные стороны и организованы в соответствии с требованиями отдельных респондентов или групп интервьюируемых лиц, в зависимости от результатов этапа исследования.

Кейс-стади используется для иллюстрации или демонстрации различных тем. Одним из примеров является кейс-стади политических мер для демонстрации результатов и их воздействия. Это может быть разработка схемы инвестиционной поддержки или тренинг для хозяйств, проводимый консультативными службами. На основе документации и информации, собранной в результате этих мер, сформулированы рекомендации к существующим или новым политикам.

В дополнение к этим методам исследования, в Душанбе были организованы два консультативных семинара с ключевыми заинтересованными сторонами.

Один вводный семинар, который был проведен в самом начале рабочего процесса, а второй валидационный семинар, на котором заинтересованным сторонам были представлены предварительные результаты, выводы и рекомендации исследования.

Роль и значение мелких и семейных хозяйств в экономике страны

Мелкие и семейные хозяйства как одна из форм дехканских хозяйств являются новыми экономическими субъектами в новейшей истории Таджикистана. Однако, на текущий момент в Таджикистане не существует единого согласованного определения мелких хозяйств, нет чётких индикаторов по определению, как мелких, так и семейных хозяйств. Существующая ситуация по отсутствию ясного и разделяемого всеми понятийного аппарата обуславливает различие в подходах по определению этих хозяйств, применяемое различными заинтересованными сторонами. На начало 2017 года в стране создано более 174 837 дехканских хозяйств. Основная доля (79 процентов) дехканских хозяйств осуществляет свою деятельность в Согдийской и Хатлонской областях (Таджстат, 2017b). Руководителем дехканских хозяйств чаще всего являются мужчины, но в связи с нерентабельностью отрасли и ростом внешней и внутренней миграции мужской части населения, также растет число дехканских хозяйств, возглавляемых женщинами.

Дехканские хозяйства вносят значительный вклад в развитие сельскохозяйственного сектора. На их долю приходится 32 процента производства сельскохозяйственной продукции и 7 процентов Внутренного Валового Продукта (ВВП) страны в целом (Таджстат, 2017c). Основная деятельность дехканских хозяйств связана с производством продукции (зерновые и бобовые, хлопок, картофель и бахчевые) в секторе растениеводства. Посевная площадь сельскохозяйственных культур в дехканских хозяйствах составила 545 100 га. В общем, 5.177 млн. га земли (37 процентов от общего земельного фонда) было выделено дехканским хозяйствам для

их деятельности, из которых 2.591 млн. га сельскохозяйственных угодий было выделено для сельскохозяйственного производства. Что касается животноводства, то в структуре сельскохозяйственного сектора доля дехканских хозяйств в этом секторе составляет около 3 процентов (Таджстат, 2017a).

В целом, можно отметить, что на дехканские хозяйства приходится весомая часть произведенной продукции сельского хозяйства, что тем самым способствует значительному снижению нагрузки на государство по решению вопроса по продовольственной безопасности.

Следует отметить, что в современных условиях также заметно возрастает и роль личных подсобных хозяйств, отличительными чертами которых являются экономическая независимость, рациональное использование неформального труда всех членов семьи, право собственности на произведенную продукцию и доходы, а также свободный малый бизнес, в котором владелец, организатор, предприниматель и сельский работник представлены в одном и том же лице.

В таблице 1 приведены основные экономические показатели дехканских и личных подсобных хозяйств за 2016 год:

Таблица 1. Основные экономические показатели дехканских и личных подсобных хозяйств за 2016 год.

Индикатор	Дехканские хозяйства	Личные подсобные хозяйства
Доля в ВВП страны, %	7	13
Сельскохозяйственное производство, %	34	61
Сектор животноводства, %	3	94
Сектор растениеводства, %	49	45

ИСТОЧНИК: ТАДЖСТАТ, 2008B; ТАДЖСТАТ, 2010B; ТАДЖСТАТ, 2015B; ТАДЖСТАТ, 2017C.

Потребности, проблемы и ограничения

Одной из основных целей данного исследования является выявление потребностей, проблем и ограничений, которые влияют на экономическое, социальное и экологическое положение дехканских хозяйств и их развитие, а также разработка выводов и соответствующих рекомендаций. Следует отметить, что указанные потребности, проблемы и ограничения в значительной степени переплетены и взаимосвязаны между собой, что обуславливает сложности с определением конкретной причинно-следственной связи.

Препятствием, мешающим развитию дехканского хозяйства, является низкая рентабельность сельскохозяйственного сектора, несмотря на то, что этот сектор, в целом, играет значительную роль в экономике страны (21 процент от ВВП). Данный фактор, во взаимозависимости с другими обуславливает отсутствие у самого фермера дополнительных финансовых средств для инвестиций в развитие своего хозяйства, что приводит к ухудшению условий жизни в сельской

местности. Другим следствием является отток специалистов в рамках внутренней и внешней миграции - в основном это мужчины из сельской местности, в том числе молодое поколение.

Низкая рентабельность, испытывающая негативное влияние частых скачков цен на внутреннем рынке, может в свою очередь, стать причиной в том числе у мелких и семейных дехканских хозяйств сложностей с финансовым планированием. Следует в данном случае отметить отсутствие у фермеров необходимых знаний для финансового планирования и управления.

Другие взаимосвязанные с этим проблемы включают в себя наличие доступа к воде и износ ирригационной инфраструктуры, которая была построена еще до независимости и которая в настоящее время нуждается в капитальном ремонте. До начала 90-х годов ирригационная система в целом поддерживала нормальный мелиоративный режим орошаемых земель. Резкое сокращение финансирования работ по очистке и ремонту, а также отсутствие надлежащего агротехнического подхода при использовании засоленных земель, нарушение режимов полива, стали причиной того, что более 50 000 га земель из общей орошаемой площади оказались в неудовлетворительном мелиоративном состоянии. Инфраструктурные проблемы, в свою очередь вызывают нехватку воды для орошения.

Кроме того, дехканские хозяйства страдают от последствий повышения уровня грунтовых вод и засоления почвы. Заболачивание почвы и снижение плодородия почвы за счет неэффективного орошения, приводит к снижению урожайности и подрывают продуктивность сельскохозяйственных земель, что, в свою очередь, способствует росту уровня бедности.

Еще одним препятствием для развития является ограниченный доступ к сельскохозяйственным активам, таким как сельскохозяйственное оборудование и техника, семена, удобрения и ядохимикаты. Доступ к сельскохозяйственному оборудованию или технике (например, как тракторы, комбайны и культиваторы) является серьезной проблемой для мелких хозяйств - особенно для женщин - препятствующая оптимальной организации производства и потенциально снижая урожайность. Дехканские хозяйства, инвестируя свои средства в покупку семян, удобрений и ядохимикатов, не получают ожидаемых результатов и доходов. В то же время следует отметить, что фермерами приобретается более дешёвая некачественная продукция.

Еще одной проблемой для развития дехканских хозяйств является доступ к новым технологиям. Чаще всего на доступность влияет различие площадей земельных участков мелких хозяйств, в основном из-за их небольшого размера. С одной стороны, небольшой размер земельных участков ограничивает внедрение эффективных производственных технологий, таких как механизация или севооборот, а с другой стороны, небольшой размер участка позволяет внедрять такие технологии, как капельное или стручковое орошение.

Потребность в консультационных услугах по вопросам налогообложения, производственных технологий, агробизнеса, экспорта, продажи, маркетинга и т.д. является проблемой, с которой сталкиваются все дехканские хозяйства, а не только мелкие и семейные хозяйства.

Одним из ограничений для развития мелких хозяйств является продажа сельскохозяйственной продукции. По мнению, опрошенных дехканских хозяйств, сегодня для большинства дехканских хозяйств прямой доступ к рынкам и супермаркетам закрыт. Дехканским хозяйствам приходится довольствоваться только лишь услугами перекупщиков, которые приобретают

продукцию по заведомо заниженной цене, а затем реализуют ее на оптовых рынках со 100-200 процентной накруткой.

Значимым фактором, влияющим в том числе на развитие мелких и семейных дехканских хозяйств, является незначительность государственных инвестиций в сельское хозяйство, отсутствие системы сельскохозяйственного страхования. В настоящее время дехканские хозяйства не имеют никакой защиты и несут риски, связанные с климатическими опасностями и возникающими неблагоприятными погодными явлениями. Единственная помощь, которую пострадавшие дехканские хозяйства получают в случае климатических опасностей и неблагоприятных погодных явлений - это государственная помощь в виде небольших субсидий на сельскохозяйственные активы или временное освобождение от налогов.

Последний важный момент, требующий внимания - это упрощение налоговой нагрузки. Сельское хозяйство на данный момент рассматривается в качестве одного из значимых источников налоговых поступлений, приносящим около 35 процентов от общей суммы налоговых поступлений. Это означает, что сельское хозяйство является одним из основных источников финансирования других социально-экономических секторов экономики Таджикистана. В настоящее время сельское хозяйство облагается тремя основными налогами: налог на экспорт хлопкового волокна; единый сельскохозяйственный налог, взимаемый в зависимости от характеристик земли; и плата за водопользование на орошаемых землях.

Национальная политика в области сельского хозяйства, влияющая на мелкие и семейные дехканские хозяйств

В 2016 году была одобрена Национальная стратегия развития Таджикистана на период до 2030 года (НСР-2030). Одной из основных стратегических целей НСР-2030 является обеспечение продовольственной безопасности и доступа населения к качественному питанию, и сельское хозяйство в данном случае рассматривается как инструмент достижения цели. Как указано в разработанных и указанных в документе сценариях развития, только в случае инерционного плана предполагается, что доля аграрного сектора в структуре ВВП сохраниться на прежнем уровне и будет преобладать над промышленностью. Согласно индустриальному и индустриально-инновационному сценариям, доля аграрного сектора в ВВП снизится либо до 20%, либо до 17-18%.

НСР-2030 в части, касающейся сельского хозяйства концептуально взаимосвязана с Программой реформирования сельского хозяйства Таджикистана на 2012-2020 годы (ПРСХ), значимым на данный момент документом национальной политики, разработанным в сфере сельско-

го хозяйства. Достижения ПРСХ должны стать составной частью планомерной реализации НСР-2030 и обусловить возможность в том числе экспорториентированного и импортозамещающего развития, наращивания экспорта продуктов с высокой добавленной стоимостью и развития органического земледелия. Диверсификация экономического роста согласно НСР-2030 предполагается за счет интенсификации сельскохозяйственного производства.

Следует отметить, что ПРСХ направлена на обеспечение высокодоходного и экспортоориентированного сельского хозяйства для повышения уровня жизни сельского населения, обеспечения продовольственной безопасности и укрепления позиции сельского хозяйства в региональном разделении труда, а также на развитие продуктивного и рентабельного сельского хозяйства на основе рационального использования и устойчивого управления природными ресурсами.

В целом, ПРСХ направлено на достижение двух основных национальных целей:

- проведение общей сельскохозяйственной реформы, включая институциональную реформу, на национальном и местном уровнях; и
- развитие продуктивного и рентабельного сельского хозяйства, основанного на рациональном использовании и устойчивом управлении природными ресурсами.

ПРСХ опирается на Национальную стратегию развития Таджикистана на период до 2015 года (НСР-2015), Стратегию сокращения бедности Таджикистана на период 2010-2012 годов, Программу продовольственной безопасности Таджикистана на период до 2015 года и Концепцию аграрной политики Таджикистана, поэтому в качестве общей цели обозначена необходимость реализации реформ и решения основных проблем, обозначенных в вышеуказанных стратегиях и программах.

Правительство признает, что гендерное равенство имеет важное значение для устойчивого экономического роста, и ввиду этого, вопросы гендерного равенства учитываются как в НСР-2030, так и в ПРСХ. ПРСХ направлена на содействие гендерному равенству “на каждом этапе реформы”, поскольку “успех сельскохозяйственной реформы будет в значительной степени зависеть от того, как будет реализовываться потенциал женщин и как будут осуществляться их права” (Правительство Таджикистана, 2012 год). Особое внимание уделяется обеспечению равенства в долгосрочном землевладении, обеспечению равного доступа к финансированию сельского хозяйства, развитию потенциала женщин и мужчин и смягчению последствий изменения климата для особо уязвимых групп, таких как домохозяйства, возглавляемые женщинами.

Выводы

1. В результате принятия ряда политических решений в 90-х годах, в Таджикистане было создано более 170 000 дехканских хозяйств.

2. Из числа дехканских хозяйств, на долю которых приходится три четверти земель, более половины – мелкие и семейные. По различным данным, средний размер площади земельных участков у мелких и семейных дехканских хозяйств составляет не более 2 га.
3. Сельское хозяйство является одним из важных источников налоговых поступлений, которые в настоящее время составляют около 35 процентов от общего объема налоговых поступлений. В настоящее время сельское хозяйство облагается тремя основными налогами: а) налог на экспорт хлопкового волокна; б) единый сельскохозяйственный налог, взимаемый в зависимости от характеристик земли; и в) плата за водопользование на орошаемых землях.
4. С учетом того, что на дехканские хозяйства и личные подсобные хозяйства приходится весомая часть произведенной продукции сельского хозяйства, они значительно снижают нагрузку на государство по решению вопроса о продовольственной безопасности, внеся вклад в его обеспечении, тем самым снижают уровень бедности.
5. На текущий момент не существует единого согласованного определения мелких хозяйств в Таджикистане, и нет четких показателей по определению как мелких, так и семейных дехканских хозяйств.
6. Проблемы и ограничения, выявленные в ходе этого странового исследования, могут быть классифицированы как: а) непосредственно связанные с деятельностью хозяйств, на которые он может повлиять; или б) факторы, на которые хозяйства не могут повлиять, но которые могут оказать негативное или положительное влияние на развитие дехканских хозяйств.
7. Первая группа проблем и ограничений включает в себя проблемы, с которыми сталкиваются хозяйства на этапах производства, хранения и реализации продукции. На основании выявленных проблем были определены потребности хозяйств.
8. Вторая группа проблем и ограничений включает те ограничения, которые выступают сдерживающим барьером на пути развития дехканских хозяйств:

    a) Отсутствие на рынке широко распространённой системы предоставления консультативных услуг, позволяющих восполнить пробел или недостаток в знаниях и навыках фермеров;
    b) Дорогие кредиты, что делают недоступными финансовые услуги;
    c) Износ ирригационных систем, а также отсутствие четко определенной системы взаимодействия между дехканскими хозяйствами и ассоциациями водопользователей с одной стороны и Агентством по мелиорации и ирригации при Правительстве Таджикистана с другой стороны, приводит к ограниченному доступу к водным ресурсам.
    d) Из-за массовой миграции мужчин, женщины все больше становятся де-юре и (чаще) де-факто руководителями хозяйств. Сохраняющееся гендерное неравенство, которое удерживает женщин в более низком статусе в обществе - с ограниченным доступом к знаниям, ресурсам, процессам и сетям по принятию решений, а также со значительным различием в оплате труда - напрямую влияет на производительность дехканских хозяйств и личных подсобных хозяйств и, как следствие, на продовольственную безопасность и развитие сельского хозяйства.
    e) Изменение климата обуславливает рост риска для хозяйств, при котором ответственность полностью возлагается на дехканские хозяйства, выступая демотиватором для производителей сельскохозяйственной продукции.
    f) В случае наличия условий для расширения дехканских хозяйств, его готовности наряду с производством, охватить и переработку, налоги выступят сдерживающим барьером.

9. Правительство и Министерство сельского хозяйства в курсе всех проблем и ограничений, связанные с развитием сельскохозяйственного сектора, в том числе с развитием дехканских хозяйств, выявленные в рамках данного исследования. Но из-за низкого финансирования сектора со стороны государственного бюджета, такие задачи, как достижение финансовой устойчивости или создание национальной системы страхования для сельскохозяйственного сектора до сегодняшнего дня не исполнились. В то же время, следует отметить, что большинство запланированных реформ реализуются при поддержке партнеров по развитию.

Рекомендации

На основании полученных результатов и сделанных выводов исследования были разработаны ряд рекомендаций:

1. **Разработка единого официального определения с конкретными показателями для мелких и семейных дехканских хозяйств.** Конкретные статистические данные, сбор которых будет осуществлен на основе четких и понятных показателей, позволит получить конкретную информацию о размерах мелких и семейных дехканских хозяйств. Кроме того, полученная информация может послужить основой для разработки целевых программ по развитию мелких и семейных дехканских хозяйств. Ответственность за обсуждение и внедрение единой концепции с конкретными показателями может быть возложена на Статистическое Агентство и Государственный комитет по землеустройству и геодезии.
2. **Усиление системы контроля за качеством семян, ядохимикатов и удобрений, ввозимых в страну.** В этом направлении может быть создана коалиция государственного и частного сектора, при котором государству будет отводится регулятивная роль. На базе частного сектора может быть создана дилерская сеть на конкурентной основе по предоставлению рынку качественных семян, ядохимикатов и удобрений. Повышение осведомленности и уверенности фермеров в семенах, удобрениях и ядохимикатах можно организовать путем создания демонстрационных агроучастков, которые могут функционировать как при исследовательских институтах (таких как Таджикская академия сельскохозяйственных наук и Таджикский аграрный университет имени Ш. Шотемура), так и при дилерских сетях
3. **Повышение качества информации для фермеров - женщин и мужчин.** Обзор существующих кредитных продуктов, предлагаемых финансовыми учреждениями, показал наличие продуктов, учитывающих сезонность бизнеса, что важно для фермера, но некоторые фермеры не знают об этом. Еще меньше вероятность того, что эту информацию получат фермеры - женщины. Рекомендацией может стать повышение информированности фермеров, как женщин, так и мужчин, через непосредственно самих финансовых учреждений.
4. **Снизить годовую процентную ставку до 15 процентов в национальной валюте.** При этом кредиты, действительно, являются дорогими, что делает их практически недоступными для мелких и семейных дехканских хозяйств. Снижение годовой процентной ставки до 15 процентов в национальной валюте позволит фермерам своевременно решать свои финансовые проблемы. Но с другой стороны, кредиты, получаемые коммерческими банками Таджикистана из внешних источников также являются дорогими. По итогам семинара по

передаче результатов странового исследования[5], рекомендуется рассмотреть возможность установления связи с инвестиционными фондами для привлечения и получения коммерческими банками Таджикистана недорогих кредитов для сельскохозяйственного сектора.

5. **Создание страхового продукта для сельскохозяйственной деятельности.** Это позволило бы в определенной степени минимизировать риски фермеров, связанные с такими проблемами, как изменение климата, эрозия земли, опустошение, истощение и заболачивание земель (повышение уровня грунтовых вод), низкая урожайность, наводнения, засуха, нашествия саранчи и внезапные заморозки.
6. **Повышение уровня знаний и навыков женщин, и мужчин.** Потребности в знаниях и навыках могут быть преодолены посредством нескольких опций. На базе существующего Центра образования взрослых и Национальной ассоциации дехканских хозяйств[6] в регионах могут быть созданы краткосрочные курсы для обучения по конкретным темам. Одним из вариантов может быть содействие в организации обмена опытом между фермерами различных регионов. Успешными примерами этого варианта являются проекты «Программа Гендер, предпринимательство и рынки» и «Программа Агро-рынков», реализуемые соответственно организациями Oxfam и HELVETAS. Особое значение имеет расширение доступа женщин к знаниям и навыкам для устранения пробелов в гендерных знаниях и расширить экономические возможности женщин.
7. **Расширить информационное взаимодействие между фермерами и потребителями.** Создание устойчивой связи между оптовыми покупателями/супермаркетами и производителями позволит фермерам решать вопросы с реализацией продукции. Кооперация фермеров для производства продукции единого сорта и размера позволит повысить привлекательность производимой продукции на внутреннем и внешнем рынках, и напрямую увеличит доход фермеров. Основным условием является создание кооперативов, которые будут объединять дехканские хозяйства. Поскольку кооператив является юридическим лицом, препятствием могут стать более высокие налоги. Министерство сельского хозяйства может продвинуть идею налоговых льгот для кооперативов на государственном уровне и может разработать стимулы и другие меры для расширения доступа женщин к членству в кооперативах и получения выгод от него.
8. **Создание служб поддержки дехканских и личных подсобных хозяйств при местных исполнительных органах государственной власти.** Для этого необходима разработка четких целей, а также укрепление технического и институционального потенциала набираемого персонала по вопросам сельского хозяйства местным исполнительным органом государственной власти. Тем не менее, существует риск кадровых потерь среди квалифицированного персонала местных исполнительных органов государственной власти. В будущем, используя навыки своих специалистов и при поддержке частного сектора и неправительственных организаций, Министерство сельского хозяйства должно содействовать местным исполнительным органам государственной власти в предоставлении информации и консультаций дехканским хозяйствам и личным подсобным хозяйствам.
9. **Создание консультативно-информационной Веб-платформы.** Единая общедоступная консультативно-информационная веб-платформа, аккумулирующая современные подходы и знания, может стать средством повышения квалификации профильных местных экспертов и студентов, посредством проведения онлайн-обучения. Кроме того, консуль-

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[5] 26 октября 2018 года, в Душанбе был проведен семинар, с участием заинтересованных сторон, таких как представители Министерства сельского хозяйства, Национального банка Таджикистана, Национальной ассоциации дехканских хозяйств, международных донорских организаций и т.д. В целом, на семинаре приняли участие шесть человек.

[6] Национальная ассоциация дехканских хозяйств объединяет 109 Ассоциаций дехканских хозяйств по стране.

танты, местные эксперты и студенты могли бы применять свои знания на учебных курсах в школах, Центре обучения взрослых или Национальной ассоциации дехканских хозяйств на платной основе. Эта платформа также позволит фермерам расширить свои знания по вопросам ведения современного сельского хозяйства. Веб-платформа может быть размещена на веб-сайтах Министерства сельского хозяйства или Таджикской академии сельскохозяйственных наук.

10. **Разработка конкретных мер по расширению экономических и социальных прав, и возможностей женщин** в соответствии с Программой реформы сельского хозяйства Таджикистана на 2012–2020 годы для способствования сокращения гендерного разрыва в управлении дехканскими хозяйствам и личными подсобными хозяйствами.
11. **Упрощение налогового режима.** Из статьи 298 «Общие положения» главы 44 «Упрощённый режим налогообложения для производителей сельскохозяйственной продукции (единый налог)» убрать словосочетание «без последующей переработки».

1. Introduction to smallholders and family farms and their role in Europe and Central Asia

1.1 Background for the Regional Initiative supporting smallholders and family farms

Europe and Central Asia is largely a region of smallholders and family farms. FAO has in the region 18 programme countries, of which the large majority have farm structures dominated by smallholders and family farms. These countries have either farm structures fully dominated by smallholders or dualistic farm structures with a large number of small farms and a small number of large, corporate farms. In most of the countries, but not all, the current farm structures are the outcome of land reforms implemented from the beginning of the transition from planned economy towards market economy that began after 1990. Smallholders and family farms in the FAO programme countries are usually at the same time suffering from a wide range of needs and constraints. These farms are often not economically viable, and the rural population remains the most poor and vulnerable part of the population. Despite this, smallholders and family farms potentially represent a key resource to achieving sustainable economic, social and environmental development. Smallholders and family farms can achieve higher levels of income, production and productivity through the sustainable utilization of resources and intensification of production, better organization, adequate public services and better integration into the agrifood value chains. Getting family farming right in this respect is a key component to enhancing food security, ensuring equitable and decent livelihoods for all rural women and men, achieving sustainable rural development and diversification in rural areas, and reducing rural poverty.

Supporting smallholders and family farms is one of the four priorities for FAO in Europe and Central Asia, confirmed by the FAO Regional Conference in 2016. FAO launched in the region in 2014 the *Regional Initiative on Empowering Smallholders and Family Farms for Improved Rural Livelihood and Poverty Reduction*. The Regional Initiative builds on the legacy of the International Year of Family Farming in 2014. In addition, the United Nations General Assembly has, in December 2017, officially declared 2019–2028 the Decade of Family Farming, and thus the Regional Initiative will continue to provide the framework for FAO support to family farms in Europe and Central Asia.

The FAO REU Regional Initiative has two main components:

1. Support policy development and innovative practices for increased sustainable agricultural production.
2. Support the improvement of rural livelihoods and enhanced access to natural resources.

Through the first component, support is provided to the development of competitive and commercial smallholders and family farms. There is a need to increase the capacities of the farmers in terms of sustainable agricultural production, using pilot projects, farmer field schools and strengthened extension services. In this context, FAO supports policy development and practices in line with the Sustainable Food and Agriculture principle (FAO, 2014a), such as efficient use and management of natural resources and adaptation and resilience to climate change. More specifically, FAO intends to focus on the promotion of good agricultural practices in the region, such as integrated pest management, organic agricultural techniques, conservation of plant genetic resources and proactive drought risk management. In addition, work will be done on modern irrigation systems, sustainable forest management and fish production, including fish seed improvement and focusing on supporting smallholders.

Another main challenge of the Regional Initiative is to ensure inclusive growth through improved rural livelihoods. This is supported through the second component of the Initiative. There is a need, both at policy and community level, to ensure that disadvantaged and vulnerable groups also benefit from economic growth and to accelerate gender equality and rural women's economic empowerment. In this context, FAO supports, under the programmatic approach of the Regional Initiative, the multi-sectoral rural development policies, integrated community development, improved access to value chains, and the implementation of the Voluntary Guidelines on the Responsible Governance of Tenure (VGGT) (FAO, 2012), including addressing structural problems with land fragmentation and small farm sizes through land consolidation instruments.

As part of the preparation of the workplan for the Regional Initiative for 2018/19, the Initiative has been refocused to ensure strong and increased contribution to the implementation of the 2030 Agenda and to achieving the Sustainable Development Goals (SDGs). The Regional Initiative will contribute to SDG 2 on zero hunger, in particular SDG target 2.3 on doubling the agricultural productivity and income of small-scale food producers. Furthermore, the Regional Initiative contributes to SDG 1 on ending poverty (target 1.4 on ensuring equal rights to land and other natural resources and target 1.B on pro-poor and gender-sensitive development strategies), to SDG 4 on ensuring inclusive and equitable quality education (especially target 4.3), to SDG 5 on promoting gender equality (target 5.A to undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, and target 5.B to enhance the use of enabling technology to promote the empowerment of women). The Regional Initiative also contributes to SDG 8 on the promotion of sustainable and inclusive economic growth (target 8.2 on achieving higher levels of economic productivity through diversification and target 8.3 to promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and that encourage the formalization and growth of micro-, small- and medium-sized enterprises) and also to SDG 10 on reducing inequality within and among countries (target 10.2 to empower and promote the social, economic and political inclusion of all and target 10.4 to adopt policies – especially fiscal, wage and social protection policies – and progressively achieve greater equality).

1.2 Background and objectives of the present country study

The background for conducting country studies on the challenges, needs and constraints of smallholders and family farms in the seven countries has been a wish to further strengthen the Regional Initiative and develop the Initiative towards a stronger programmatic approach at both the regional and the country level. In order to provide support to smallholders and family farms, there has been a need to develop a better understanding and knowledge platform of the main challenges, needs and constraints of smallholders and family farms in the specific country context. Even though many of the challenges are the same throughout the region, there are still significant variations among the countries, which it is important to be aware of and understand when designing support to smallholders and family farms in the specific country.

FAO has, during 2017–2018, conducted country studies on the needs and constraints of smallholders and family farms in seven countries of the region as part of a regional project (TCP/RER/3601). The countries included are the countries that have been the focus countries of the Regional Initiative during 2014–2017; these are Albania, Armenia, Georgia, Kyrgyzstan, Republic of Moldova, North Macedonia and Tajikistan.

It has been the objective of the country studies first to analyse the development trend and current state of smallholders and family farms in the specific country, second to study the current political priorities and policies affecting smallholders and family farms, and finally, based on the conclusions made, to provide recommendations, mainly at the policy level, on how to further support the development of commercial family farms and at the same time ensure, in general, inclusive growth, improved rural livelihoods and the reduction of rural poverty. It is hoped that the country study will not only be relevant for FAO but also for the Government of Tajikistan, donors and other international organizations when formulating policy and preparing programmes. Furthermore, it is the intention that the recommendations from the study will feed directly into the formulation of the Country Programming Framework, which is the multi-annual cooperation agreement between FAO and the country.

Furthermore, the seven country studies contribute to raising awareness on the needs and constraints of smallholders and family farms, and they promote the support to smallholders and family farms provided by FAO under the programmatic umbrella of the Regional Initiative among Government institutions, civil society organizations and other stakeholders at country level, as well as among donors and international organizations. In this way, it is hoped that the studies will lead to the establishment of enhanced partnerships and the mobilization of resources to further scale up support to smallholders and family farms.

It is, as mentioned, a global observation that smallholders and family farms face needs, constraints and challenges, limiting their development and reducing their potential, and that the current policies only to a limited extent provide appropriate support to their development.

Based on this global observation, it is the objective of the country studies to verify the observations through answers to the following research questions:

1. What are the trends in and the current role and weight of smallholders and family farms in economic, social and environmental development in the covered countries?
2. What are the main needs, constraints and challenges for the realization of the economic, social and environmental development potential of smallholders and family farms?
3. Which current administrative procedures, institutional settings and policy interventions are implemented that support or prevent the development of smallholders and family farms?
4. Which future administrative procedures, institutional settings and policy interventions can be developed and recommended to strengthen the role of smallholders and family farms in economic, social and environmental development and in the transformational change process?

The research questions are answered following a common overall methodology presented in Section 2.

2. Methodology and approach

2.1 The overall methodological principles of the Regional TCP on smallholders and family farms

The methodology summarised below is common for all seven country studies, while the country-specific approach is presented in Section 2.2.

The research methodology combines the use of desk research, interviews with key stakeholders and the use of case studies.

DESK RESEARCH:

The desk research covers an assessment of available policy documents, research papers, reports, studies and others from public authorities, academia and international donors and organizations. Furthermore, the desk research covers official statistics from public sources supplemented with poverty and living conditions surveys, data/statistics from academia, donor organizations and other contributors. The desk research contributes to answering all of the main research questions.

INTERVIEWS:

Interviews were accomplished with the aim of contributing data and information in answering the four research questions. They contribute to filling in data gaps identified during the desk research. Interviews were conducted with selected resource persons representing key stakeholders and dehkan farms.

The interviews targeted different stakeholders and were streamlined to the individual interviewee or groups of interviewees, depending on the findings from the desk research phase.

An interview template has been prepared and was used by the national experts/consultants when interviewing national stakeholders and resource persons. The template includes the themes covered by the project.

Two rounds of interviews were accomplished: 1) The national expert/consultant accomplished the primary round of interviews of national stakeholders and resource persons. The interview template was targeted to the expertise of the person being interviewed. 2) The national expert/consultant made additional interviews during the final stage of writing the report to address the gaps that emerged during the analysis of the primary and secondary data.

The interviews are individual or group interviews, depending on the topic and the situation. The national expert/consultant planned, carried out and reported the interviews. The interviews contribute to answering the four research questions.

CASE STUDIES:

Case studies are used to illustrate or demonstrate various topics. One example is case studies of policy interventions to demonstrate the results and impacts of these interventions. It can be an investment support scheme, or it may be a training of farmers accomplished by advisory services. Based on the documentation and information gathered from these interventions, recommendations are formulated to existing or to new policies. These good policy examples are useful, not only for the country in question but also for other countries facing similar challenges.

The case studies also include studies of needs, challenges and constraints identified through stakeholder interviews and where the case studies exemplify or illustrate the topics. The case studies were prepared at family, village and municipality level, depending on the selected topic and in order to ensure diversity.

Furthermore, case studies also include examples of administrative procedures and/or institutional settings that prevent or support the development of smallholders and family farms. These cases were also identified though stakeholder interviews.

WORKSHOPS:

Two workshops have been organized in each country.

One introductory workshop, accomplished right at the beginning of the working process, had the objective to clarify and define:

a) the definition of smallholders and family farms;
b) the current situation and the state of play of smallholders and family farms;
c) the problem analysis regarding needs, constraints and challenges for smallholders and family farms;
d) the policy analysis, identifying and targeting administrative procedures, institutional settings and policy solutions to the identified needs, constraints and challenges; and
e) the comparative advantage of FAO *vis-à-vis* the donor community in providing solutions to the identified needs, constraints and challenges.

The second workshop was a validation workshop, where the preliminary findings, conclusions and recommendations were presented to the stakeholders who participated in the first country workshop as well as new stakeholders identified through the working process. The objective was to validate the analysis and to establish a common understanding about the conclusions and recommendations. The workshop took place at the end of the process but before finalization of the study, so that requests for adjustments from the workshop could be taken aboard.

A synthesis report was prepared based on the seven country reports, and a regional validation workshop was organized in Budapest in March 2018 for the discussion and validation of the synthesis report and with the objective to further enhance the support to smallholders and family farms in Europe and Central Asia through the Regional Initiative.

2.2 Approach – Description of the specific approach taken in Tajikistan

In order to introduce the goals and objectives of the Regional Initiative to the stakeholders (ministries, agencies and committees); civil society (non-governmental organizations and cooperatives); consulting organizations; universities and institutes; international organizations; and financial institutions, there was held an introductory workshop on 5 September 2017 in the city of Dushanbe. In total, the workshop was attended by 32 people (25 men and seven women).

Within the framework of the desk research, the existing documentation on smallholders and family farms (regulations, project reports, research papers, presentations, brochures, articles and more) and statistical information on Tajikistan's agriculture for 2005–2015 was collected and analysed. The results of the desk research became the main foundation of the country report on Tajikistan, supplemented by interviews with stakeholders.

Target groups for conducting interviews with stakeholders were identified during the desk research. Thus, the main categories of respondents were farms with up to 5 ha of land, farms with more than 5 ha of land, and households with household plots from different oblasts (regions) of Tajikistan, as well as such stakeholders as representatives of the Ministry of Agriculture of Tajikistan, the Agency for Statistics under the President of Tajikistan (TajStat), international organizations (World Bank, USAID, HELVETAS, Oxfam, ACTED), civil society organizations and consulting organizations.

During the interview with stakeholders, some case studies were identified from various regions of the country: in Sughd, Khatlon, and in the Districts of Republican Subordination (DRS). A total of five case studies (two with men and three with women) were carried out. One case study was conducted in Sughd region (with a woman), two in Khatlon region (one with a man and one with a woman), and two in DRS (one with a man and one with a woman).

To finalize the study results, a validation workshop was held on 12 January 2018. The same participants from the introductory workshop were invited to the validation workshop, as well as those with whom interviews were conducted to determine the final needs, challenges and constraints of smallholders and family farms and the recommendations for finalizing the country report on Tajikistan. In total, 45 people (31 men and 14 women) participated in this event, in which participants were asked to give their assessment of the conclusions and recommendations made based on the results of the study. All comments and suggestions received from participants were taken into account when finalizing the report.

3. Development trend and current state of smallholders and family farms in Tajikistan

3.1 Definition of 'smallholder' and 'family farm' in the national context of Tajikistan

Smallholders and family farms, as one of the forms of dehkan farms, are the new economic subjects in the contemporary history of the Republic of Tajikistan. Their formation is a phenomenon of the second stage of the restructuring of state collective farms and state farms, which were originally reorganized into large farms.

At the moment, there are two main publicly available sources of statistical data on the activities of the dehkan farms in general: special publications, including performance indicators of the dehkan farms, and the first agricultural census, which was conducted in 2013. To date, however, for whatever reasons, the results of the census have not yet been published (TajStat, 2013).

It is important to note that at the moment there is no single agreed-upon definition of smallholders in Tajikistan, and there are no clear indicators for the definition of either smallholders or family farms. The current situation, with the absence of a clear and shared conceptual apparatus, causes differences in approaches to the definition of these farms, applied by different stakeholders.

Below is described how stakeholders define "smallholders" and "family farms."

Legislation. It should be noted that at the legislative level, the concept of "smallholders" is absent.

As for "family farms," itvs definition was given in the Law of Tajikistan from 19 May 2009, which ceased to be effective on 15 March 2016, in connection with the adoption of the new law (No. 1289 "On dehkan farms"). The definition is formulated as follows in the new law: "[A dehkan farm] is a subject of entrepreneurship, production, storage, processing and sale of agricultural products, which are based on the individual activities of one person or joint activity of a group of individuals on the land and property belonging to them."

> In the Law of 2009, two indicators have been identified in the definition of a family dehkan farm: **family property** and **joint family labour activity.** *The definition of dehkan farm: "The family dehkan farm is a farm the labour activity of which is based on family entrepreneurship and on the basis of joint property."*

Thus, the following characteristics are distinguished: the entrepreneurial nature of the dehkan farm and the activities of one or several individuals. In the Law of 2016, the definition of the dehkan farm does not contain delimitation by types, while it does state that the farm can be formed either with the formation of a legal entity or without the formation of a legal entity.

It should be separately noted that, in connection with the family dehkan farm, there are discussions about private subsidiary farms (private subsidiary farms), which can also be considered as a kind of family farm. The formation of these farms is connected with a high concentration of the population in rural areas and the need to address the issue of food security at the country level, which led to the development of a decree "On the allocation of 50 thousand ha of irrigated and rain-fed arable land for

private subsidiary farm of citizens" (No. 342 from 9 October 1995) and a decree "On the allocation of 25 thousand ha of private subsidiary farm of citizens" (No. 874 from 1 December 1997).

PSF practice in the production of early vegetables

"Favorable weather conditions made it possible to create a greenhouse on my kitchen garden for growing early vegetables (tomatoes and cucumbers). The size of the kitchen gaden is 0.11 ha. Everybody in the family are engaged in growing – me and my three children. For the last year, to get a good harvest, I spent SM 1 000 (USD 115) for the purchase of seeds, mineral and organic fertilizers, as well as pesticides. Most of the products are sold in the market of Kurgan-Tube."

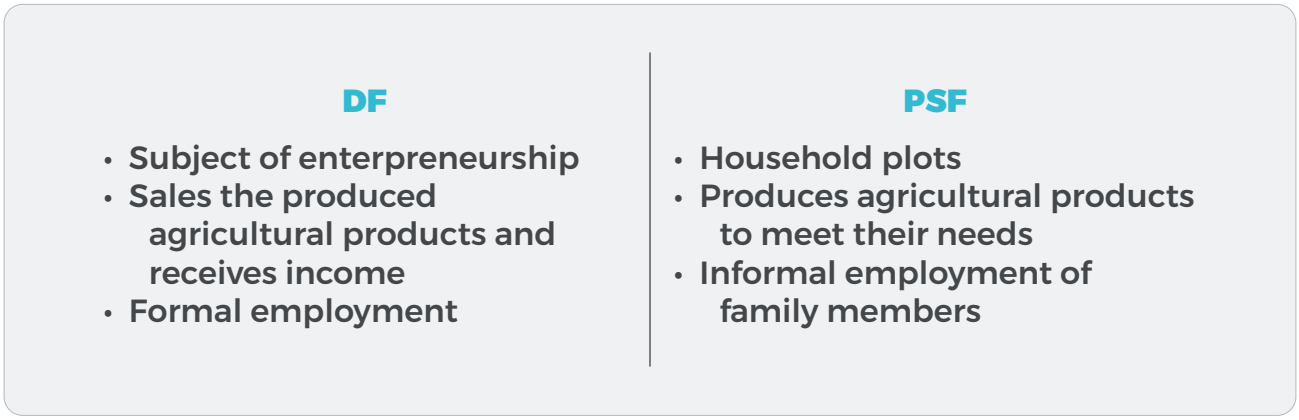
Case study interview with a woman from a private subsidiary farm

The Law of Tajikistan from 8 December 2003, under No. 47 "On private subsidiary farm," uses the following definition: "private subsidiary farm is a farm the activity of which is operated by the individual labor of a citizen or members of his family for the purpose of producing agricultural products and **meeting their needs for food** and other needs" (emphasis added).

The conceptual difference between dehkan farms and private subsidiary farms, according to legislative provisions, is the intended purpose of each of them (Picture 1). At the same time, it should be noted that the population that has subsidiary farms can also have land allocated for the activities of the dehkan farm. Thus, it was revealed that out of ten households that have private subsidiary farms, one household has a dehkan farm also (USAID, 2015).

In general, the distinctive features of private subsidiary farm from dehkan farm can be considered their economic independence, the rational use of the informal labor of all family members, the ownership right to products and income, free small business, in which the owner, organizer, entrepreneur and worker of the village are united in one person (Yusupov, D.S, 2011).

Picture 1. Conceptual difference between dehkan farms and private subsidiary farms



SOURCE: THE AUTHORS' ELABORATION

The practice shows that smallholders and private subsidiary farms can be family farms, and also that private subsidiary farms can produce products not only for domestic consumption but also for sale. For example, more than 90 percent of households in Dusti district of Khatlon region produce different types of pomegranates on their private subsidiary farms, most of which are sold in the

central markets of Tajikistan: Dushanbe, Khujand, Kurgan-Tube and Kulyab (Independent opinion, 2012).

Statistical Agency under President of Tajikistan (TajStat). In addition to Tajikistan regulatory legal acts and project documents of international organizations, the definitions of "smallholders" and "family farms" are used by government agencies in their own interpretation. For example, TajStat uses and differentiates two forms of farms: i) dehkan farm, which is a form of free enterprise, an independent economic entity created by a family or an individual citizen, or jointly producing agricultural products on the basis of the use of property, land and other natural resources, which are his/her private property; and (ii) private subsidiary farm of the citizens, including collective orchards and vegetable gardens, as well as allotment gardens.

As for the separate definition for smallholders and family farms, their definition is used by TajStat in the framework of implementing any state programme for conducting a census or research. Thus, in the methodology of the "Pilot survey of the dehkan farms," carried out in 2009, the definition of "smallholders" is formulated as follows: "smallholders are the farms with no more than 5 ha of land" (TajStat, 2009).

> "We have only general data on [dehkan farms]. There is no separate data on smallholders or family farms, including land size. The lack of correct and objective accounting becomes an obstacle to making appropriate objective decisions, for example, on water use."
>
> *Interview with a representative of TajStat*

It should also be noted that some researchers and international organizations unite the definitions of smallholders and family farms, which in turn is theoretically correct. For example, a smallholder can be a family farm with no more than 5 ha of land or, vice versa, a family farm can be defined as a smallholder.

International organizations. A number of stakeholders – in particular, international organizations that are operating in Tajikistan – have their own criteria for determining smallholders, which has a practical purpose within the framework of the implementation of any project activity. Thus, one of the key criteria for determining smallholders is the area of land (in ha) used for agricultural purposes, and the other criteria is the number of shareholders indicated in the certificate of land. For example, according to the project documents of the Feed the Future Initiative, implemented in Tajikistan under the leadership of the United States Agency for International Development (USAID), a smallholder has an area of land that does not exceed 5 ha, while in the World Bank project documents, a smallholder has an area of land that does not exceed 2.5 ha.

According to FAO project documents, a family farm is a way of organizing agricultural, forestry, fishery, pasture and aquaculture production, carried out and managed by the family, which relies mainly on the work of family members, both women and men (FAO, 2014b). With this approach, the types of activity (forestry, fishery, pasture and aquaculture production) and family labour act as indicators of the family farm. In World Bank project documents, a family farm is a farm with 25 shareholders (World Bank, 2012a). With this approach, the indicator of the family farm is the presence of shareholders.

On the basis of this information, the following conclusions can be drawn: a) for the definition of smallholders, almost all stakeholders use "land size" as an indicator; b) for the definition of family farms, the following indicators are more often used: "the ownership of the farm by one family" and "the

use of family members as labour resources"; c) statistics do not contain data on certain types of dehkan farms, but only generalized data; and d) smallholders, family dehkan farms and private subsidiary farms can be grouped and considered as a way to address food security issues.

Further, in the relevant sections of the report, data on dehkan farms is considered in general. In addition, data will be presented on private subsidiary farms, which can also be considered as one of the forms of family farming.

3.2 Structural analysis and a qualitative description of the sector

3.2.1 Development of the role/importance of smallholders and family farms in the economy in the period 2005–2016

Contribution of smallholders and family farms in the economy in the period 2005–2016

Agriculture is one of the most important and system-forming sectors of the economy in Tajikistan.

In 2016, the sector produced about 21 percent of the country's gross domestic product (GDP). Real growth in agricultural production over the past ten years averaged 6 percent (with a minimum growth of 1 percent in 2011 and a maximum growth of 11 percent in 2009).

The share of agriculture in the structure of GDP is still significant. In accordance with NDS-2030, this situation will remain unchanged until 2025 and then, according to the development scenarios developed, the sector's weight in the GDP structure will decrease (Government of Tajikistan, 2016a).

Despite the fact that the sector is predominant in the GDP structure, not more than 4 percent is allocated for its provision out of the state budget expenditure for the period under review, and only 1 percent of the volume of foreign direct investment entering the economy is allocated to the sector (TajStat, 2008a; TajStat, 2010a; TajStat, 2015a; TajStat, 2017a).

Production. In the structure of agricultural production, the leading industry was and still is horticulture, which accounted for 68 percent of the volume of agricultural production as of 2016. At the same time, the growth rate of this industry has a negative trend (from 75 percent in 2005 to 68 percent in 2016) in the structure over the past ten years. This situation is mainly related to the development of livestock production, the share of which in the structure of agricultural production grew by 7 percent (from 25 percent in 2005 to 32 percent in 2016) (Table 2).

Table 2. Main macroeconomic indicators of the agricultural sector in Tajikistan, 2005–2016

Indicator	Year											
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
National nominal GDP, millions SM[7]	7 206.6	9 335.3	12 804.4	17 706.9	20 628.5	24 707.1	30 071.1	36 163.1	40 524.5	45 605.2	48 408.7	54 471.1
Real GDP, %	6.7	6.9	7.7	7.9	3.9	6.5	2.4	7.5	7.4	6.7	6.0	6.9
State budget expenditures on agriculture, millions SM	40.5	45.2	78.6	97.4	97.5	105.3	316.3	372.9	338.6	365.2	363.5	440.0
Share of the sector in total state budget expenditures, %	2.9	2.6	2.1	2.0	1.6	1.4	3.4	3.4	2.5	2.4	2.1	1.7
Share of agricultural production in GDP structure, %	21.2	21.5	19.4	19.9	18.6	19.6	23.8	23.3	21.2	23.5	21.9	20.7
Total volume of agricultural production, millions SM	1 527.2	2 002.5	2 488.5	3 517.9	3 827.0	4 839.3	7 167.6	8 435.7	8 581.7	10 696.8	10 617.4	11 258.5
Real growth in agricultural production, %	2.8	5.8	6.5	7.7	10.5	6.8	0.4	9.5	7.7	9.2	3.4	5.9
Total volume of plant production sector, millions SM	1 140.8	1 509.9	1 742.0	2 641.9	2 736.3	3 450.4	5 124.8	6 040.0	6 144.5	7 391.5	7 209.2	7 629.2
Total volume of livestock sector production, millions SM	386.4	492.6	746.5	876.0	1090.7	1388.9	2042.8	2395.7	2437.2	3305.3	3408.2	3629.3
Share of plant production sector in the structure of agriculture, %	74.7	75.4	70.0	75.1	71.5	71.3	71.5	71.6	71.6	69.1	67.9	67.8
Share of livestock sector in the structure of agriculture, %	25.3	24.6	30.0	24.9	28.5	28.7	28.5	28.4	28.4	30.9	32.1	32.2

SOURCE: TAJSTAT, 2008B; TAJSTAT, 2010B; TAJSTAT, 2015B; TAJSTAT, 2017C.

Employment. In 2016, the total number of the able-bodied population of Tajikistan (aged 15–62 year for men and 15–57 for women) was 5.224 million, of which 2.385 million people were employed. Among the employed, about 65 percent were engaged in the agricultural sector (TajStat, 2017c), which shows that this sector is the main source of income for the vast majority of the country's rural population. At the same time, the share of employed people in the agricultural sector decreased by 3 percent from 2005.

Along with the number of employed people in the agricultural sector, the number of hired employees engaged in the sector is also declining. During the period under review, from 2005 to 2016, their number decreased by 77 100 to 473 800 people. It should be taken into account that the majority of jobs in agriculture are unofficial. The main reason for shadow hiring is the high rate (20 percent) of the social tax, which is calculated as a monthly fee for each employee (World Bank, 2012b).

The average wage of employees officially employed in the sector was about SM 303 (USD 39) in 2016. Compared to 2005, the wage of employees increased by about six times (from SM 43) in the national currency and by two times (from USD 12) in foreign currency. It should also be noted that wages earned in agriculture have always been lower than in the other sectors and on average in the country (Table 3). At the same time, the gender pay gap has been constantly increasing. While in 2008, women's wages in agriculture equaled 65 percent of men's wages (TajStat, 2014b; FAO, 2016a), women's wages represented 47 percent of men's wages in 2016 (TajStat, 2017e).

[7] Amounts in SM are current as of the respective year.

Along with this, of substantial concern is the large number of women who undertake agricultural work without receiving any wages at all. According to the 2012 Demographic and Health Survey, more than half (59 percent) of women who had worked in agriculture in the previous 12 months were not paid, while nearly a quarter (24 percent) were paid in cash and in-kind, 13 percent were paid exclusively in-kind, and less than 5 percent were paid in cash only (compared with 59 percent of women who were engaged in non-agricultural work) (TajStat, Ministry of Health & Measure DHS / ICF International, 2013; FAO, 2016a).

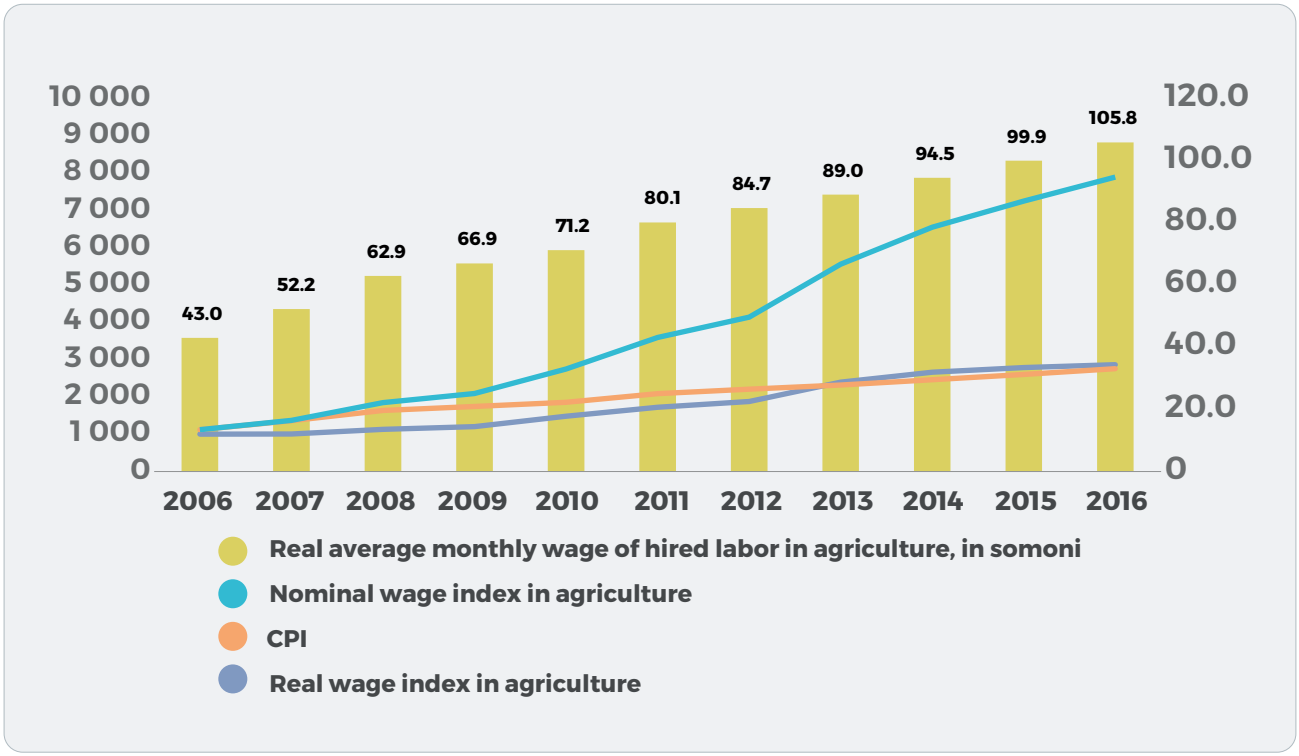
Table 3. Total employment, number of workers in agricultural sector, and average accrued monthly wage of employees engaged in agriculture, 2005–2016

Years	Total employment, thousands	Share of labour force employed in agriculture, %	Number of hired employees employed in agriculture, thousands	Average accrued monthly wage of hired employees engaged in agriculture, SM
2005	2 112	67.5	550.9	38.4
2006	2 137	67.1	557.0	43.0
2007	2 150	66.5	521.3	52.5
2008	2 168	66.7	525.3	70.9
2009	2 219	66.2	519.4	80.3
2010	2 233	65.9	509.9	105.5
2011	2 249	67.0	497.8	137.9
2012	2 292	66.4	499.5	158.8
2013	2 307	66.1	490.4	213.3
2014	2 325	65.5	498.8	251.3
2015	2 380	64.9	493.1	278.2
2016	2 385	64.5	473.8	303.0

SOURCE: TAJSTAT, 2017E.

At the same time, taking into account the real wage index in agriculture, real wages in national currency amounted to roughly SM 106 (13 USD) (Figure 1).

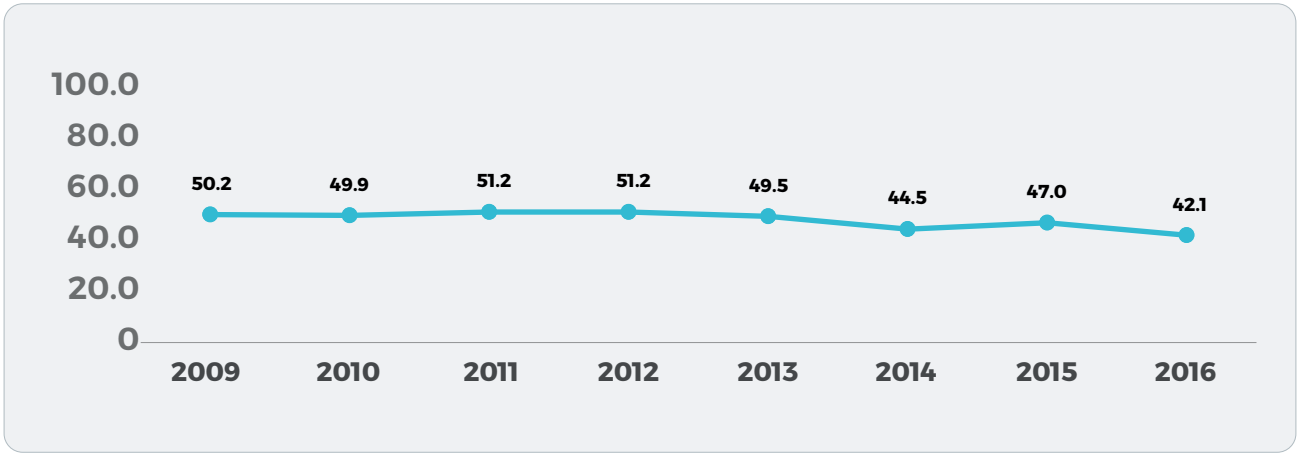
Figure 1. Real average monthly wage of hired labour in agriculture and trends of consumer price index, nominal and real wage index, 2006–2016



SOURCE: TAJSTAT, 2017E.

The results of the Labor Force Survey conducted by TajStat in 2016 show that women's employment rate in agriculture is higher than that of men. Thus, according to the data of this study, out of all those employed in agriculture, the share of women was 54 percent (TajStat, 2017e). At the same time, the share of women engaged in agricultural work has decreased by 8 percentage points since 2009 (Figure 2).

Figure 2. Share of women employed in agriculture, %, 2009–2016



SOURCE: TAJSTAT, 2017E

The absolute majority of the labour resources employed in agriculture work in the dehkan farms, which were created as a result of the implementation of land reform (**Government of Tajikistan. 1992**) and

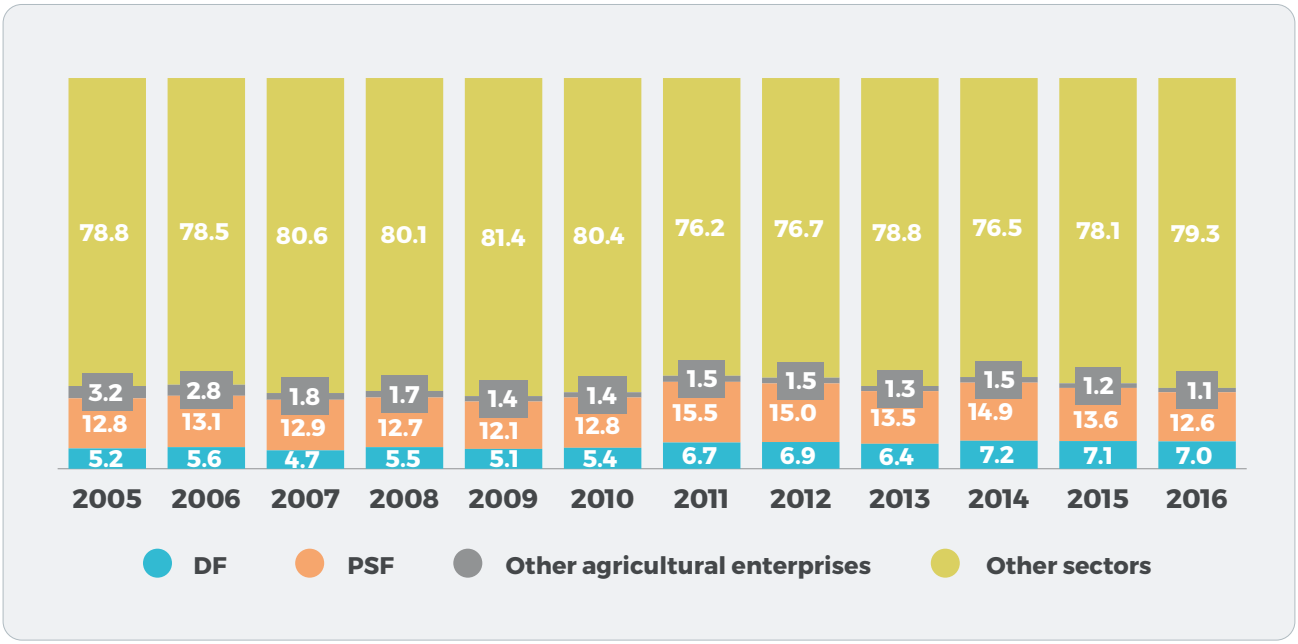
the reorganization of 206 collective farms and 362 state farms in 1991.[8]

Key agriculture developments by subsector and the importance of smallholders and family farms

The direct producers of agricultural products in Tajikistan are the commercial sector, dehkan farms and private subsidiary farms. Dehkan farms and private subsidiary farms make a significant contribution to the development of this sector. In 2016, their total share in the sector was 95 percent, of which the share of dehkan farms was 34 percent and the share of private subsidiary farms 61 percent.[9] The remaining 5 percent of agricultural products were produced by commercial organizations, which include associations, collective dehkan farms, inter-farms, state farms, leasing enterprises, agricultural cooperatives, agrofirms, subsidiary farms of industrial, transport and other enterprises, and organizations.[10]

As the statistical data show, the share of dehkan farms and private subsidiary farms in the country's GDP is 7 percent and 13 percent, respectively. The share of dehkan farms in the country's GDP structure increased from 5 percent in 2005 to 7 percent in 2016, but still the share of private subsidiary farms remains significant in the structure of agricultural production, at a level of 12 to 15 percent. This indicates that private subsidiary farms produce the bulk of the country's agricultural output (Figure 3).

Figure 3. Volume of GDP produced by dehkan farms, private subsidiary farms and other subjects of economic activity, 2005–2016



SOURCE: TAJSTAT, 2008B; TAJSTAT, 2010B; TAJSTAT, 2015B; TAJSTAT, 2017C.

During the period under review, with the increase of the total volume of agricultural output, the share of dehkan farms in its production has also increased by 9 percentage points (from 25 percent in 2005 to 34 percent in 2016). But at the same time, the share of private subsidiary farms has remained the

8 Before the proclamation of independence in Tajikistan, there were about 800 large state-owned collective farms.

9 Two times a year, all dehkan farms fill in the statistical form with information on the total area of sowing and harvested crops.

10 At the moment, there are 5 845 commercial agricultural organizations in the country.

same. Accordingly, the growth in the share of dehkan farms is associated with a decrease in the share of other agricultural enterprises.

Dehkan farms are more oriented towards the production of products in the plant production sector. During the period under review, the share of dehkan farms increased by 17 percentage points (from 32 percent in 2005 to 49 percent in 2016), and the share of private subsidiary farms, in turn, fell by 5 percentage points (from 50 percent in 2005 to 45 percent in 2016).

Private subsidiary farms most often produce products of the livestock sector. Of the total volume of livestock products, the share of private subsidiary farms accounts for 94 percent, and this share is constantly increasing (Table 4).

Table 4. Total volume of agricultural production, by subsector and main agriculture producers, 2005–2016

Years	Agricultural Production		Livestock Sector		Horticulture Sector	
	Share of dehkan farms of total volume, %	Share of private subsidiary farms of total volume, %	Share of dehkan farms of total volume, %	Share of private subsidiary farms of total volume, %	Share of dehkan farms of total volume,%	Share of private subsidiary farms in the total volume,%
2005	24.5	60.6	2.6	91.5	31.9	50.2
2006	25.9	61.2	3.1	91.9	33.4	51.1
2007	24.2	66.6	2.6	92.8	33.5	55.3
2008	27.8	63.9	2.9	92.5	36.1	54.4
2009	27.4	65.4	3.4	92.9	37.0	54.5
2010	27.5	65.6	3.2	92.7	37.4	54.7
2011	28.2	65.2	3.3	92.8	38.1	54.2
2012	29.4	64.2	3.2	92.9	39.8	52.8
2013	30.2	63.6	3.2	92.7	40.9	52.0
2014	30.6	63.4	3.0	93.4	42.9	50.0
2015	32.4	61.9	3.0	93.7	46.3	46.9
2016	34.1	60.7	3.1	94.3	48.9	44.7

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A.

The main types of agricultural crops, which are more often produced by dehkan farms, were and still are cereals and legumes, cotton, potatoes and cucurbit crops.

The share of dehkan farms in the structure of the production of cereals and leguminous crops is more than 60 percent. In cotton, it's more than 80 percent, in potatoes more than 40 percent and in cucurbit crops more than 70 percent. In general, the share of dehkan farms accounts for more than 40 percent of the total output of the horticulture sector (see in Annex 6.2).

Private subsidiary farms account for more than 70 percent of the total output of the livestock sector. The main products of the livestock sector, which are most often produced by private subsidiary farms, were and still are meat and milk. During the period under review, private subsidiary farms produced annually from 90 000 to 200 000 tonnes of cattle and poultry meat (live-weight basis) and from 480 000 to 850 000 tonnes of milk. In the production of meat and milk, the share of private subsidiary farms is more than 90 percent. In wool it is more than 80 percent and in honey more than 60 percent (see in Annex 6.2).

Summarizing these results, it can be noted that the main producers of products of plant and livestock sectors are dehkan farms and private subsidiary farms. The only agricultural product in which dehkan farms and private subsidiary farms are not dominant is the production of eggs.

In the regional distribution of dehkan farms, the main share of products of the plant and livestock sectors is produced in Khatlon region (see in Annex 6.2).

In general, the structure of production of various types of agricultural crops has changed over the past decade. The share of cotton in the physical output has decreased since 2005, but the share of cereals and leguminous crops, potatoes, vegetables and fodder corn has grown. And the structure of livestock numbers hardly changed at all during the past ten years (see in Annex 6.2).

In the production of vegetables, fruits and grapes, the dominant position is occupied by private subsidiary farms (see in Annex 6.2). The country produced 215 700 tonnes more fruits and berries and 124 100 tonnes more grapes in 2016 than in 2005.

For production of fruits, berries and grapes, in Tajikistan there were raised orchards and vineyards on the area of 64 300 ha (118 100 ha in 2005 and 182 400 ha in 2016), of which 33 500 ha (92 400 ha in 2005 and 125 900 ha in 2016), or 52 percent, were gardens and vineyards with fruit-bearing plantations.

During this period, the area of raised orchards and vineyards for dehkan farms amounted to 69 500 ha (from 39 100 ha in 2005 to 108 600 ha in 2016), of which 36 200 ha (from 30 100 ha in 2005 to 66 300 ha in 2016), or 52 percent, were orchards and vineyards with fruit-bearing plantations.

The area of raised orchards and vineyards for private subsidiary farms during this period amounted to 13 600 ha (from 31 200 ha in 2005 to 44 800 ha in 2016), of which 12 000 ha (from 31 100 ha in 2005 to 43 100 ha in 2016), or 88 percent, were orchards and vineyards with fruit-bearing plantations (TajStat, 2008a; TajStat, 2010a; TajStat, 2015a; TajStat, 2017a).

International trade trends

At the moment, import dependence continues to persist in Tajikistan, despite the growth of domestic agricultural production, which is confirmed by the negative trade balance. This indicates that agricultural products produced by dehkan farms and private subsidiary farms are almost completely consumed within the country (Table 5).

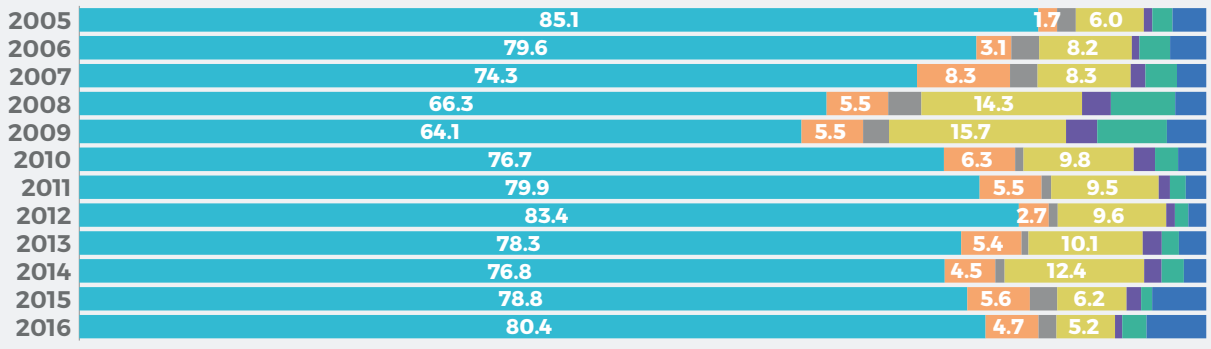
Table 5. Foreign trade turnover of agricultural products of Tajikistan, 2005–2016

Years	Export of agriculture products, millions USD	Share of total export, %	Import of agriculture products, millions USD	Share of total import, %	Trade balance, millions USD
2005	174.7	19.2	126.6	9.5	48.2
2006	161.7	11.6	152.8	8.9	8.9
2007	185.6	12.6	244.6	9.6	-59.0
2008	162.6	11.5	325.4	9.9	-162.9
2009	155.8	15.4	331.4	12.9	-175.6
2010	260.8	21.8	358.5	13.5	-97.7
2011	247.0	19.6	476.6	14.9	-229.6
2012	268.7	19.8	578.9	15.3	-310.2
2013	241.9	20.8	562.8	13.6	-320.9
2014	172.5	17.7	595.2	13.9	-422.7
2015	183.4	20.6	562.9	16.4	-379.5
2016	152.5	17.0	476.3	15.7	-323.9

SOURCE: TAJSTAT, 2008B; TAJSTAT, 2010B; TAJSTAT, 2015B; TAJSTAT, 2017C.

The main exported agricultural product is cotton fiber. In addition to cotton fiber, vegetables (most often onions) and fruit (most often grapes and dried fruits) occupy a significant share in the structure of agricultural exports. But it should be noted that in 2016, compared with other (2007–2014) years, a decrease in the share of vegetables and fruits in the structure of agricultural exports is observed. Perhaps this is due to the growth of the population of the country and the daily need of the local market (Figure 4).

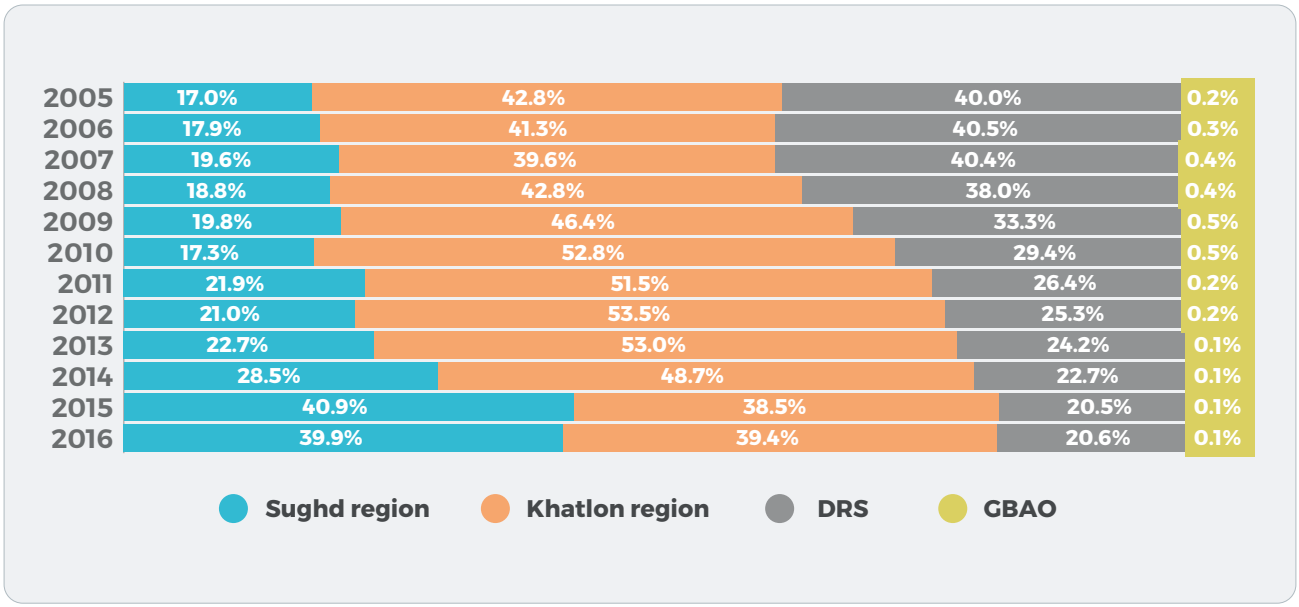
Figure 4. Structure of export value of agricultural products, 2005–2016



SOURCE: TAJSTAT, 2008B; TAJSTAT, 2010B; TAJSTAT, 2015B; TAJSTAT, 2017C.

The main imported agricultural products are cereals and flour-mill products (wheat and wheat flour), with a total share of over 50 percent. It should be noted that in the import structure of agricultural products, with the decrease in the imports of flour, imports of wheat are increasing, indicating an increase in domestic flour production (Figure 5).

Figure 5. Structure of import value of agricultural products, 2005–2016



SOURCE: TAJSTAT, 2008B; TAJSTAT, 2010B; TAJSTAT, 2015B; TAJSTAT, 2017C.

The main trade partners of Tajikistan for exports are Turkey (with a 29-percent share of exports), Switzerland (23 percent). and Kazakhstan (16 percent). For imports, Tajikistan's main trade partners are the Russian Federation (with a 31-percent share of imports), China (22 percent) and Kazakhstan (16 percent) (TajStat, 2017c). A comparison of the shares of imports and exports of agricultural products in Tajikistan indicates that there are significant reserves for improving the efficiency of agricultural production in the country.

If not taking into account the production and export of cotton, the production and export of vegetables and fruits (especially dried ones) are one of the key competitive agricultural products of Tajikistan. Thus, in the past ten years, the Government of Tajikistan has begun to pay special attention to the development of this sphere through the adoption and implementation of the following state programs and decrees of the president of Tajikistan:

- Export Development Program of Tajikistan for the period up to 2015 (Government of Tajikistan, 2006).
- State program for the development of the horticulture and viticulture industry, the gradual increase in the production of fruits and grapes, and the cultivation of seedlings of fruit and evergreen plantations in Tajikistan for 2007–2010 (Government of Tajikistan, 2007).
- State programme on Strengthening of Export Potential of Fruit and Vegetable Sector in 2010–2012 (Government of Tajikistan, 2010a).
- Decree of the president of Tajikistan from 29 August 2009 under No. 683 "On additional measures for the development of horticulture and viticulture in Tajikistan for the period of 2010–2014" (Government of Tajikistan, 2009).

- Development programme of horticulture and viticulture in Tajikistan for 2016–2020 (Government of Tajikistan, 2015a).
- State programme for Export and Import Substitution in Tajikistan for 2016–2020 (Government of Tajikistan, 2016c).

However, according to the Country Diagnostic Study Report (ADB, 2016b), for the past five years the competitiveness of the country's exports has deteriorated, and the quantity of goods with a competitive advantage has decreased (from 55 products in 2005 to 47 in 2014).

Analysis of farms according to size, typology and geographical distribution

In 2016, 145 107 dehkan farms were created in the country, and already in the beginning of 2017, their number increased to 174 837 (FAO, 2017). In most cases, individual farmers who worked in reorganized collective farms and state farms became owners of dehkan farms. In other words, the land and logistical resources of collective and state farms were distributed among their employees.

A possible explanation for the sharp increase in the number of dehkan farms after 2009 can be the fact that by 2010 almost all the remaining collective and state farms were reorganized into dehkan farms.

The number of private subsidiary farms also increased, from 839 300 in 2005 to 1.07 million in 2016 (27.7 percent), mostly due to increases in population and in the number of households in rural areas (TajStat, 2008b; TajStat, 2010b; TajStat, 2015b; TajStat, 2017c).

To date, more than 37 percent of the land has been allocated to dehkan farms from the total land fund of the country.[11] According to the data compared to 2015, the share of allocated land for dehkan farms increased by 3 percentage points (from 34 percent in 2005 to 37 percent in 2016).

In addition to dehkan farms, there are also lands assigned to private subsidiary farms, including lands for fruit and vegetable gardening and for kitchen gardens. The land area of these farms also increased by 47 400 ha, or by 21 percent compared to 2005 (Table 6).

[11] According to the State Committee for Land Management and Geodesy of the Republic of Tajikistan, the total land fund of the country in 2015 amounted to approximately 14.13 million ha.

Table 6. Total land fund of Tajikistan, share of the lands assigned to the dehkan farms and the land area of the private subsidiary farms, 2005–2016

Years	Total land fund of Tajikistan, thousands ha	Share of lands assigned to dehkan farms, %	Lands assigned to private subsidiary farms, including lands for fruit and vegetable gardening and kitchen gardens, thousands ha
2005	14 255.4	33.9	224.6
2006	14 255.4	33.4	231.9
2007	14 255.4	35.9	232.0
2008	14 255.4	36.6	242.6
2009	14 255.4	36.9	243.9
2010	14 255.4	37.2	258.5
2011	14 255.4	36.5	265.2
2012	14 255.4	36.2	269.1
2013	14 225.5	36.2	270.1
2014	14 137.7	36.3	270.7
2015	14 137.7	36.3	271.3
2016	14 137.7	36.6	272.2

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A.

The area of agricultural land in 2016 was 3.61 million ha, or 26 percent of the total land fund of Tajikistan. Of this 2.59 million ha are the land assigned to dehkan farms, which increased by 210 900 ha from 2005. About 22 percent of the agricultural land – 571 500 ha – assigned to dehkan farms is irrigated. In comparison with 2005–2010, the amount of irrigated agricultural lands has increased; compared to 2011–2015, it has decreased.

In addition to the agricultural lands assigned to the dehkan farms, there are also the lands assigned to private subsidiary farms, including kitchen gardens. During the period under review, their area increased by 47 500 ha. In parallel with the increase in the total area of agricultural land assigned to private subsidiary farms, the irrigated agricultural lands also increased (Table 7).

Table 7. Area of agricultural land assigned to dehkan farms and private subsidiary farms, including irrigated ones, 2005–2016

Year	Area of agricultural land, thousands ha		Number of dehkan farms, units	Agricultural land assigned to dehkan farm, thousands ha		Number of private subsidiary farms, units	Agricultural land assigned to private subsidiary farm, thousands ha	
	Total	Irrigated		Total	Irrigated		Total	Irrigated
2005	2 604.1	694.0	23 101	2 380.6	567.8	839 310	223.5	126.2
2006	2 643.0	673.7	24 901	2 412.3	544.3	855 596	230.7	129.4
2007	2 784.7	669.5	26 518	2 553.8	540.4	871 736	230.9	129.1
2008	2 840.9	677.1	30 842	2 610.4	548.7	890 640	230.5	128.4
2009	2 898.6	688.1	37 966	2 655.8	553.3	911 104	242.8	134.8
2010	2 940.1	692.4	51 372	2 682.7	556.4	934 867	257.4	136.0
2011	2 888.9	709.5	58 313	2 624.7	572.3	956 382	264.2	137.2
2012	2 857.6	713.3	73 806	2 589.4	575.1	979 788	268.2	138.2
2013	2 849.9	716.4	87 594	2 580.7	577.9	998 375	269.2	138.5
2014	2 828.1	722.3	108 035	2 558.3	582.8	1 023 120	269.8	139.5
2015	2 827.4	724.4	123 379	2 557.1	584.7	1 048 947	270.3	139.7
2016	2 862.5	711.6	145 107	2 591.5	571.5	1 071 883	271.0	140.1

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A.

"Smallholders prevail in the land use structure. The average size of the land is small; it is no more than 2 ha. However, the number of these farms is very large. Considering this factor, we can say that in terms of volume of the production and horticulture, they occupy an exceptionally significant role."

Interview with the representative of TajStat

To date, due to the lack of centralized accounting, there are no publicly available data on the size of dehkan farms, but according to various sources, the average size of the land area of smallholders and family farms is no more than 2 ha.[12]

Thus, according to the State Committee for Land Management and Geodesy and the National Association of Dehkan Farms (NADF), about 70 percent of dehkan farms established in the country through today have no more than 2 ha of land.[13]

[12] Based on the results of an interview with a representative of TajStat.

[13] Based on the results of an interview with a representative of the National Association of Dehkan Farms.

On average, in 2016, 17.9 ha of agricultural land and 3.7 ha of arable land were allocated to each dehkan farm. During the period under review, the average area of land assigned to the dehkan farm decreased almost sixfold. This shows that the number of dehkan farms is growing year by year, and more lands are being distributed among different groups of people, such as members of households, former workers of collective farms and state farms, and others. In most cases, the distribution of land was in the form of individual land shares. These results correlate with Article 26 of the Land Code of Tajikistan (Government of Tajikistan. 1996; Government of Tajikistan, 2016b) (Table 8).

As a result of land reforms in Tajikistan:

- 36 percent of dehkan farms have from 0.03 ha to 0.5 ha of land.
- 31 percent of dehkan farms have from 0.5 to 2.0 ha of land.
- 21 percent of dehkan farms have from 2.0 to 5.0 ha of land.
- 12 percent of dehkan farms have more than 5.0 ha of land.

Interview with the representative of NADF

Table 8. Average area of agricultural lands and arable lands assigned to dehkan farms, 2005–2016

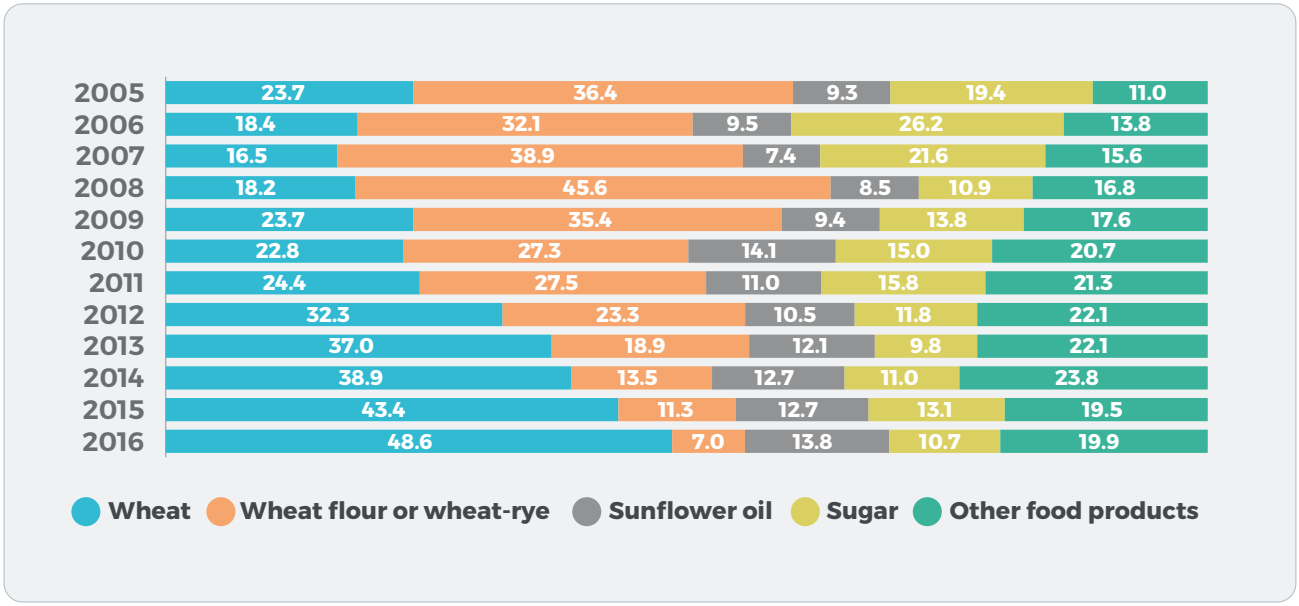
Years	Average land area of agricultural land assigned to dehkan farms, ha	Average area of arable land assigned to dehkan farms, ha
2005	103.1	22.0
2006	96.9	21.3
2007	96.3	20.3
2008	84.6	17.8
2009	69.9	14.7
2010	52.2	10.8
2011	45.0	9.3
2012	35.1	7.4
2013	29.4	6.1
2014	23.7	5.0
2015	20.7	4.4
2016	17.9	3.7

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A.

At the moment, a significant percentage (about 80 percent) of dehkan farms operate in two regions of Tajikistan:[14] Sughd (40 percent) and Khatlon (39 percent). But as the statistics show, despite the fact that most of the agricultural lands and arable lands, including irrigated ones, are concentrated in Khatlon and Sughd regions, until 2013 a significant portion of the dehkan farms were in the Districts of Republican Subordination and the Khatlon region. In all likelihood, the process of restructuring large farms was slower in the Sughd region (Figure 6).

[14] The Republic of Tajikistan consists of five regions: the city of Dushanbe (the capital of the country), the Districts of Republican Subordination, the Sughd region, the Khatlon region and the Gorno-Badakhshan Autonomous Region.

Figure 6. Distribution of dehkan farms by regions of Tajikistan, 2005–2016



SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A.

As per the analysis of the register of economic entities for 2016, the absolute majority of dehkan farms are engaged in plant production.[15] It should be considered that the statistical classification code is assigned to the main activity. The practice shows that dehkan farms can be in parallel engaged in activities such as livestock, horticulture and/or fishery (Figure 7).

Figure 7. Distribution of dehkan farms by main activity, 2005–2016

SOURCE: TAJSTAT, 2017F.

Gender division of labour. Labour migration from Tajikistan is characterized by the prevalence of men, who form at least 85 percent of those who have left the country in search of jobs. In the absence

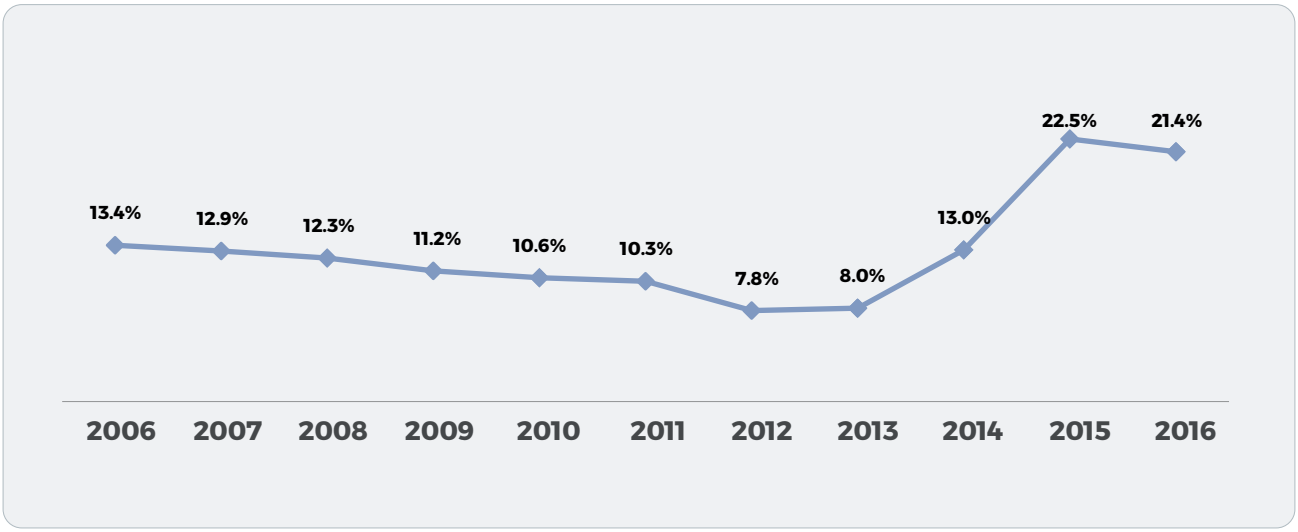
[15] The register was provided by the Agency for Statistics under the President of the Republic of Tajikistan.

of adult male family members, women have to accept a double burden by continuing to perform household responsibilities and, in addition, managing and working on the family plots. This means that in the context of Tajikistan, women – who formally own 13 percent of dehkan farms – virtually form the biggest target group among smallholders, and this needs to be taken into account by decision-makers and other stakeholders involved in formulating and implementing agricultural policies and programmes.

The number of dehkan farms headed by women is steadily growing. Over the past decade, the share of farms registered in the name of a woman has almost doubled, from 13 percent in 2005 to 21 percent in 2016 (Figure 8).

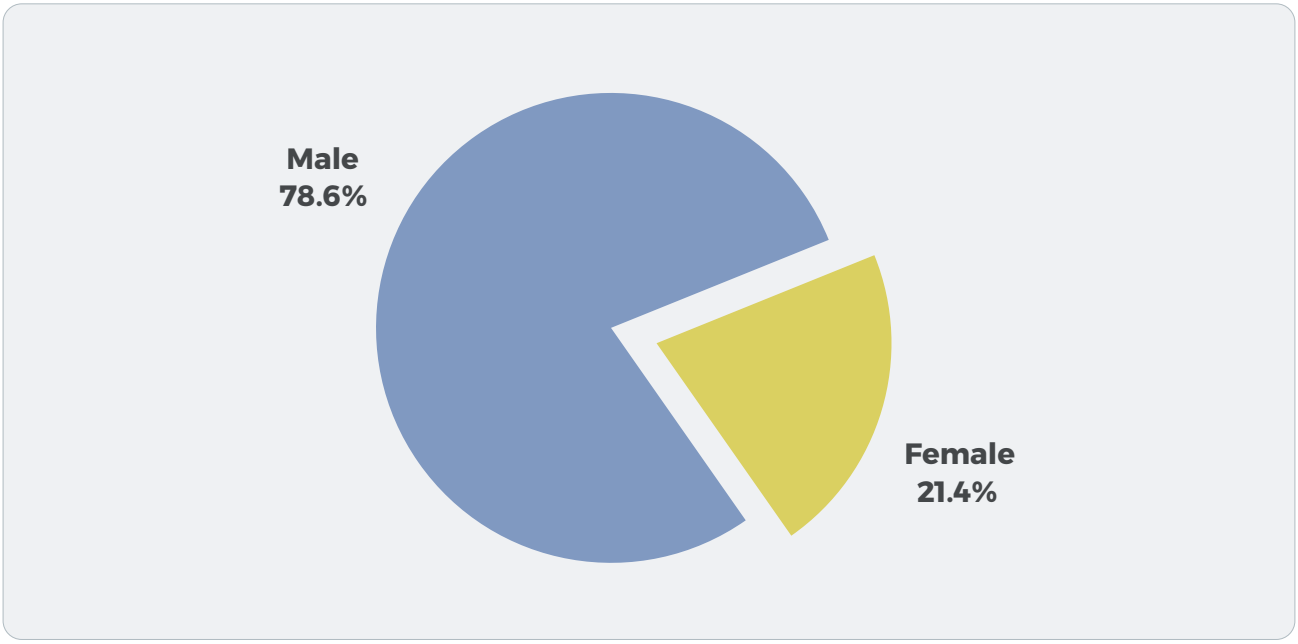
However, a significant share of women are *de facto* managers of family farms, which is not captured in official statistics because it is common practice for a man to remain the legal head of a dehkan farm even when he is abroad and it is the female family members who are managing the farm. The absence of legal recognition of women's *de facto* management role places constraints on their access to and control over resources and limits information about the actual contributions of women to agriculture (FAO, 2016a).

Figure 8. Growth rates in the share of women-headed dehkan farms, 2006–2016



SOURCE: TAJSTAT, 2012A; TAJSTAT, 2017B

Figure 9. Distribution of dehkan farms by sex, 2016, N=145 107

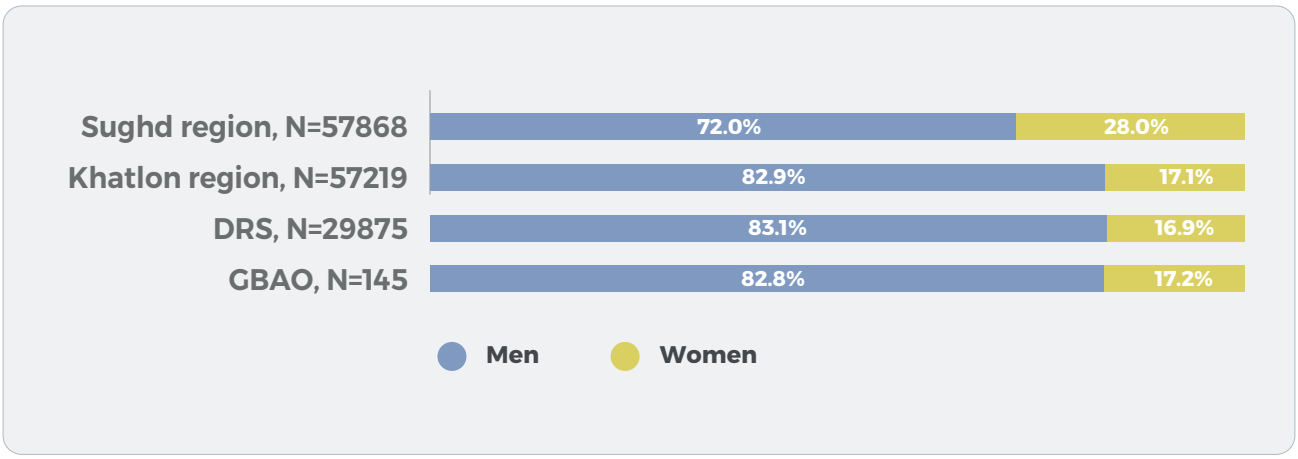


SOURCE: GENDER INDICATORS IN DEHKAN FARMS, STATISTICAL BOOK FOR 2012 AND 2017, TAJSTAT

Currently, the share of male-headed dehkan farms significantly exceeds the share of female-headed dehkan farms in official statistics (Figure 9).

Twenty-eight percent of dehkan farms in the Sughd region are headed by females, which is the highest percentage in the country, followed by Gorno-Badakhshan Autonomous oblast, Khatlon region and the Districts of Republican Subordination, at 17 percent each (Figure 10).

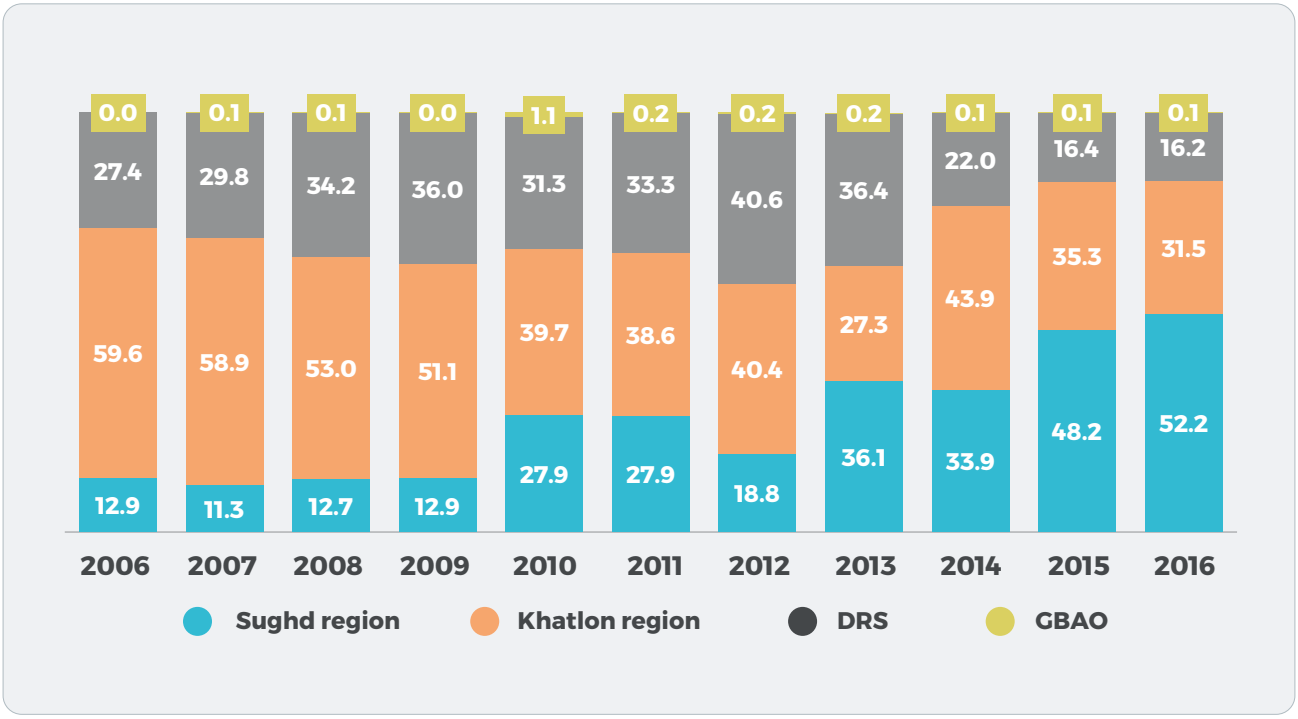
Figure 10. Distribution of dehkan farms by region and gender, 2016



SOURCE: TAJSTAT, 2012A; TAJSTAT, 2017B

In 2005, the main share (60 percent) of female-headed dehkan farms, according to official statistics, carried out their activities in the Khatlon region. In 2016, more than half of them (52 percent) operated in the Sughd region (Figure 11).

Figure 11. Distribution of female-headed dehkan farms, by region, 2006–2016



SOURCE: TAJSTAT, 2012A; TAJSTAT, 2017B

Summarizing the results of this section, we can formulate several conclusions. At the moment, on the basis of collective and state farms – the last of which were reorganized and privatized in 2010 – more than 150 000 dehkan farms have been established in the country. The fact of the final reorganization of the collective and state farms indicates that the land reforms adopted in the 1990s by the Government of Tajikistan have been fully implemented (Government of Tajikistan, 1992)[16]

However, some problems are still not resolved. There is still a lack of freedom for farms in the selection and cultivation of agricultural products. Additionally, a land evaluation market has not been formed; this would allow owners to use land as collateral for access to finance (Asia-Plus. Karaev, S., 2018).

3.2.2 Land tenure market and property rights

In Tajikistan, access to land has specific legal features. Private ownership of land is not available, but citizens have the right to use land on the basis of land use rights granted by the state, the owner of the land. The rural population usually has small plots or gardens close to their houses and may also have access to other types of land: independent farmland (dehkan farms) or presidential lands (lands that have been given to rural households through presidential decrees, in order to increase the size of garden plots that were less than the national minimum set) (FAO, 2016a).

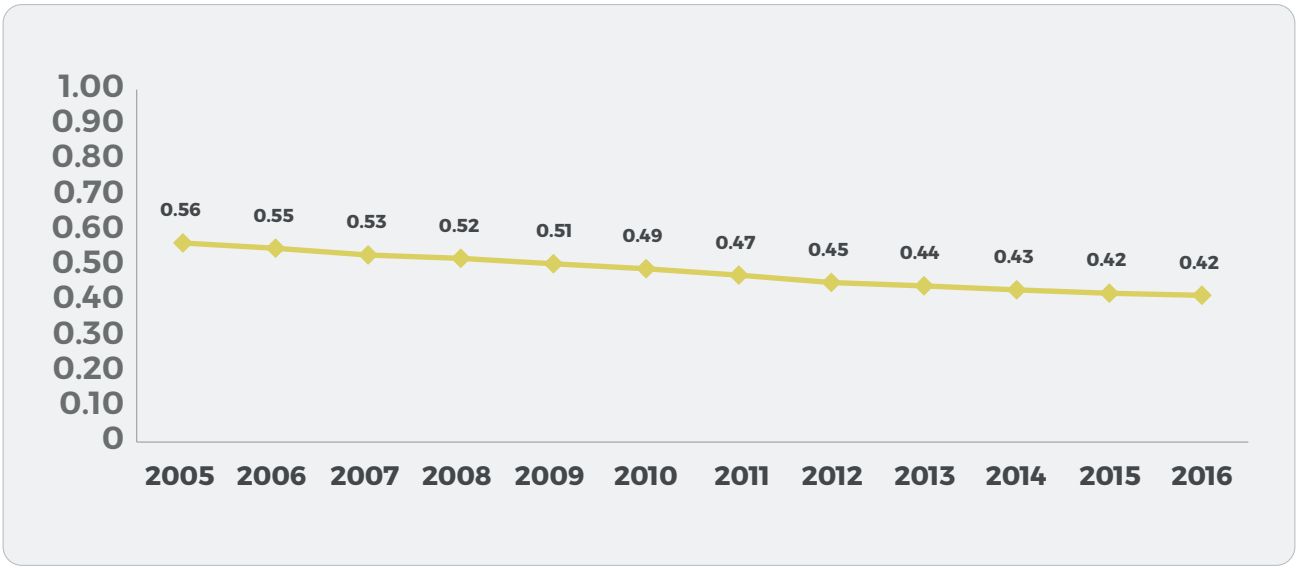
All agricultural activities of dehkan farms and private subsidiary farms are carried out on land plots provided by local executive bodies of state power and the Government of Tajikistan. Land plots are

[16] The reforms are divided into two stages. Within the second stage, the land should be divided between citizens, enterprises and organizations, such as dehkan farms and private subsidiary farms.

provided to the dehkan farms and private subsidiary farms in accordance with Chapter 3, "Provision of Land," of the Land Code of Tajikistan. According to this Code, the local executive bodies of state power of regions and cities, in consultation with the local land administration body, are provided with an unlimited, fixed-term and lifelong inheritable use, as well as lease, of land plots (Government of Tajikistan, 1996; Government of Tajikistan, 2016b).

In 2016, about 0.42 ha of agricultural land was accounted for per capita in Tajikistan. Compared to 2005, this area decreased by 0.14 ha (from 0.56 ha in 2005 to 0.42 ha in 2016). It can be assumed that in connection with the further increase in the population of the country and a decrease in the total land area of agricultural land, this indicator will decrease (Figure 12).

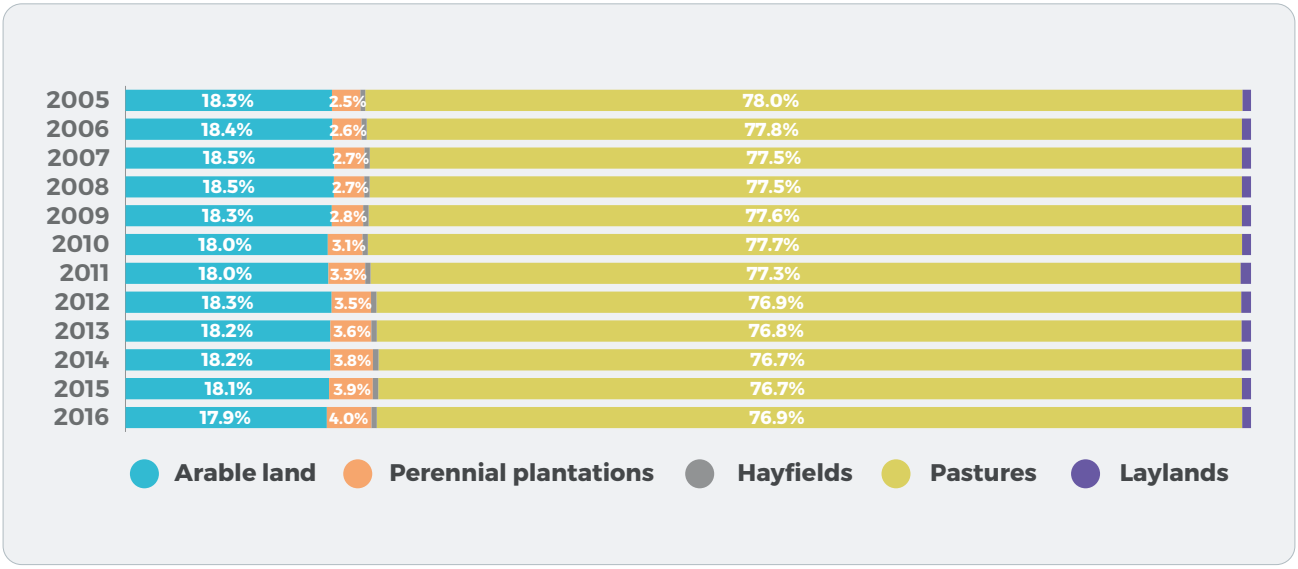
Figure 12. Land size of agricultural land per capita, 2005–2016



SOURCE: TAJSTAT, 2008B; TAJSTAT, 2010B; TAJSTAT, 2015B; TAJSTAT, 2017C.

Pastures (77 percent) occupy the main share of the land area of agricultural lands. At the same time, data show that, compared to 2005, their area decreased by 1 percentage point (from 78 percent in 2005 to 77 percent in 2016). Perhaps this situation is associated with an increase in the area of land for perennial plantations by 1 percentage point (Figure 13). The total area of arable land during the period under review remained practically unchanged and amounted to 18 percent of the total area of agricultural lands.

Figure 13. Distribution of agricultural land area, 2005–2016



SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A.

The area of arable lands assigned to dehkan farms in 2016 amounted to 535 000 ha, an increase from 2005–2006 and a decrease from 2007–2015. In comparison with previous years, there is also an annual decrease in the area of irrigated arable land assigned to dehkan farms. Over the past ten years, the area of irrigated arable land assigned to dehkan farms decreased by 36 200 ha. It should be noted that this share is increasing year by year. This is mainly due to the salinization of land and to the physical wear and tear of irrigation infrastructures, the latter of which were built in the 1980s, and the lack of proper maintenance in the 1990s due to lack of financing.

However, a different situation is observed with arable land assigned to private subsidiary farms, including kitchen gardens. Compared to 2005, their total area increased by 23 400 ha. But at the same time, the area of irrigated arable land assigned to private subsidiary farms increased by 6 600 ha (Table 9).

Table 9. Total area of arable land assigned to dehkan farms and private subsidiary farms, including irrigated, 2005–2016

Year	Number of dehkan farm, units	Arable lands assigned to dehkan farms, thousands ha		Number of private subsidiary farm, units	Arable lands assigned to private subsidiary farms, thousands ha	
		Total	Irrigated		Total	Irrigated
2005	23 101	508.1	471.7	839 310	155.9	98.7
2006	24 901	528.8	449.2	855 596	162.8	102.2
2007	26 518	539.1	452.3	871 736	162.1	101.9
2008	30 842	549.0	441.5	890 640	158.9	106.5
2009	37 966	559.0	450.1	911 104	166.9	105.3
2010	51 372	553.7	444.1	934 867	177.4	105.5
2011	58 313	543.0	449.8	956 382	178.1	106.2
2012	73 806	543.0	448.5	979 788	183.5	106.4
2013	87 594	538.3	447.5	998 375	181.2	106.4
2014	108 035	540.1	447.9	1 023 120	181.0	106.3
2015	123 379	538.0	447.5	1 048 947	181.0	106.3
2016	145 107	535.0	435.5	1 071 883	179.3	105.3

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

The area of dehkan farms' land can be different depending on the region, which is caused by relief-geographic conditions. On average, within the country in the period under review, 3.9 ha of irrigated agricultural land and 3.0 ha of irrigated arable land were allocated to each dehkan farm. The data indicate that with the increase in the number of dehkan farms, the area of irrigated land is decreasing (Table 10).

Table 10. Average area of irrigated agricultural land and irrigated arable land assigned to dehkan farms, 2005–2016

Year	Average area of irrigated agricultural land assigned to dehkan farms, ha	Average area of irrigated arable land assigned to dehkan farms, ha
2005	24.6	20.4
2006	21.9	18.0
2007	20.4	17.1
2008	17.8	14.3
2009	14.6	11.9
2010	10.8	8.6
2011	9.8	7.7
2012	7.8	6.1
2013	6.6	5.1
2014	5.4	4.1
2015	4.7	3.6
2016	3.9	3.0

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

On dehkan farms and private subsidiary farms, the area of land per farm also depends on the sex of the head of the household. Although data on dehkan farming are not disaggregated by type of farm, women are more likely to manage family dehkan farms than collective or individual farms (FAO, 2016a). According to 2007 data on agricultural assets, male-headed households were more likely than female-headed households to own land (70 percent compared with 52 percent), and when they owned land, men's plots were about 70 percent larger than women's plots (TajStat and UNICEF, 2009). Women's land plots are generally further away from their homes, and joint ownership titles are not common, either (FAO, 2016a). As part of the Sustainable Development Goal commitments, particularly SDG target 5.a on women's equal access to resources, significant work has been done by the Government, civil society and international development organizations to ensure that the Land Code integrates gender concerns and that women's *de facto* access to land is formalized. However, due to systemic barriers and widespread social practices that consider men as "heads of family," most of the certificates continue to be issued in the name of a man (FAO, 2016a). When asked why women are not registered as owners in the land certificates, two-thirds of respondents did not know the reason (Bakozoda, K., Nabiev, R. & Haydarov, J, 2011; ADB, 2016a). A minority also stated as a disincentive the fact that social taxes for dehkan farms are calculated as a fixed monthly fee for each shareholder on the certificate.

Analysis of land resources shows that the main share of agricultural lands, including arable lands and other lands, are assigned to dehkan farms. But at the same time, as practice shows, not all of the area assigned to dehkan farms or private subsidiary farms is used for the intended purpose. The reason is that the land can be crossed by a main road or canal or that the land may be unsuitable for sowing and producing agricultural products (for example, because of a lack of irrigation or because of the salinity of the land).

For these and other reasons, during the period under review, the cultivated area of agricultural crops decreased, from 901 100 ha in 2005 to 837 300 ha in 2016. The situation is the same with private subsidiary farms. So, in comparison with 2005, the sown area of agricultural crops in private subsidiary farms has decreased by 15 000 ha, from 190 100 ha in 2005 to 175 100 ha in 2016.

At the same time, the cultivated area of agricultural crops in dehkan farms has increased. In 2005, there were 407 800 ha, and in 2016 the acreage amounted to 545 100 ha. Perhaps this is the result of diversification of activities through the repeated sowing organization (Table 11).

Table 11. Total cultivated area of agricultural crops, 2005–2016

Year	Total cultivated area of agricultural crops, thousands ha	Cultivated area of agricultural crops in dehkan farms, thousands ha	Cultivated area of agricultural crops in private subsidiary farms, thousands ha
2005	901.1	407.8	190.1
2006	900.2	449.5	185.1
2007	891.1	481.7	192.3
2008	888.9	492.4	203.8
2009	875.1	509.9	194.2
2010	839.5	495.0	190.0
2011	850.4	504.3	193.7
2012	860.1	509.4	200.8
2013	864.8	516.2	201.3
2014	828.4	509.0	176.8
2015	830.6	534.1	175.0
2016	837.3	545.1	175.1

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

Despite the decrease in the total cultivated area, the average yield for the main types of crops in the country increased as a whole (see in Annex 6.2). Currently, agricultural production is mainly produced on irrigated lands (88 percent). In comparison with 2005, the share of irrigated lands in the structure of the cultivated area increased by 8 percentage points, from 80 percent in 2005 to 88 percent in 2016 (Table 12).

Table 12. Share of irrigated and rainfed lands in the structure of the cultivated area, 2005–2016

Years	Share of irrigated lands in the structure of the cultivated area, %	Share of rainfed lands in the structure of the cultivated area, %
2005	79.9	20.1
2006	80.4	19.6
2007	81.1	18.9
2008	81.4	18.6
2009	82.4	17.6
2010	86.2	13.8
2011	85.7	14.3
2012	84.9	15.1
2013	84.4	15.6
2014	88.5	11.5
2015	88.3	11.7
2016	87.7	12.3

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

The forestry and fisheries of Tajikistan are not the determining branches in the economy of the country. The State Forest Fund of Tajikistan is 1.34 million ha, of which 753 500 ha are forest lands (including

422 700 ha of forest-covered area) and of which 583 100 ha are non-forested lands (FAO, 2017).[17] According to the register of economic entities for 2016, only nine dehkan farms are engaged in forestry (TajStat, 2017f).

The total area of fishery dehkan farms in 2016 was 1 800 ha. In the country, as per the register of economic entities for 2016, there are 126 dehkan farms engaged in fishery. In general, dehkan farms are engaged in fishing on ponds and lakes. The catch of fish in these dehkan farms in 2016 was 998.1 tonnes. In total, the catch of fish in the country was 1 538.8 tonnes. For a normal physiological need in the provision of fish products, the population of Tajikistan needs more than 15 000 tonnes, and the country has the potential for production of more than 200 000 tonnes of fish per year.

Data analysis shows that over the past ten years, the role of dehkan farms in the agricultural sector has been significantly strengthened.

The following conclusions can be drawn from this section:

- Despite the fact that dehkan farms use the majority of the cultivated area (more than 60 percent of the total) in their activities, the total production of agricultural products almost does not differ from private subsidiary farms.
- Despite the constantly increasing number of dehkan farms and the volume of production of agricultural products, the areas of agricultural lands, arable lands and other lands, including irrigated lands, are being reduced.
- Decreases in the area of agricultural land can be due to the following reasons: soil degradation, the removal of poor-quality seeds from crop rotation, inaccessibility of water resources, drought, floods, mudflows, the presence of diseases and pests, and many others.
- Women are less likely to be registered as owners of land even when they de facto manage the dehkan farms. When women own land, the size of the cultivated land in their dehkan farms tends to be smaller than in men-owned farms.
- Dehkan farms are more focused on the sale of agricultural products they have produced, while private subsidiary farms most commonly use the production they have produced for domestic consumption.

Another important point to pay attention to is that having a small area of land available, private subsidiary farms produce more than 60 percent of agricultural production. This phenomenon is due to the following factors:

1. **Private subsidiary farms most often produce livestock products that do not require large areas of land.** Most often, private subsidiary farms do not produce animal feed on the farm itself, but they buy from dehkan farms or agricultural enterprises or send their cattle to pastures. In 2016, the total land area allocated for the production of forage crops from private subsidiary farms was 21 500 ha, while dehkan farms allocated 64 450 ha for this (TajStat, 2017a).
2. **Private subsidiary farms have more freedom in the selection and growing of crops than do dehkan farms.** It should be noted that among the government policies regarding agriculture, one of the most significant steps taken was the introduction of the principle of "free selection of cultivated crops" among dehkan farms (Government of Tajikistan, 2012), which implies non-interference of local authorities in dehkan farms' activities. However, analysis of the data suggests

[17] Data of the State Committee for Land Management and Geodesy of Tajikistan.

that the productivity of private subsidiary farms is higher, which may be due to the large variety of sowing crops of private subsidiary farms compared to dehkan farms. For example, in 2016, the main land area of dehkan farms was allocated for sowing grain crops and cotton (418 900 ha, or 77 percent of the total sown area of dehkan farms). At the same time, the sowing crops on private subsidiary farm lands are more diversified, with grain crops on 98 400 ha (56 percent of the total private subsidiary farm sown area), potatoes, vegetables and cucurbit crops on 50 200 ha (29 percent), forage crops on 21 500 ha (13 percent), and other crops on 5 000 ha (2 percent) (TajStat, 2017a).

3. **The productivity of vineyards and orchards on private subsidiary farms is twice as high as on dehkan farms.** In 2016, the productivity of vineyards and orchards on private subsidiary farms was 10.8 tonnes and 5.9 tonnes, respectively, per hectare. On dehkan farms, the productivity of vineyards was 5.1 tonnes per hectare, and the productivity of orchards was 3.1 tonnes per hectare (TajStat, 2017a).

3.2.3 Value chain organization, standards and access to markets

Value chains are fragmented and disjointed, both vertically and horizontally, in Tajikistan (World Bank, 2014b).

Agricultural inputs, production and collection. Among the resources that improve agricultural production and efficiency to be considered in this section are seeds, fertilizers, pesticides, agricultural equipment and machinery.

Bad access to quality seeds, fertilizers and pesticides is a constraint to the development of dehkan farms. The reasons are: a) the presence of low-quality goods (seeds, pesticides and fertilizers) on the market; b) the lack of financial capacity of dehkan farms to invest in seeds, pesticides and fertilizers; c) the lack of an accessible dealer network for the sale of fertilizers and other agrochemicals; and d) insufficient knowledge of farmers on the proper use of seeds, pesticides and fertilizers.

During the period from 2005 to 2016, there was a decrease in the application of fertilizers (mineral and organic) to crops. At the same time, there was an increase in the cost of fertilizers in the world market, which is reflected in the cost of sales on the domestic market (Table 13).

The regulation of the safe handling of pesticides and the practice of their disposal are important issues for Tajikistan. The practice of pest control during Soviet times was based on intensive use of chemical pesticides, especially when growing cotton. Currently, many smallholders cannot afford to purchase pesticides.

Table 13. Import and application of fertilizers in Tajikistan, 2005–2016

Year	Fertilizers, millions USD	Fertilizer application for crops, thousands of tonnes		Fertilizer application in kg for agriculture crops per ha, including	
		Mineral fertilizers (in terms of 100 percent of nutrients)	Organic fertilizers	Mineral fertilizers (in terms of 100 percent of nutrients)	Organic fertilizers
2005	12.7	71.4	272.1	143.0	4 200.0
2006	18.9	54.5	246.9	76.2	300.0
2007	19.2	55.3	212.5	129.5	3 700.0
2008	4.9	52.2	161.8	125.6	3 600.0
2009	18.8	48.0	173.8	126.5	4 100.0
2010	6.9	45.2	180.4	115.5	3 500.0
2011	8.5	49.3	264.2	118.3	4 700.0
2012	18.4	51.7	212.3	121.6	2 600.0
2013	27.6	51.3	199.1	117.9	2 500.0
2014	27.4	56.7	188.6	136.6	2 700.0
2015	27.2	58.3	192.9	136.8	3 900.0
2016	33.7	50.9	205.1	117.4	4 200.0

SOURCE: TAJSTAT, 2008B; TAJSTAT, 2010B; TAJSTAT, 2015B; TAJSTAT, 2017C.

Processing and storage. In this section, processing and storage will be considered.

Access to storage opportunities for grown agricultural products. In most cases, agricultural products are perishable.[18] As a consequence, due to the lack of their own capacities for the storage of agricultural products, dehkan farms have to sell their agriculture products such as milk, fruits or vegetables on any terms to intermediaries. As a rule, the conditions offered by intermediaries are unprofitable for farmers. The number of dehkan farms having their own cold storage rooms is insignificant. According to the Ministry of Agriculture, there are 11 units of refrigerating rooms with a capacity of 16 300 tonnes, 32 rooms with a capacity of 27 908 tonnes, and 94 units of permanently used rooms with a capacity of 28 880 tonnes.

Experience of dehkan farm in ISFARA

Eighty-five percent of the population of Isfara district are involved in growing, processing and selling apricots. Today, apricot gardens occupy 10 600 ha.

In the city, there are 11 enterprises for processing apricots. In only nine months of this year (2018), Isfara has exported more than 12 000 tonnes of dried fruits, mainly apricots, to the Europe, Kazakhstan, Russian Federation and USA (Asia-Plus. Shodiev, H, 2018).

In most cases, these dehkan farms have cooperated to conduct their agricultural activities. There are cases in which large dehkan farms provide their cold storage facilities to smallholders based on a lease agreement. It should be noted that different agricultural products have their own specific storage technologies, which, in most cases, farmers do not know.

[18] Due to the lack of refrigerators and refrigerating rooms for storage, about 15 to 20 percent of production is lost.

"Bogi Somon" dehkan farm

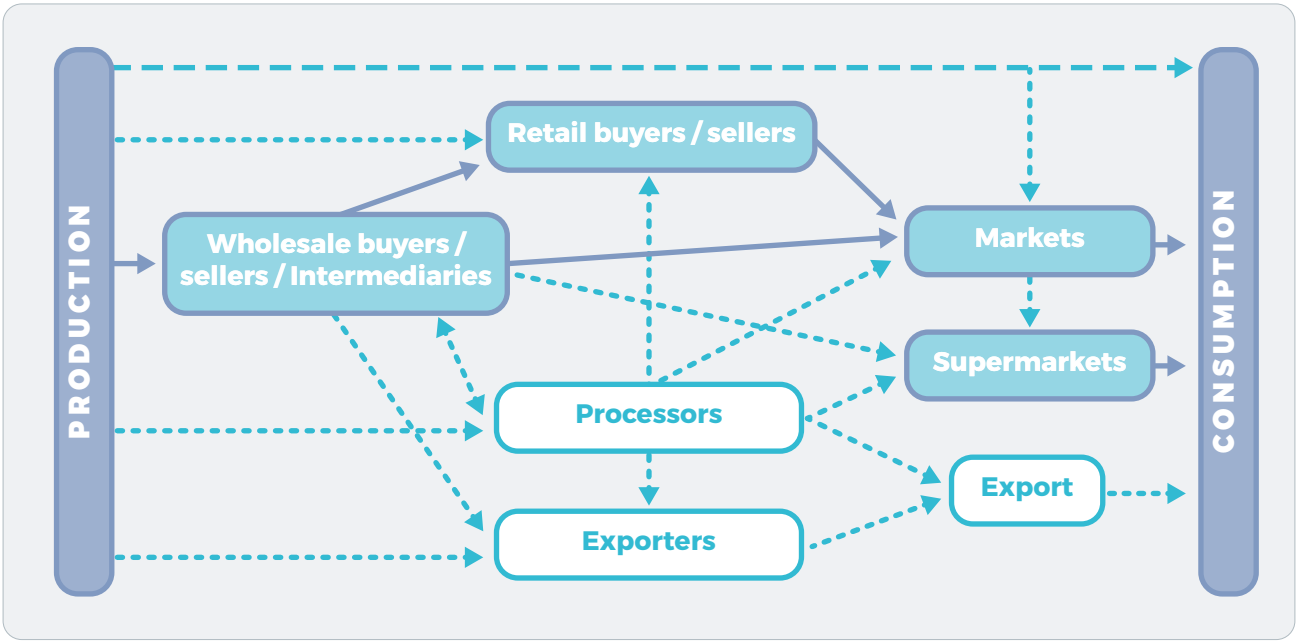
This dehkan farm specializes in viticulture and annually receives 20 000 tonnes of harvest, which is mainly exported to the Russian Federation. It has 580 ha of land, divided among 1 100 shareholders. The farm employs more than 100 people and grows four varieties of grapes: lady fingers, hussayni, white and black kishmish. To date, other branches of agriculture have been established in the dehkan farm, too.

The dehkan farm has refrigeration facilities, accommodating products up to 900 tonnes, which were installed in 2016. The use of refrigeration plants increases the shelf life of grapes, which makes it possible to sell them outside of the season.

Processing of grown products is one of the ways to generate added value and, accordingly, increase the income of the dehkan farm. Currently, thanks to some projects from international donor organizations, farmers have learned methods for canning of fruits and vegetables and for processing dried fruits. Within the framework of one such project, dehkan farms from the Sughd region, having experience and knowledge of processing, trained dehkan farms from the Khatlon region. In other words, an interregional exchange of experience was conducted. Of course, these project activities are point-to-point and cover a small number of farms. However, this practice can be used through the creation of advisory services that can be created both at the state level and at the level of private companies.

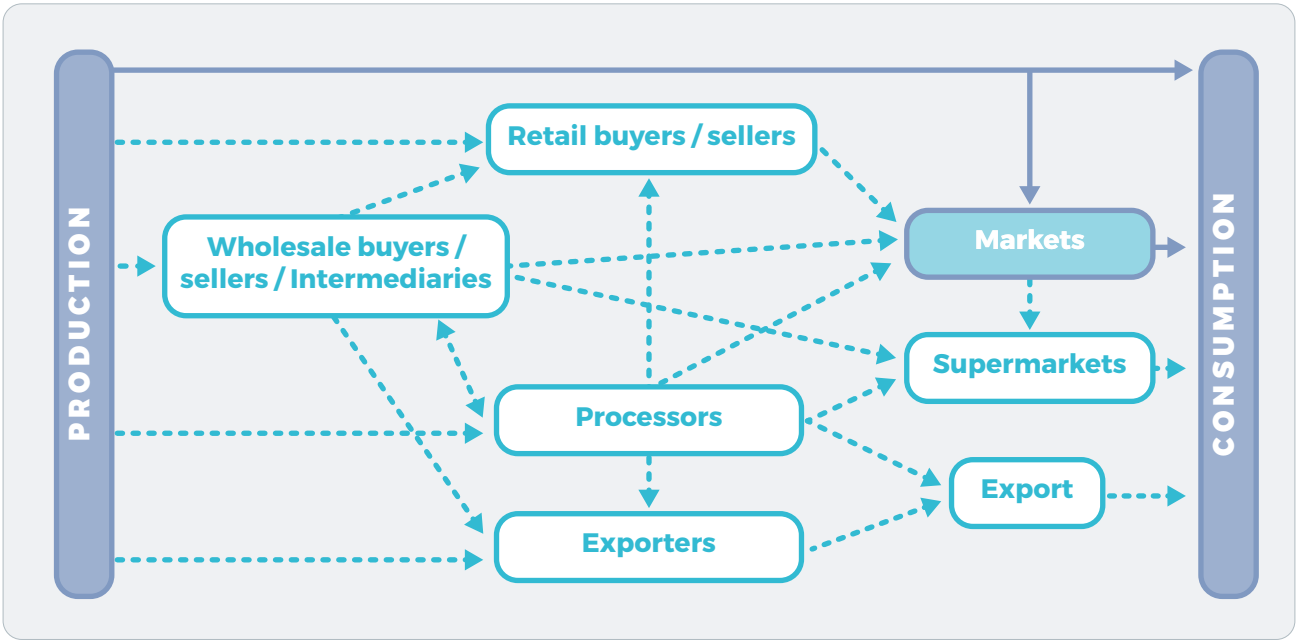
Selling. The sale of the products produced is another challenge for farmers for several reasons: a) farmers do not always have up-to-date information regarding the prices on the market for their products; b) farmers have limited access to markets; c) farmers from one locality often produce different products of different volumes, which becomes a barrier for wholesale buyers and supermarkets; d) farmers grow one product, but in different grades and sizes (calibration), and this also becomes a barrier for wholesale buyers, supermarkets and exporters (Picture 2 and Picture 3).

Picture 2. Main channels of dehkan farms' access to final consumers



SOURCE: THE AUTHORS' ELABORATION

Picture 3. Main channels of private subsidiary farms' access to final consumers



SOURCE: THE AUTHORS' ELABORATION

> "There is a protocol on cooperation with the Russian Federation at the 14th meeting of the intergovernmental commission on economic cooperation between the Russian Federation and the Republic of Tajikistan (2016). We see that farmers produce different products. One has a carrot of one breed, and another has another breed. For wholesale, this is a barrier. A distribution center should be built, where agricultural products from all regions will flow. Here, sorting, calibration, packing and shipping to the Russian Federation will take place. A mini-factory will be built, for which land has already been allocated. It is expected to serve 25 districts of Khatlon region and 13 districts of the DRS regions.
>
> The operator will work with the dehkan farm and sign an agreement with the farmer. He will order, and the farmer will supply it. The operator can also help with the purchase of seeds."
>
> *Interview with representative of Ministry of Agriculture*

According to interviewed farmers,[19] today, for most dehkan farms (and for all women-headed farms among the interviewees), direct access to markets and supermarkets is closed. Dehkan farms have to be satisfied with only the services of middlepersons, who purchase products at a known low price and then sell it at wholesale markets with a surcharge of 100 percent to 200 percent. It is almost impossible for smallholders to get a place on the market. Cases in which dehkan farms directly sell their products to end users are insignificant, and even then, it is necessary to solve issues related to transportation, which is financially burdensome for one smallholder. In the case of cooperation among several smallholders, it is possible.

[19] Within the study, 14 managers or heads of dehkan farms were interviewed, of whom four were women.

Access to new technologies is another challenge for the development of dehkan farms, as these technologies are practically inaccessible to the farms. For example, drip or sprinkling irrigation is expensive for smallholders. The furrow irrigation used does not take into account the difference in cultivated crops in neighbouring dehkan farms – for example, one dehkan farm grows rice, which needs water on a permanent basis, and, next to it, the farmer grows tomatoes, which should be watered at certain time intervals.

Access to finances. This section looks at the challenges and constraints that the farmer cannot influence but that can have a negative or positive impact on the development of the dehkan farm.

Financial lack of influence on dehkan farms' activities

"We receive money only from the sale of the harvest. It is not every day and not all the year 'round. In the spring, we really need money to sow, and it is good if there are any. In autumn, we need money during collection of harvest. Sometimes, it seems that all money goes to the land. The land does not give us so much money that we can save it and then do not look for them."

Interview with farmer

One of the barriers to the commercialization of agriculture is limited access to financial services. The focus of this research is smallholders and family farms, whose financial capacity is considerably limited. In this section are data on credits extended to the agricultural sector as a whole by financial institutions, such as banks, microdeposit organizations, microcredit organizations, and microcredit funds.[20] It should be noted that microcredits and credits provided to the agricultural sector account for about half of all credits and microcredits in total, and around 30 percent of those beneficiaries from loans are women and 70 percent are men (FAO, 2016a). In 2016, the portfolio of credit of the industry was SM 1 037 billion (USD 131.6 million), and the portfolio of microcredit was SM 751.8 million (USD 95.4 million). For agricultural activities, credit in the amount of SM 474.4 million (USD 60.2 million) was granted in 2016, and that same year SM 652.6 million (USD 82.9 million) was repaid (Table 14).

Table 14. Issued credit and microcredit for agricultural activities, 2008–2016

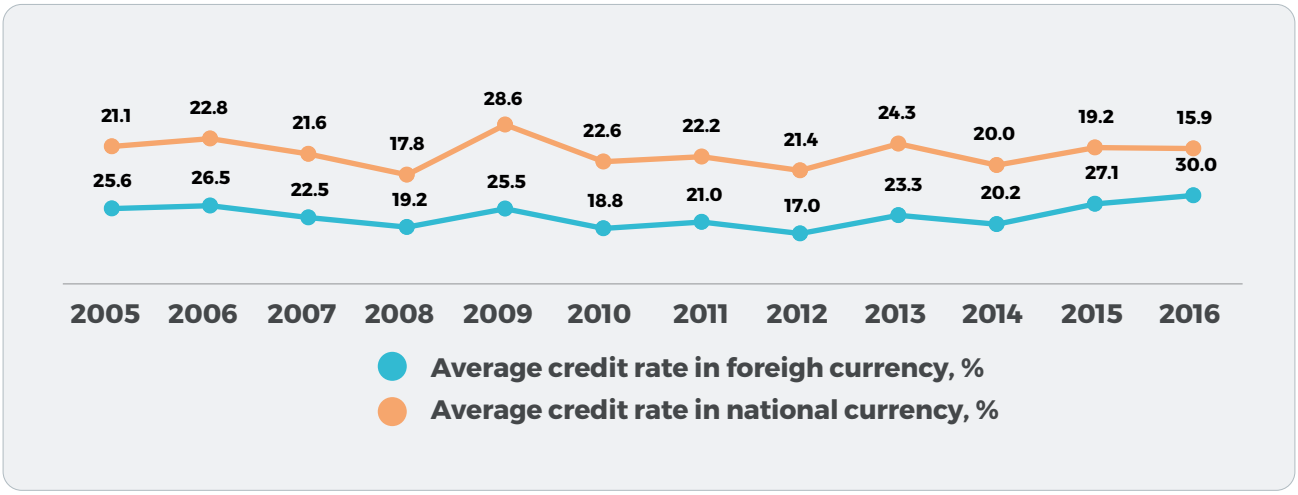
Year	Total amount of credit, millions SM	Issued credit, millions SM	Repaid credit, millions SM	Total amount of microcredit, millions SM
2008	2 148.6	631.8	382.2	480.4
2009	2840.2	623.5	438.5	443.3
2010	647.9	735.3	783.4	393.5
2011	945.5	824.5	518.1	385.4
2012	777.1	964.2	1 147.3	484.1
2013	931.7	794.2	659.4	676.8
2014	945.1	1023.6	803.9	983.2
2015	1 003.1	611.6	675.4	985.0
2016	1 036.8	474.4	652.6	751.8

SOURCE: NBT.2012; NBT.2013; NBT.2017.

[20] According to the NBT data, in the country, in 2015, there were 17 banks, 39 micro-deposit organizations, 29 micro-credit organizations and 36 micro-credit funds.

It is important to note that credit interest rates for agricultural activities are higher than the average interest rates for credit in the country. In 2015, the average credit interest rate in national currency began at 27 percent, whereas the interest rates of credit for agricultural activities started at 32 percent. Exceptions are credits granted in the framework of projects and state programmes. A similar situation is observed in the interest rates of credit granted in foreign currency (Figure 14).

Figure 14. Average interest rate of credit in national and foreign currency, %, 2005–2016



SOURCE: NBT.2018.

Those interviewed in the framework of the dehkan farm survey noted high interest rates among the negative aspects of the relationship with financial institutions. As a consequence, this barrier leads to the following development scenarios: prolonging the credit (with the credit history of the creditor getting worse), refinancing (applying to another financial institution to obtain credit in order to pay off the previous credit), borrowing from private individuals, deteriorating living conditions (because the lender is forced to sell his or her property for repayment of a loan, for example), and more.

Savings fund

"We implement this approach as a 'savings fund'; in the Soviet times, it was called a 'black cash register.' Credits are expensive, and dehkan farms need money. Every month they gather money and, when it is needed, farmers can buy seeds. In general, to solve their challenges.

Interview with representative of HELVETAS

Since data on the income of dehkan farms and private subsidiary farms are not available, the following method was used to calculate and present the data on income: The value of the gross output of agriculture produced by dehkan farms and private subsidiary farms was divided into the number of dehkan farms and private subsidiary farms. The result received can be considered as the average income.

The calculation results show annual growth in the incomes of dehkan farms and private subsidiary farms in the production of agricultural products. The incomes of dehkan farms for the period under review, from 2005 to 2016, almost doubled to SM 26 455 (USD 3 300) per year, and the income of private subsidiary farms increased almost five-fold to SM 6 380 (USD 800) per year (Figure 15).

Figure 15. Average incomes for dehkan farms and private subsidiary farms in the production of agricultural products, SM, 2005–2016

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

Extension service. The Soviet concept of collective farming meant, among other things, the distribution of functions among the participants of the farm. For example, the scope of the agronomist's responsibility included monitoring the entire production cycle, from buying seeds and preparing the soil for sowing to storing the collected harvest. The transition to a new system assumed the construction of a different concept of interrelations and interactions among market actors, and most of the issues have not been resolved. At the same time, new challenges were introduced that were essentially absent in the old system. One of these challenges is the need to educate farmers directly to competently conduct agricultural activities.

In addition to direct knowledge of farming, farmers need skills in financial planning, or the ability to make decisions based on the current market situation. Frequent price hikes in the domestic market and the inability of farmers to make the right decisions based on market trends and the volume of food imports and exports combine to cause high levels of uncertainty of incomes and an inability to plan investments and future expenditures. Farmers often plan to sow a particular crop based on the prices of products of the previous year, or they are oriented to the neighbouring dehkan farms, which decide on the choice of the sown crop based on the same considerations. This can lead to prices for agricultural products being sharply reduced, or vice versa. As an example, one can quote the price of onions. In July 2016, the retail price was SM 1.0 (USD 0.12). For farmers, this served as a signal that income from onions would be low. In July 2017, the retail price was already SM 4.5 (USD 0.56), because most farmers did not sow onions. For the year, the price almost quadrupled (FAO and TajStat, 2018).

The absence of consulting services on taxation issues, production technologies, agribusiness, exports, sales, marketing and other topics is a challenge faced by all types of dehkan farms, both those headed by women and by men, and not just smallholders and family farms. The number of dehkan farms receiving such services is insignificant. Most often, consultations are disseminated through projects carried out by international organizations or through the informal exchange of knowledge among farmers. That is, currently, the only mechanism for disseminating consulting and practical services is the project activity of local and international non-governmental organizations in the field of agriculture.

Questions from farmers

Farmers specializing in horticulture need information and knowledge in various fields:

- What is crop rotation?
- Which seeds are best used, and where can one buy cheaper seeds and pesticides?
- What to sow and when to start sowing?
- How and when to water different crops?
- How to pay taxes?
- How to get money?
- What is better to grow in order to get a higher income?
- Why we should pay for water?

Researchers note the limited human resources for the provision of consulting services. It should be noted that among the existing consultants, the older generation is predominant, and the younger generation (approximately those younger than 40) is almost absent in the consulting sector, which indicates a lack of continuity. Also, existing limited funding does not allow the state to provide the required consulting services to dehkan farms. The projects of international organizations, in turn, are better financed and attract experienced specialists from outside, but they are uncoordinated as a result of isolated and duplicative efforts (Kazbekov, J., Qureshi, A. S, 2011). Thus, limited agricultural knowledge, including information available to dehkan farms, hinders the production of agricultural products.

To fill knowledge gaps, some active farmers use the Internet or foreign literature, but these contain hidden costs. The sources available are mainly foreign, mostly Russian, and do not take into account the natural and climatic conditions of Tajikistan. Thus, farmers can use the wrong technologies and get unsatisfactory results.

Research conducted in Tajikistan on sustainable farming practices to mitigate climate-related shocks found that farmers mainly obtain information about sustainable practices from other farmers. However, according to the research, "within villages, female-headed households do not seem to benefit from the knowledge-sharing networks that male farm heads enjoy" (World Bank, 2014a). Women's ability to access information is constrained by such factors as more limited mobility, fewer networks and a lower level of education than men (FAO, 2016a).

Education institutions. There are two higher education institutions in the country that train specialists in the field of agricultural work: Tajik Agrarian University named after Sh. Shotemur (TAU) and the Polytechnic Institute of the Tajik Technical University named after Academician M.S. Osimi. TAU prepares the main share (78 percent) of specialists in the agricultural sector.

Along with these two main institutions in the country, it can also be noted that in a number of institutes there are separate faculties that prepare relevant specialists: the Technological University of Tajikistan (specialties: food processing and agrotechnology); State University in Dangara (agronomy, food storage and processing technology, economics and management, technology, livestock product storage and processing, technology for natural fibers, and technology for synthetic fibers). Along with the universities in the country, there are two colleges in Bokhtar and Mastcho (Jones, K., Richter, K., Ludgate, N, 2015).

Despite the annual increase in the number of students in agricultural specializations, the share of students in the structure of all specializations of universities is about 2 percent. In the 2005/06 academic year, their number was 6 500 people, while in the 2015/16 academic year, their has increased to 10 600

people. The number of enrolled in the 2015/16 academic year was 2 300 people, and the number of graduates amounted to 1 800 people. In contrast with the large number of women who are engaged in agricultural work, the share of female students in the agricultural sector was 8 percent (Table 15).

Table 15. Training of specialists (students) for the agricultural sector, 2005–2016

Academic year	Number of higher education institutions	Number of students	Number of students enrolled	Number of students graduated	Share of women among students, %
2005/06	1.0	6 500	1 700	0 600	6.0
2006/07	2.0	7 300	1 900	0 100	3.0
2007/08	2.0	8 100	2 300	0 900	5.0
2008/09	2.0	9 300	2 300	1 000	4.0
2009/10	2.0	9 700	2 100	1 000	7.0
2010/11	2.0	9 800	1 800	1 200	7.0
2011/12	2.0	10 100	1 900	1 300	8.0
2012/13	2.0	9 300	2 200	2 900	7.0
2013/14	2.0	10 600	3 000	1 800	7.0
2014/15	2.0	10 200	1 700	1 800	7.0
2015/16	2.0	10 600	2 300	1 800	8.0

SOURCE: TAJSTAT, 2016B.

During the period under review, from 2005 to 2016, the number of graduate students also increased (Table 16).

Table 16. Training of specialists (graduate students) for the agricultural sector, 2005–2016

Academic year	Number of graduate students	Number of graduate students enrolled	Number of graduate students graduated
2004/05	35	19	8
2005/06	67	26	7
2006/07	79	36	12
2007/08	97	31	17
2008/09	75	26	25
2009/10	91	36	28
2010/11	108	34	27
2011/12	85	38	33
2012/13	65	30	29
2013/14	87	48	26
2014/15	93	21	29
2015/16	80	22	29

SOURCE: TAJSTAT, 2016B.

Despite the annual minor growth of specialists trained by the system of higher education, the sector is still facing shortages of professionals. The lack of interest of graduates is connected with the

unprofitability and seasonality of the sector and, accordingly, with the instability of income.

A significant problem within the system of training personnel in the university is the discrepancy between the conditions of education and training programs and the requirements of the modern market. At the same time, as specialists note, some textbooks on agricultural specialization have not lost their relevance to this day.

It is necessary to note the measures taken by the Government to introduce changes and assistance in developing the capacity of higher educational institutions, including agricultural ones, to help improve the curriculum. A number of agreements were signed with international universities, and programmes funded by donor organizations were established. Within the framework of these programmes, students, graduate students and teachers have the opportunity to work on probation and participate in exchange programs.

However, disinterest of students in applications of received knowledge in practice leads to a "loss" of students. They either do not go on to work in their area specialization upon graduation from the university, or they use international training programmes as a path to migration and stay in those countries where they have been practicing (or, on return to their country, they find ways to return to that other country). In most cases, these are the countries of the European Union, such as Germany, Poland, Portugal and Switzerland.

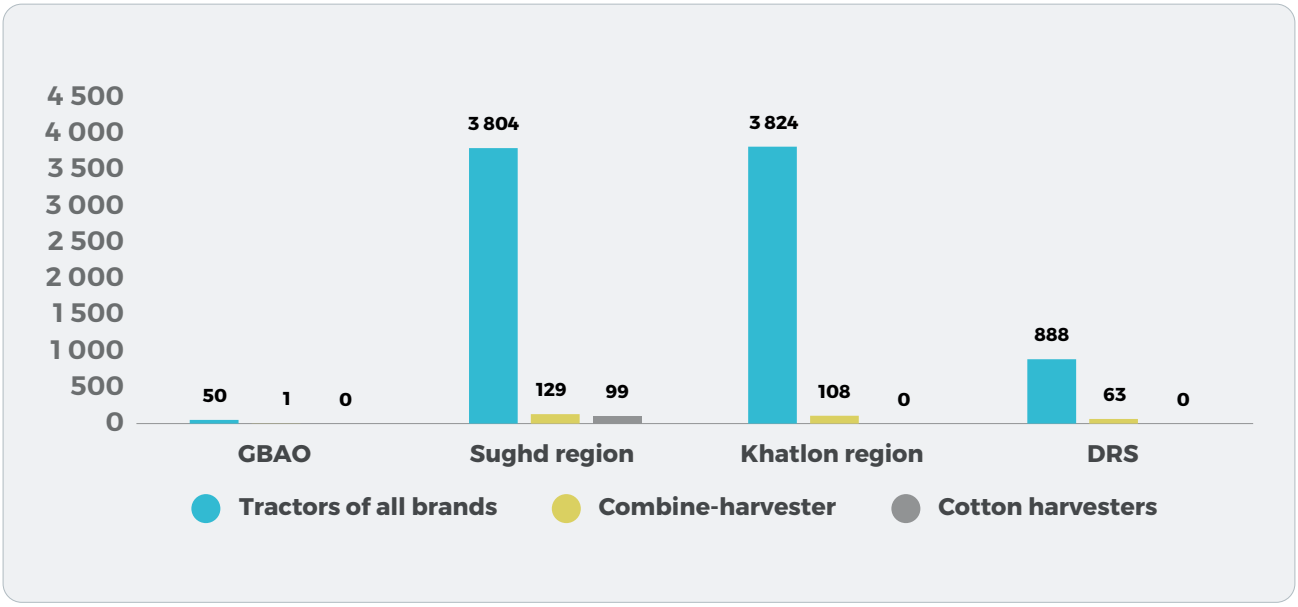
Research institutes. The Tajik Academy of Agricultural Sciences (TAAS) has been functioning in the country since the Soviet time. Today, its structure includes seven scientific branch institutes (horticulture gardening and vegetable growing, soil science, livestock, veterinary, biosecurity, economy of agriculture), three scientific centers (the National Center for Genetic Resources, the Republican Center for Livestock Biotechnology, and the Center for Agricultural Mechanization and Innovative Technologies) and a network of 26 branches, stations, polar points and experimental farm research institutions. The purpose of TAAS is to contribute to the development of the agricultural sector of the country, which at the moment is complicated by insufficient funding from the state. Eighty percent of the allocated state budget is spent on wages and social taxes, which is sensible, making it impossible to spend on other articles. As a consequence, the material and technical base of research laboratories has not been updated since the beginning of the 1990s. Additionally, there are practically no young people among TAAS workers, and research is carried out on the initiative of the institutions themselves.

Among the sources of knowledge and information for farmers are information and educational activities, farmers' schools, and activities for exchanging experience with farmers from different countries and regions conducted as part of project activities by local and international non-governmental organizations. Despite the importance of ongoing work to increase the capacity of farmers, it should be noted that the projects are localized, focusing on specific localities, and are of a short-term nature. At the system level, access to practical information is limited for dehkan farms.

Access to agricultural equipment and machinery. Dehkan farms, especially smallholders, have limited access to agricultural equipment and machinery. Many of them use outdated equipment (most often rented), but most often manual labour is used. In most cases, works such as ploughing the land, harvesting, and using traditional tools are performed by women, while the control and use of agricultural machinery is mostly done by men. A 2009 study of the gendered division of labour on household plots/presidential land and on joint farms (*kolkhozes* or *sovkhozes*) in the Sughd and Khatlon regions found that men made up between 78 percent and 98 percent of tractor and machine operators (World Bank,

2009). Throughout the country in 2016, there were only 8 566 tractors, 301 combine harvesters and 99 cotton harvesters, the bulk of which are concentrated in the Sughd and Khatlon regions (Figure 16).

Figure 16. Distribution of tractors, combine harvesters and cotton harvesters, by region, 2016



SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

It is important to understand that their number decreases year by year due to wear and tear and due to lack of funds for proper maintenance.

Water irrigation services. The reorganization of collective and state farms and the creation of dehkan farms, among other things, led to the loss of management and, consequently, maintenance of the on-farm irrigation system. Most arable land (84 percent) is served by an irrigation system that was developed before independence, and the infrastructure is in need of capital repairs (ADB, 2014). The increase in the number of water users in agriculture, producing different crops, complicates the situation regarding access to irrigation water.

Female dehkan farmers not only have smaller land plots overall, but they also have a smaller proportion of irrigated land (93 percent of land farmed by men is irrigated, compared with 83 percent of land farmed by women). In absolute numbers, male-headed dehkan farms have an average of 35.6 ha of irrigated land, while women-led farms have 12.6 ha (FAO, 2016a).

Conflicts of interests among various water users, dehkan farms, agricultural enterprises and private subsidiary farms have become one of the consequences of the lack of management. For the maintenance and care of the state of on-farm irrigation systems, water users associations have been established in the country since the beginning of 2000. To date, there are about 400 organized water users associations, characterized by a lack of sustainability primarily due to a clear definition of the role and function of this body in the management system. In general, water users associations serve from 400 ha to 3 000 ha of land and include from 150 to 1 300 dehkan farms. About 150 WUAs are not functioning properly at the moment, and the irrigation fees and the quality of services provided by them remain low. The representation of women in water users associations is minimal.

Obviously, the work on strengthening and expanding the functions of water users associations should be continued, since now water users associations are functioning with financial support from f development partners in the framework of project work. The programme for reforming the water sector in Tajikistan to support, develop and create new water users associations for the period of 2016–2025 foresees an investment of SM 86.9 million (USD 12.5 million), while the expected contribution of development partners is determined in the amount of SM 86.6 million (USD 12.4 million). Among the priorities are tasks to strengthen the functions of water users associations on managing the on-farm irrigation network (Government of Tajikistan, 2015b).

3.3 Environmental and nature development/climate change

Geography and climate. Tajikistan is a predominantly mountainous country in Central Asia; more than 93 percent of the territory is occupied by mountains, with absolute altitudes from 300 meters above sea level to 7 495 meters above sea level. The total area of the country is 141 554 square km, about half of which is at altitudes higher than 3 000 meters above sea level. Due to severe climatic and physical-geographical conditions, most of the country's territory is unsuitable for agriculture. In general, the country is divided into five natural and geographical areas. Each area differs from the others in climatic conditions, relief, geological structure, vegetation, fauna and anthropogenic load.

Tajikistan is a landlocked country and is characterized by an extreme continental climate. In general, a characteristic feature of the country's climate is a high intensity of solar radiation, long duration of sunshine, aridity, low clouds, abundance of heat, and considerable dustiness of the air.

Average annual temperatures can range from 17 °C in the south to minus 7 °C. The maximum temperature is observed in July and the minimum in January. The average annual amount of total solar radiation reaches 220 kcal / square cm. The duration of sunny days (hours) leads to the possibility in the country of creating greenhouses for growing early vegetables and citrus fruits, mainly lemons. There are no official data on the number and total area of established and functioning greenhouses, but according to unofficial data, more than 300 greenhouses created by dehkan farms and private subsidiary farms in the country operate on a total area of land not exceeding 500 ha. A significant share of greenhouses are established and operating in the Khatlon region. These greenhouses were created with the support of various international organizations, such as the United States Agency for International Development, the Agency for Technical Cooperation and Development, and Oxfam (Asia-Plus, 2017).

Irrigation of lands. One of the peculiarities of Tajikistan's climate is the uneven distribution of rainfall throughout the country during the year. The greatest number of rain falls in the cold period, and in the warm period, rain is either absent or insignificant. The average annual precipitation varies from 70 to 2 000 millimeters, depending on the region. In cotton-growing areas, there is very little precipitation (only 150 to 300 millimeters). There is very little precipitation – only 100 millimeters – in the Ferghana

Basin, too. The East Pamir area receives the least moisture in Tajikistan, where there is almost no snow and no real rain (Open Network, 2000; HydroMet, 2008; Travel agency OrexCA, 2018).

In connection with this, agriculture in the plains is possible only with artificial irrigation. The total area of suitable land for irrigation in the country is about 1.6 million ha, of which 753 000 ha was created by the land reclamation process, as of 2016. However, only 734 600 ha is irrigated. The irrigated area in the country for the period under review increased by 14 200 ha, or 2 percent, from 720 400 ha in 2005 to 734 600 ha in 2016. The population in that time grew by 1.9 million people, or 28 percent, from 6.842 million in 2005 to 8.742 million people in 2016. Consequently, the specific area of irrigated lands per person has decreased year by year; in 2016, it amounted to about 0.08 ha per person (TajStat, 2008a; TajStat, 2010a; TajStat, 2015a; TajStat, 2017a).

The dominant method of irrigation of crops is irrigation by furrows, which is used on 98 percent of the total irrigated area. In the remaining 2 percent, irrigation by flooding of the basin, for rice, is applied. Drip irrigation is applied in a very limited area (about 100 ha). Sprinkling with sprinklers is not used because of the high energy intensity and the lack of electricity (HydroMet, 2014).

In total, there are 947 rivers in the country with a length of more than 10 km. The total length of the rivers is 28 500 km. The average annual runoff ranges from 1 litre per second per square km in the plains of the country to 45 litres per second per square km in the mountainous regions. The total flow of rivers passing through Tajikistan is about 65 cubic km. About 52 cubic km are formed from this volume within the country, of which about 11.65 cubic km, or 15–20 percent, are used. To date, agriculture consumes about 80 percent of the total volume of offtake water (TajStat, 2017d). It is also worth noting that about 35 percent of the offtake water comes back to the river in the form of collector-drainage and other wastewaters. Over 20 percent of the volume of offtake water is lost during transportation. The length of the inter-farm irrigation canals is 6 000 km, of which 40 percent are covered with concrete or are made in ferroconcrete trays, while the total length of the on-farm irrigation network is almost 26 000 kilometers, of which 35 percent are made in the form of concrete lining, trays and pipelines. The performance coefficient of the irrigation systems is 55–65 percent. Irrigation net norms (at the field level) range from 6 000 to 16 000 cubic meters per ha (9 000 cubic meters per ha, on average), depending on the natural and farming areas, the application of water-saving methods and the implementation of integrated water resources management (HydroMet, 2014)

The basis of irrigated farming in the country is made by irrigation systems built during the Soviet period, which is a complex infrastructure in terms of the technical equipment of service technology, including various types of facilities, pumping stations and capacities. The maximum height of water lifting by pumping stations is 300 meters.

Irrigation challenges. About 60 percent of Tajikistan's irrigated lands are served by gravity irrigation systems built in the middle of the twentieth century. The physical wear of these systems exceeds 50 percent. A significant part of these water intakes is built on unregulated rivers, which annually creates problems with water intake. Because of this, during drought years, some dehkan farms do not receive water for several weeks.

The remaining 40 percent of irrigated land is located in the zone of pumping stations and wells. Five percent of these lands are not irrigated for technical reasons. In fact, the pumps irrigate less than planned, for reasons including the wear of about one-third of the pumping and power equipment, pressure pipelines, high energy costs, and deficits in the spring. The technical condition of the pressure

pipelines of pumping stations, at a total length of 298 kilometers, is a serious concern. They have been operated for more than 40 years (some more than 50 years), and more than half of them require replacement. The socioeconomic consequences of the failure of the irrigation zone threaten a great disaster for residents who, due to desertification, could turn into environmental refugees. Solving these problems will be more expensive than the maintenance and operation of pumping stations (**Demidov, V., Akhmadov, H, 2016**).

Another obstacle to pumping water for irrigation is the systematic increase in electricity prices and the unstable supply of electricity. These lands, with an area of about 110 000, ha lose up to 30 percent of their potential income from the possible cultivation of early vegetables and cereals. This is due to the late supply of electricity in spring and early shutdown in the fall. Due to this, dehkan farms lose the income of 38 000 ha of land, which are irrigated instead by means of electrified vertical wells. Of the available 1 823 vertical drainage wells, about 74 percent are in non-operating condition. The problems of the efficient use of water in agriculture will remain of extremely high priority in the future. It should be noted that, according to NDS-2030, this problem will be resolved before 2030.

Climate change. For fruit growing, the duration of the frost-free period is also important. In the north of the country, this period lasts 195 to 216 days, with a maximum of 282 days. In the south, the frost-free period lasts 210 to 242 days, with a maximum of 291 days. The yield of fruit is very strongly influenced by spring frosts, which sometimes coincide with the flowering of fruit trees. In general, the favorable climate in the country has also contributed to the production of many types of cereals, fruits and vegetables, and it also allows the cultivation of medium-fibre and fine-fibre cotton varieties.

In addition, in a relatively small area[21] of the country, there are forests that perform the functions of natural protection of populated areas from mudflows, avalanches and erosion, while regulating the water balance and microclimate. Almost all forests of Tajikistan are state property and are assigned to forests of the first group,[22] where forestry activities are aimed at preserving and improving their condition. In recent years, due to the energy crisis, forests have been a source of energy for the local population. The forest-covered area is represented by 268 types of trees and shrubs (TajStat.2018; HydroMet, 2018).

Tajikistan is one of the most vulnerable countries to climate change in the Europe and Central Asia region. The country's vulnerability is explained not only by the geographical position of Tajikistan and its complex mountainous terrain, but also by existing serious problems in the economy and a weak scientific and technical base. Obsolete infrastructure, high level of degradation of agricultural lands and natural ecosystems are just some of the factors that impede development, which means that the country's ability to cope with climate change is undermined.

The country already is experiencing significant negative consequences of climate change. Reduction of the area of glaciers, frequent droughts, more intense and frequent natural disasters, shifts in the formation and distribution of rainfall, and changes in ecological systems have become real threats to the long-term socioeconomic development of Tajikistan.

According to existing forecasts based on computer modeling, by 2030 the average annual temperature in most parts of Tajikistan could increase by 0.2 °C to 0.4 °C. And in the past 50 years, the average

[21] Forest covered area is 412 000 ha (3 percent of the entire territory of the country), and the total area of the forest fund is 1.8 million ha (13 percent of the entire territory of the country).

[22] Forests that are represented by valuable tree and shrub species and are of great national economic importance.

temperature in different regions of the country has increased by an average of 0.2 °C to 1.3 °C. Precipitation will become more volatile, as will the formation of snow cover. There will be significant deviations in the intensity and geographical distribution of precipitation and more frequent extreme weather and climate events, such as hail, torrential rains or, conversely, droughts.

A rise in temperature and variability in precipitation will lead (and already leads) to a reduction in the area and volume of glaciers, an increase in the dynamics of mudflow and flood events, and adverse changes in the regime of river runoff. Such important sectors of Tajikistan's economy as agriculture, hydropower and transport infrastructure will be in the area of special risk (**Asia-Plus. Idrisov, T, 2016**).

In recent years, against the backdrop of global climate change, there has been an increase in the number and intensity of natural and dangerous phenomena and unfavorable weather conditions, which cause significant damage to the agricultural sector, including to dehkan farms. Among the dangerous weather phenomena, the greatest damage to agriculture is caused by intense rainfall and mudflows, high temperatures accompanied by dry winds and drought, strong winds and dust storms, freezing temperatures and extreme cold temperatures, including long-term, and pests and diseases. The influence of climatic factors can be observed in the spring, when rainfall promotes the formation of soil crust, and causes irreparable damage to agricultural products – especially to cotton, which requires re-sowing. Extremely high air temperatures and drought suppress the development of plants, promote fires and intensify desertification. They also reduce the amount of water available for use in agriculture, which in complex leads to large economic losses. Hail causes mechanical damage to plants and reduces the quality and quantity of crops. In general, due to climate change in the past ten years, about 1 000 people have died and more than SM 1 billion (USD 19 million USD) in damage has been caused (HydroMet, 2014).

Land degradation. The yield of agricultural crops also depends on the condition and degree of land degradation; the correct timing of planting; the sum of effective temperatures; the use of fertilizers, pesticides and other agricultural chemicals; the reliability of water supply systems; and the quality of seeds and technologies.

According to current assessments, as the result of irrational use of lands in Tajikistan, 82 percent of all lands and 98 percent of agricultural lands are currently subject to erosion. Among those lands, 89 percent are subject to high and moderate erosion (Bann, C., Shukurov, R., Boziev L., Rakhmatova D, 2011). Basically, this situation is connected with the lack of systematic cultivation and crop rotation. A decrease in the content of organic carbon (humus) in all soils was also recorded. The lack of crop rotation practices has contributed to a decline in soil fertility and the spread of serious plant diseases, and it also has limited the ability of dehkan farms to use crop rotation to produce livestock feed. A particularly intensive use of pesticides and other agricultural chemicals has caused toxic and chemical pollution of soils in an area of more than 30 000 ha in the south and north of the country.

In some areas, the growth of crop yields is constrained by processes of secondary soil salinization, associated with a high occurrence of mineralized groundwater, and in the massifs of new development is characterized by natural salinity or soil foliation. Therefore, the improvement of the meliorative state of irrigated lands is the main reserve for the growth of crop yields. Until the beginning of the 1990s, the drainage system as a whole maintained a normal melioration regime for irrigated land. The sharp decline in funding for cleaning and repair works, as well as the lack of an appropriate agrotechnical approach when using saline lands and the violation of irrigation regimes, has led to the country's

unsatisfactory melioration state of more than 50 000 ha of land from the total irrigated area (Buzrukov, J, 2012).

In general, agriculture is poorly financed and has financial risks; it is particularly vulnerable in terms of volatility and climate variability. And the problems related to the quality of the land, the availability of water, rising temperatures, decreasing precipitation and occurrence of natural disasters will continue to grow due to climate change. Nevertheless, agriculture has significant potential for adaptation to climate change and a parallel mitigation of the impact of human activities on climate. This potential can be realized through the proper planning and application of appropriate technologies to reduce the pressure on critical water and land resources, as well as through the maintenance of energy consumption at a low level.

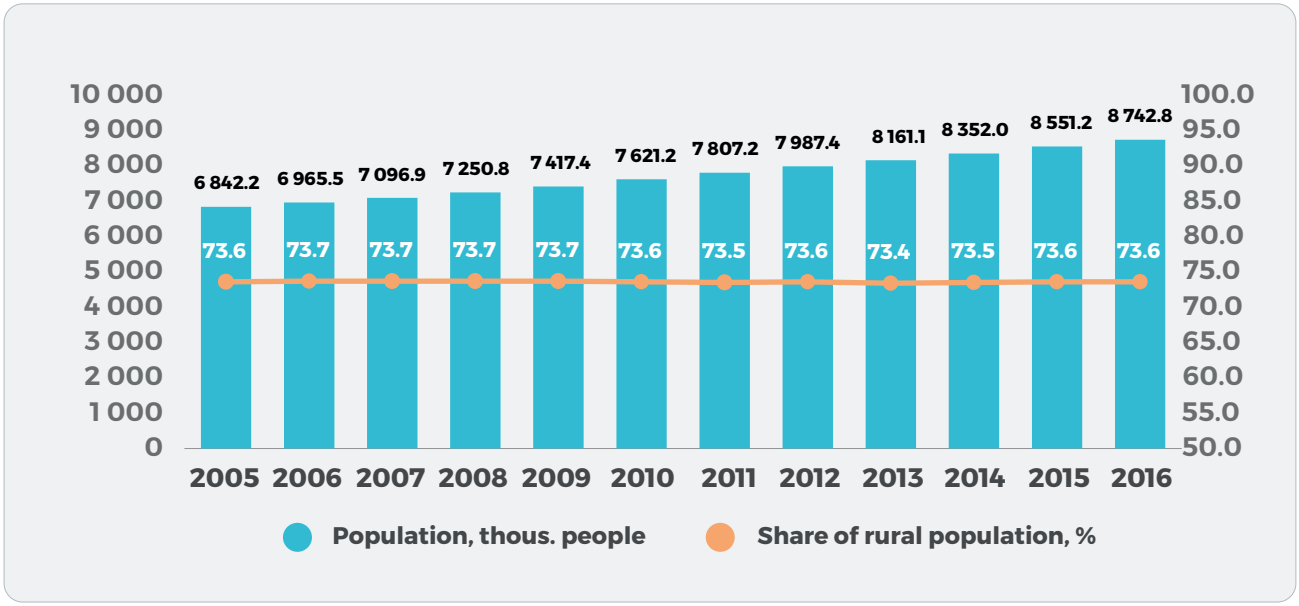
At the same time, it should be noted that the current distribution of preventive and mitigating measures against climate shocks is not widespread, and their availability for smallholders and family farms seems unrealistic. Thus, agriculture in general and, in particular, smallholders and family farms (which are more likely poor and less resistant to the challenges facing them) will be very sensitive to climate change.

3.4 Socio-demographic issues in rural areas and quality of life

Population. According to official data, the population of Tajikistan in 2016 exceeded 8.7 million people, more than 74 percent of whom lived in rural areas. Less than 3 percent of inhabitants live in the Gorno-Badakhshan Autonomous Oblast (GBAO), the largest and most mountainous region. The annual population growth rate is 2 percent. Since 1991, the population has grown by 3.4 million, while the growing labour force, not finding use in the domestic market, rushes into external labour migration. With 26 percent of the people in Tajikistan living in urban areas and 74 percent in rural areas, labour migrants are mainly recruited from rural areas (Figure 17).

Official statistics show that 517 300 people migrated from Tajikistan to other countries in 2016 (TajStat, 2017e), while researchers believe that its size reaches 1.5 million (Abdulloeva, N., Beknazarova, G., Kochkin, E, 2014; Lokshin, M.M., Chernina, E.M, 2013; Danzer, A., Dietz, B., Gatskova K, 2013; Mezentseva E, 2012; UNICEF, 2011) people. Beginning from the 1990s, labour migration has been one of the most widespread strategies of households for survival, and is conducted mostly by men.

Figure 17. Population dynamics of Tajikistan and share of rural population, 2005–2016



SOURCE: TAJSTAT, 2008B; TAJSTAT, 2010B; TAJSTAT, 2015B; TAJSTAT, 2017C.

Food security and nutrition. Dehkan farms, as noted earlier, play a crucial role in ensuring the country's food security, since their formation is primarily connected with the difficulties faced by the population in providing their own food security.

So far in Tajikistan:

- Various projects are being implemented to address food security issues, including to meet the population's needs in food and in the development of industries that are directly linked to food security.
- The Law of Tajikistan from 29 December 2010, under No. 671 "On Food Security," was adopted and approved, defining the main directions of the state policy in the field of ensuring food security as an integral part of the state's security, in accordance with generally recognized international principles and norms (Government of Tajikistan, 2010b).

Since 2005, TajStat has been preparing and releasing quarterly analytical material in the form of a bulletin on food security. The basic data in the food security bulletin are: food production, availability and accessibility of food, sown areas, agricultural production, general climatic characteristics, nutritional and health conditions, water supply, prices, and quantitative indicators of the food market situation (TajStat, 2017g). According to this bulletin, in the country there is annual growth in the consumption of basic foodstuffs in the consumer basket of the population of Tajikistan: meat and meat products, milk and dairy products, eggs, sugar, bread products, potatoes, vegetables, melons, cucurbits crops, berries, grapes and vegetable oil. In general, during the period under review, the consumption of these products almost doubled, and the consumption of some products (for example, eggs) quadrupled (TajStat, 2008b; TajStat, 2010b; TajStat, 2015b; TajStat, 2017c). This situation is primarily related to the positive dynamics of population growth in Tajikistan.

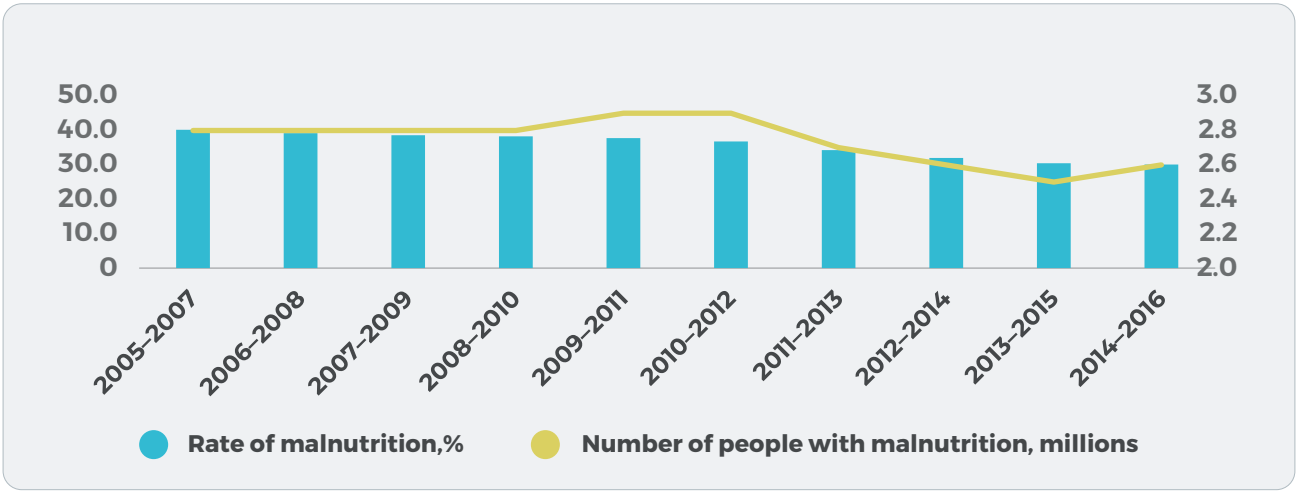
Also, the bulletin shows that with the increase in the consumption of basic food products, their production is also steadily increasing. During the period under review, the production of meat, milk,

eggs, potatoes, vegetables, cucurbits crops, fruits, berries and grapes almost doubled (TajStat, 2017g). Despite this, between February and April – when household food stocks are getting low, agricultural work requiring expenditures is beginning, and migrant family members are preparing to leave, which also requires additional funds – there is limited access to locally produced foods. In other words, at this time the consumption of food is much lower than the recommended level of physiological norms of consumption (FAO, 2016a),[23] as a result of which the supply of basic types of food is carried out through imports. In addition, the country's food security depends on such factors as the size of the harvest, the volume of income from remittances, the increase in the cost of food and even decision-making within the household, since it is variable data.

It is also worth noting that despite the annual growth in the production and provision of basic food products, among the countries of the Europe and Central Asia region the highest level of malnutrition is observed in Tajikistan. In 2014–2016, 30 percent of the population (2.6 million people) were malnourished,[24] though this level has decreased from 40 percent (2.8 million people) in 2005–2007 (Figure 1.18).

Micronutrient deficiency among women and children remains a public health concern because a lack of diverse diets is associated with household food insecurity (FAO, 2016a). Around 59 percent of women and 53 percent of children younger than 5 show iodine deficiency, and 24 percent of women aged 15–49 are anemic, with the highest rates in the Gorno-Badakhshan Autonomous Oblast and the Districts of Republican Subordination (TajStat, Ministry of Health & Measure DHS / ICF International, 2013).

Figure 18. Rate of malnutrition and number of malnourished people, 2005–2016



SOURCE: FAO, 2018.

Since dehkan farms are among the main producers of agricultural products, including food products, the solution of the problems with the population's food security provision directly depends on the activity of dehkan farms. In this case, the most vulnerable are households headed by women who are divorced or widowed. The absence of adult male power in the household causes difficulties with the management of their own agricultural activities.

[23] Physiological norms of consumption in food and energy (including recommended levels of basic food products per capita), developed in the end of 1980, operate in Tajikistan.

[24] The share of the population with caloric intake below the minimum dietary energy requirement.

Poverty. Poverty and low living standards remain important issues for most of the Tajikistan population. Since the proclamation of independence in Tajikistan, significant work has already been done to reduce poverty. In the period from 2003 to 2009, the poverty level in the country declined from 72 percent to 47 percent, and in 2015 it was 31 percent. The level of extreme poverty for this period decreased from 42 percent to 15 percent. Based on national indicators, the poverty rate in rural areas in 2015 was 35 percent, with 18 percent being extremely poor. At the same time, based on the international poverty threshold of USD 1.90 per day, the World Bank assessed the poverty level in the country as 4.7 percent and the number of poor people as 405 000 in total (World Bank, 2017a). The average household size in the country is 6.3 people; households in rural areas are characterized by the residence of several generations and families within a single household. Accordingly, the level of poverty in rural areas is higher than in urban areas (Table 17).

There is no difference in the absolute poverty rate between women and men (FAO, 2016a), but women-led households are considerably more at risk of extreme poverty. In 2009, 22.9 percent of surveyed female-headed households met the definition of extreme poverty, compared with only 16 percent of male-headed households (TajStat and UNICEF, 2009). Female-headed households tend to be smaller than male-headed households, but they are at greater risk of impoverishment because women have more limited access to higher-paid employment opportunities and have fewer working-age adults at home who can contribute to the household budget (FAO, 2016a).

It should be noted that poverty measurement is based on sample surveys of the "Living Standard of Population" (conducted in 2003, 2007 and 2009) and a household budget survey conducted in 2015. The following indicators are taken as the national basis for calculating poverty: 2.250 kcal per person per day, and non-food expenditures. According to the calculations for 2014, the poverty threshold is defined as the sum of SM 158.71 (USD 33.3) per person per month, with the food portion being SM 123.57 (USD 25.9) and the non-food portion being SM 35.14 (USD 7.4). The converted indicator per day is roughly equivalent to SM 5.217 (USD 1.10) per person per day. With adjustment for inflation, since the above indicator was based on the average of 2014, the national poverty threshold in 2015 was SM 5.383 (USD 1.13) per person per day (TajStat, 2015c).

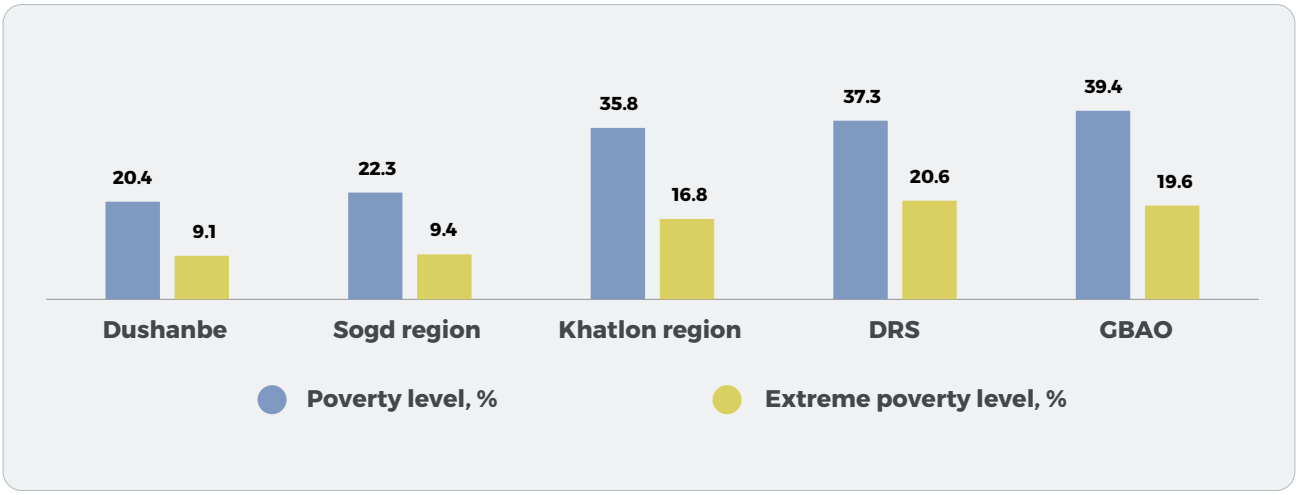
Table 17. Population national poverty indicators, 2003, 2007, 2009 and 2015

		Year							
		2003		2007		2009		2015	
		Poverty	Extreme poverty	Poverty	Extreme poverty	Poverty	Extreme poverty	Poverty	Extreme poverty
Population, millions of people	Countrywide	6.6		7.1		7.4		8.6	
	In urban	1.8		1.9		2.0		2.3	
	In rural	4.8		5.2		5.4		6.3	
Poverty headcount, %	Countrywide	72.4	41.5	53.5	17.1	46.7	13.8	31.3	15.2
	In urban	68.8	39.4	49.4	18.9	36.7	9.5	23.2	10.2
	In rural	73.8	42.3	55	16.4	50.8	15.6	35.2	17.5
Number of poor, millions of people	Countrywide	4.8	2.7	3.8	1.2	3.5	1.0	2.7	1.3
	In urban	1.2	2.6	0.9	1.3	0.7	0.7	0.5	0.9
	In rural	3.5	2.8	2.9	1.2	2.7	1.2	2.2	1.5
GNI per capita, USD		210		440		650		1 240	

SOURCE: TAJSTAT, 2016A.

The level of poverty also varies depending on the industrial development of the region. The poverty level in the country's capital is the lowest, which may also be due to the fact that the level of basic services provided in Dushanbe is higher (ADB, 2016b) (Figure 19).

Figure 19. National poverty indicators, by region, 2015



SOURCE: TAJSTAT, 2016A.

Remittances from migrant workers are one of the significant factors contributing to the reduction of poverty. It should be taken into account that remittances in households are mainly directed towards consumer spending, which implies a continued high dependence of households on remittances. There also is a close correlation between remittances and poverty levels. In fact, women abandoned by migrant husbands are considered to be some of the most economically and socially vulnerable women in the country (ADB, 2016b).

Rural population income. The income sources of the rural population include income from agricultural activities, wages, remittances of migrant workers, private business, pensions and social benefits. Income from agricultural activities is one of the important sources of income for the rural population. Private business, remittances, pensions and social benefits are the sources of non-agricultural income, which are necessary to protect against poor harvests or low prices for products.

The results of a study conducted by the World Bank and USAID in 2011 indicate that the average rural population has two sources of income. Households that receive income from two or more sources are better able to protect themselves from adverse effects in agriculture.

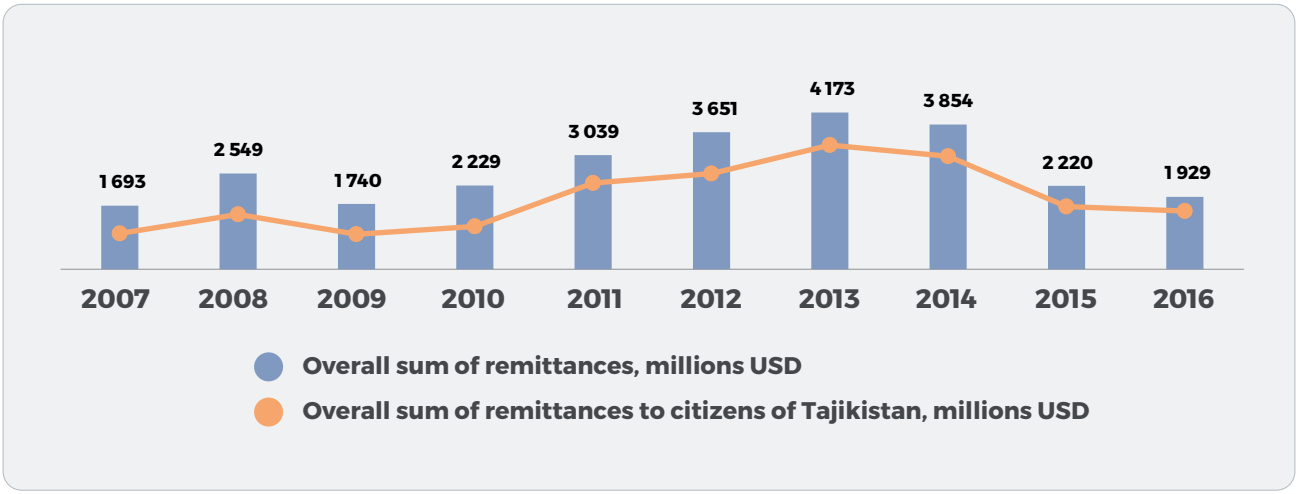
In 2011, the main sources of income for rural households were wages (58 percent), income from agricultural activities (49 percent), remittances (41 percent), pensions (33 percent) and private business (18 percent) (World Bank, 2012a). It should be noted that income from agricultural activities increased by 46 percentage points (from 3 percent in 2007 to 49 percent in 2011), and income from remittances decreased by 9 percentage points (from 50 percent in 2007 to 41 percent in 2011).

Migration. Mass labour migration causes a number of challenges. For example, migration provokes demand for labour in rural areas. Additionally, remittances of migrant workers are gradually becoming the main source of income for households; this displaces the necessity for rural residents to work on land. In a number of interviews, farmers noted that they use the land of dehkan farms from which

several men had left for migration. On the other hand, remittances of migrants do have positive effects, because they may serve as an additional source of financing for dehkan farms.

According to the Central Bank of the Russian Federation, about USD 1.9 billion was transferred from the Russian Federation to Tajikistan in 2016. From this amount, USD 1.5 billion was intended for citizens of Tajikistan (Central Bank of the Russian Federation, 2018). Unfortunately, there is no information on remittances sent to individual sectors, including the agricultural sector (Figure 20).

Figure 20. Remittances from the Russian Federation to Tajikistan, millions USD, 2007–2016



SOURCE: CENTRAL BANK OF THE RUSSIAN FEDERATION, 2018.

Currently, migration is more preferable than working in agriculture for men, especially for young ones. When this happens, the place of men in dehkan farms is filled by women and children. The lack of knowledge and experience of the remaining people in dehkan farms is one of the reasons for the decline in the profitability of dehkan farms and the possible subsequent transfer of land to the lease. And, according to Article No. 37 of the Land Code of Tajikistan, "for the non-use of a land plot for agricultural needs within the two years, the land will be taken from the owner."

The income grows and men do not leave for migration

"If there is an income-generating activity, then no one will go to labour migration. In one of the projects, we worked with lemons. We started in 2007 and, then, the yield was 15 kg from one tree. When we left in ten years, the harvest was then 75 kg from the tree. Accordingly, this income is different, and the relationship to land is different and migrants are less in the households."

Interview with a representative of HELVETAS

In fact, the impact of labour migration on men, women and their families is complex. Many migrant men contribute significantly to household well-being, but they are absent from their families and communities for long periods of time, and there is no evidence that they are able to return and re-enter the local labour market with new skills (FAO, 2016a). The increase in the number of *de facto* female-headed households because of male migration does not have a positive impact on women's empowerment, given that men continue to perform the role of the head of the household from abroad, and women suffer from increased workloads and limited access to

resources. As mentioned earlier, "abandoned wives" from migrant workers are among the most socially and economically vulnerable women in Tajikistan (FAO, 2016a).

Women, in the absence of men, continue to perform their usual work in smallholders and family farms, but they also take up additional responsibilities to replace migrated members of their households. However, this replacement is not translated into formal ownership of productive resources. For example, women continue to be excluded from the land certificates of dehkan farms (ADB, 2016a). The work that rural women perform as family members at their farms is not paid and not recognized as a job. In the end, all that women will receive is a minimum social pension, as officially they were not considered as formal workers and didn't contribute to pension funds. At the same time, the ratio of the minimum social pension to a contributory one is 60 percent. In other words, women who perform significant portions of the agricultural work and contribute to food security end up forming a majority of the poor.

Gender issues in employment. Due to the high level of labour migration, a significant part of the able-bodied rural population is made up of women. It should be noted that the issues related to the status of rural women and equality of opportunities are recognized as key priorities by the Government of Tajikistan; however, despite its efforts, there is much that needs to be done to address the gap between policies and their implementation to ensure that women enjoy, *de facto*, the same rights and opportunities as men (Government of Tajikistan, 2012).

Women in general are engaged in low-paid sectors of the economy – education, health and agriculture. Agriculture is a sector in which the level of informal employment is particularly high.

Unfortunately, state statistics do not provide accurate data on the level of informal employment in Tajikistan; therefore it is difficult to estimate the rates of male and female informal employment. However, experts estimate that the level of informal economy in Tajikistan is rather high.

As of 1 September 2017, the number of officially registered unemployed people was 50 400, with 58 percent being women (TajStat, 2017g). As for official data on those who are formally employed in the agricultural sector, the number of women in 2016 amounted to 247 700, which is 50 percent of the total employment in this sector (TajStat, 2016a). At the same time, the number of women among the able-bodied[25] rural population is 1.8 million. That is, approximately 1 million women in rural areas can be classified as informally employed.[26] Informally employed workers, including contributing family members in small holdings, and even formally registered unemployed persons, represent vulnerable categories of workers in rural and urban areas, as they are not covered by social protection and are at a higher level of social risk compared to other groups.

Most women who do not have formal contracts. They receive a mix of cash and in-kind payments (24 percent), or only in-kind (13 percent), according to the 2012 Demographic and Health Survey. Of substantial concern is the number of women who are unpaid workers. Out of those women who worked in agriculture at any time in the 12 months preceding the Demographic and Health Survey, 59 percent did not receive any payment for it.

The gender pay gap in agriculture widened from 2008 to 2013. While in 2008, women earned 65.4

[25] The lower limit of the active working age is 15 years, the upper limit is 57 years.

[26] Calculation provided by the authors based on the TajStat statistics.

percent of men's average salary in agriculture, in 2013 it was 57 percent (TajStat, 2014). Women's tasks are "largely restricted to field labour, such as weeding, sowing, transplanting, and harvesting, which do not require decision-making, whereas the selection of seeds, fertilizers, and plant protection materials is controlled by men" (USAID Enabling Agricultural Trade (EAT) Project / Fintrac Inc, 2014). Additionally, women's labour is highly seasonal, and during the winter months their income-earning opportunities are more limited (Oxfam, 2016).

Systemic barriers, such as persisting gender-based stereotypes and social practices that assign all domestic and care work to women, restrict rural women's access to formal employment, tertiary education and other resources, be they networks and/or decision-making.

> "The biggest problem is when a woman does not have access to land use. As a rule, the heads of dehkan farms are men. There is no description of the mechanism of alienation of the share of dehkan farm in the law. A woman, as a rule, is a shareholder. What should she do if she wants to be out? There must be a general meeting at which an alienation can be approved. And if the general meeting does not approve, then how to be? In general, how should the shareholder alienate? This is not given in the laws."
>
> *Interview with a representative of the Ministry of Justice*

Property and other resources. In Tajikistan, in accordance with social practices, families are patrilocal (that is, the family resides in the home of the husband's parents), and the property is usually transferred through the male line. A woman heading a dehkan farm is, as practice shows, more likely a situation caused by external circumstances. Researchers note that most often women head family farms, rather than collective ones (FAO, 2016a), which confirms the hypothesis that in connection with labour migration and the absence of a husband, a woman is forced to assume "transferred" functions.

Land certificates are most often registered only in the name of the male head of household as a social practice, and the fact that social taxes for dehkan farms are calculated as a fixed monthly fee for each shareholder on the certificate is a further disincentive to register wives or daughters-in-law as shareholders. Women and men also often lack information about women's rights to land as members of collective farms, and women face larger constraints (economic and social) when willing to register land on their names (FAO, 2016a).

As mentioned throughout the report, women also face significant barriers to accessing other agricultural inputs, information, transportation, irrigation, finance, networks and decision-making. This has a direct impact on dehkan farm productivity and agricultural development.

Access of rural population to services. Infrastructure challenges are a significant constraint to people's access to various kinds of services. Over the past 25 years, due to the underdevelopment of investments required for maintenance, a significant part of the transport infrastructure has been lost. The road network of the country has a length of 14 000 km, of which 29 percent are paved with asphalt and managed by the Ministry of Transport. Local rural roads account for 18 000 km and are managed by local authorities. In rural areas, there is almost no public transport (ADB, 2016b).

Despite the fact that Tajikistan has made significant progress in the modernization of information and communication technologies, the penetration rate of broadband Internet is 19 percent.

According to the results of the 2010 population and housing census, the majority of rural residents have access to various types of services. In all, 97 percent of rural residents have access to electricity, and 93 percent have access to a water supply (mainly pits, wells and other sources) (TajStat, 2012b).

At the same time, it should be noted that during the winter period, the evening blackout of electricity is almost all over the country, excluding the capital and the Gorno-Badakhshan Autonomous Oblast (the electricity supplier in this area is PamirEnergy). Annually, about 70 percent of the population of Tajikistan faces challenges in heating and cooking during the winter, due to the electricity shortages. Tajikistan has been facing severe winter energy shortages in recent years because of the following reasons: i) the Tajik power system was disconnected from the Central Asian power system at the end of 2009, which disabled electricity imports in winter, when the firm generation capacity of the country hydropower-based system falls short of demand; ii) gas imports, which used to be an important element of the country energy mix in winter, gradually declined and stopped altogether in 2012; iii) gas-based urban district heating systems virtually stopped operating and, as a result, electricity has become the preferred and often the only available heating source for buildings that used to be heated by district heating (World Bank, 2014c).

It is worth noting the progress made in the rural population's access to water supply. An example is the decrease in the share of the population using "surface waters," which was 33 percent in 2000 and 15 percent in 2016. At the moment, 36 percent of the population has access to pipeline water supply in rural areas (World Bank, 2017b).

The system of education in Tajikistan consists of preschool, secondary school (compulsory education is from grades one through nine, inclusively), specialized secondary schools (vocational schools and colleges), as well as universities. The coverage of preschool education is 8.6 percent (TajStat, 2016a) of the total number of children of the corresponding age. At the same time, institutions for preschool children are mainly concentrated in Dushanbe and regional centres. The absence of preschool facilities has important implications for child development, but it also serves as a primary factor in preventing women from working outside their homes. Compulsory education coverage (grades one through nine, inclusively) is 99 percent, and this is a very high figure (TajStat, 2016a) achieved by the country. Researchers note the need to focus on the quality of the education provided; gender disparity in education is a priority issue in Tajikistan, with girls' education declining from primary to tertiary levels (FAO, 2016a).[27] To increase rural population's access to medical services in independent Tajikistan, the system of primary health care is actively developing. In the village, the primary health services are Health Houses and Rural Health Centers. State expenditure on health is on the increase. In 2006, expenditures were 1.1 percent of the gross domestic product (GDP), while in the beginning of 2013, they were 2.1 percent of the GDP. Nevertheless, the funds allocated do not cover all the needs in the health sector. As a result, there are shortages of medical personnel and of quality services, especially in rural areas. High rates of infant and child mortality (ADB, 2016b) persist. Continued high rates of stunting, exhaustion and body deficit mean that continued work on food security is a necessity.

Summing up this section, a number of conclusions can be formulated. The rural population is the main part of the country's population, and employment in agriculture is the primary sector of income for them. The income that the population receives from activity in the agricultural sector does not cover all items of consumer spending, including expenditures on health care, education and more. Specialists trained by local universities are not interested in working in their own dehkan farms. The

[27] For more details, please see pp. 12–13.

non-profitability of the sector is a significant factor affecting labour migration, which mainly consists of men. Women more often head family farms, due to their husbands' departure to labour migration, but this does not necessarily imply women's empowerment, as they suffer from limited access to resources, limited employment opportunities, poor employment conditions, and significant work burdens. Poverty remains an urgent issue, especially in rural areas.

4. Current strategic political priorities for a sustainable and climate resilient agricultural and rural development

4.1 Political priorities for agriculture and rural development, including policies and focus areas targeting smallholders and family farms

4.1.1 National policy

The central executive authority responsible for developing and implementing a unified state policy in the field of agriculture is the Ministry of Agriculture of Tajikistan. In addition to the Ministry of Agriculture, there are various agencies operating in the republic that are to some extent related to agriculture, such as the Food Security Committee, the Agriculture and Environmental Protection Department of the Presidential Executive Office, the Ministry of Economic Development and Trade, TajStat, the Ministry of Energy and Water Resources, the Agency on Land Reclamation and Irrigation under the Government of Tajikistan, the Tajik Academy of Agricultural Sciences, the State Catering Center under the Ministry of Health, the national association of dehkan farms and agriculture cooperatives, and regional, district and local executive bodies of state power. As of the 29 December 2017 Decision of the Government of Tajikistan No. 595 (Government of Tajikistan, 2017), a new Food Security Committee under the Government of Tajikistan is being established as a central executive body performing special executive, controlling, permitting and other functions established in the field of veterinary, phytosanitary and plant quarantine, plant protection, seed production and breeding.

It should be noted that significant attention is paid to agriculture issues at the political and legislative level of independent Tajikistan. The starting point of the current stage of the agrarian reform can be considered the 1990s, when, as a result of a number of adopted political decisions, the process of land inventory was launched, agricultural producers were restructured, and land was distributed among farmers (Government of Tajikistan, 1992). These steps demonstrated a complete departure from the former Soviet concept of state agriculture, and it simultaneously meant the beginning of a long process of reform. The transition from one system with established institutional relationships has necessitated the formation of a qualitatively different one, in which the roles of each of the market actors and their interactions are defined, and access to finance and markets is provided.

The end of the process of agricultural land allocation is stated in the "Concept of the Agrarian Policy of Tajikistan" in 2008; it further outlines the need to shift the focus on market regulation, where the rural labourer is a free commodity producer and the state creates and guarantees the appropriate conditions for that. It is noted that the main agricultural producers are dehkan farms or associations created with truly voluntary participation, and the state acts as a guarantor in ensuring freedom to dehkan farms for the realization of their rights and interests (Government of Tajikistan, 2008). At the same time, there is a need to identify and develop mechanisms for interaction between all participants in the agrarian and industrial complex – the state, the private sector, non-governmental organizations, international and domestic investors, and donor organizations.

In 2016, the National Development Strategy of Tajikistan for the period until 2030 (NDS-2030) (Government of Tajikistan, 2016a) was approved. The NDS-2030, in terms of agriculture, is conceptually

interconnected with the NDS-2015, as well as with the Agricultural Reform Program of Tajikistan for 2012–2020 (ARP-2020) (Government of Tajikistan, 2012). One of the significant achievements of the NDS-2015 are: the resolution of the issue of dehkan farms' debt, the increase in the area of gardens and vineyards, and the improvement of the situation regarding ensuring the food security of the country's population.

The main goal of the NDS-2030 is the transition of the country's economy from agrarian-industrial to industrial-agrarian, assuming a gradual reduction in the share of the agricultural sector in the country's gross domestic product structure to 17–18 percent. Achievement of the set goals is possible in the case of solving the challenges, which would eliminate the limitations and obstacles hindering the development of the agricultural sector and of dehkan farms in particular:

- promotion of agrarian and water reform;
- ensuring the economic and physical accessibility of food products, based on the stable growth of the agro-industrial sector;
- diversification of agricultural production, including the introduction of innovations (taking into account the minimum impact on the environment and the quality of lands), development of measures to replace hazardous chemicals with less-hazardous alternatives, and increasing the attractiveness of the sector – especially for dehkan farms – through the formation and strengthening of value chains;
- increasing access to improved seeds and fertilizers in the domestic market and increasing agricultural production by motivating the use of new agricultural methods and technology;
- creating an effective system of risk management, monitoring of food security, and adequate nutrition (support for production and import of vital food products, organization of a food monitoring system, early warning, reserve stocks);
- promoting an effective multi-sectoral approach to improve nutrition through coordination of agricultural, health and social protection policies, and raising awareness of nutrition values and effective financing policies;
- forming a land and water resources management system based on equitable and sustainable distribution for the cultivation of valuable crops;
- Improving the sustainable functioning of the irrigation and drainage infrastructure maintenance and operation system, as the basis for the sustainable functioning of irrigated crop farming and food security, rural employment and poverty reduction in the field;
- restoring irrigation and drainage systems to improve the water availability of irrigated lands and improve the meliorative state of saline and waterlogged lands;
- improving economic mechanisms to cover the costs of maintaining and operating irrigation and drainage infrastructure in irrigated crop farming, improving the system of state subsidizing of electricity for machine irrigation, and reducing the negative impact of tariff policy in the irrigation and drainage sector on the efficiency of the industry;
- developing the agricultural market and overcoming barriers to provide direct access to the market for agricultural producers;
- addressing the transfer issues of former on-farm irrigation and drainage infrastructure to water users associations and strengthening government support for the development and sustainable operation of these water users associations; and
- implementing an effective system of state incentives for the development of new saline, swamped and unused irrigated lands and their return to agricultural production.

Particular attention should be paid to the fact that the strategy of the NDS-2030 envisages the concept

of regional development, drawing attention to the needs to develop infrastructure in the villages and create an enabling environment for life. The implementation of this group of tasks will ultimately increase the attractiveness of life and work in the villages for the young generation, taking into account gender aspect.

Conceptually, being an integral part of the above-mentioned strategy, the ARP-2020 aims to ensure high-yield and export-oriented agriculture to improve the living standards of the rural population, ensure food security and strengthen the position of agriculture in the regional division of labour, and develop productive and profitable agriculture based on rational use and sustainable management of natural resources. The programme document identifies 22 tasks, terms of implementation, identified executors, sources of funding, identified indicators and related results.

In general, the ARP-2020 aims to achieve two main national goals:

- conducting a common agricultural reform, including institutional reform, at the national and local levels; and
- developing productive and profitable agriculture based on rational use and sustainable management of natural resources.

The government recognizes that gender equality is essential for sustainable economic growth, and as such it is mainstreamed both into both the NDS-2030 and the ARP-2020. The ARP-2020 aims to promote gender equity "at every step of the reform" because the "success of agriculture reform will depend to a large extent on how the potential of women is realized and their rights are exercised" (Government of Tajikistan, 2012). Particular attention is given to equality in long-term land tenure, ensuring equal access to finance for farming, capacity development of women and men, and mitigating the effects of climate change on particularly vulnerable groups, such as female-headed households.

Sectoral Programmes

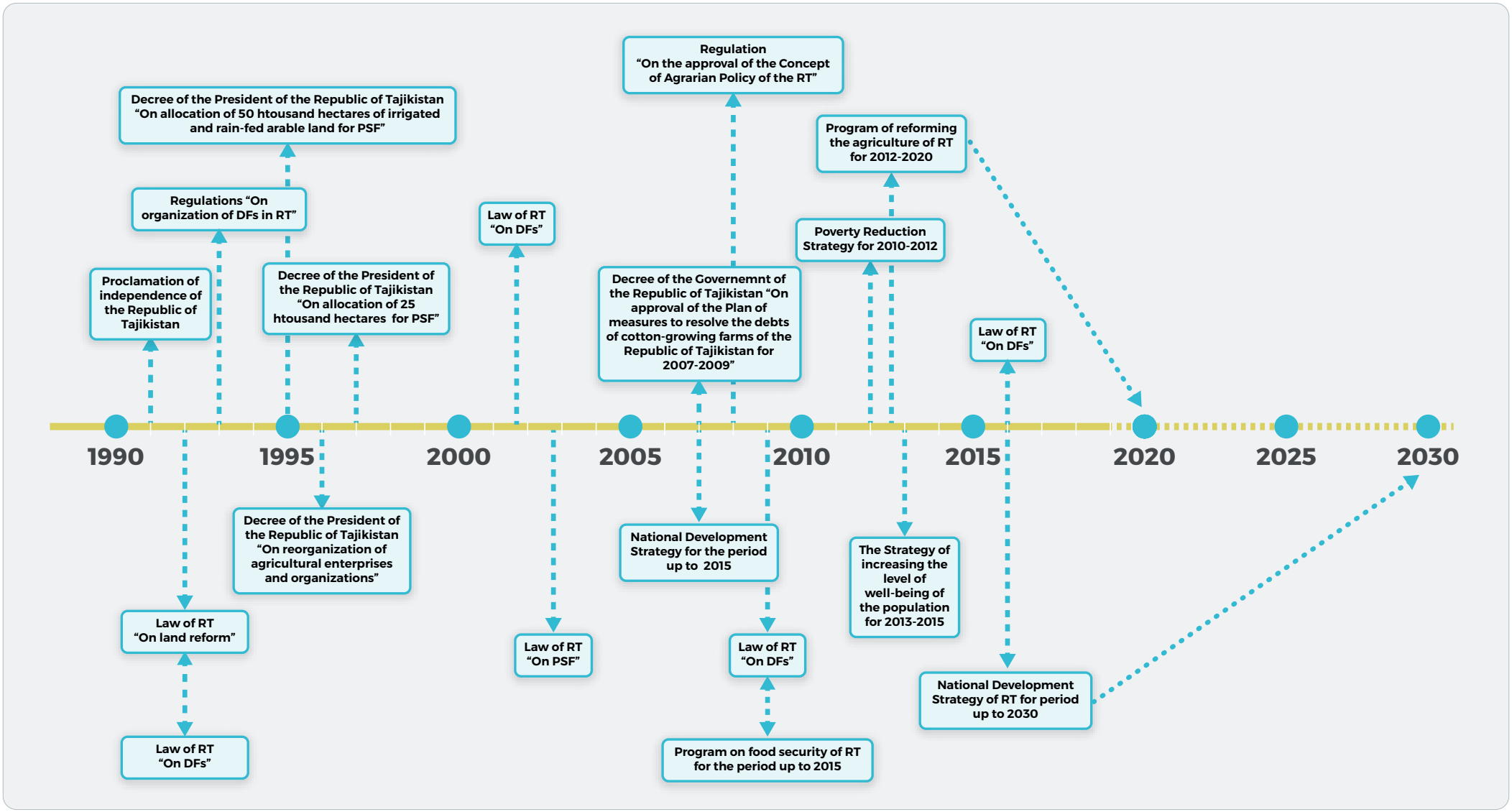
"We, as the Ministry, are conducting the agrarian policy of the country. We are developing sectoral programmes for which money is allocated from the budget. For example, we have a programme for the development of gardening; the programme on potato growing has ended. We purchased elite seeds for high-mountain areas and sent them to Tavildara, Muminabad, Baljuvan, etc."

Interview with representative of the Ministry of Agriculture

The Agricultural Reform Program is based on the Poverty Reduction Strategy for the period 2010–2012, the Strategy for Increasing the Level of Well-Being of the Population of Tajikistan for 2013–2015, the Food Security Program of Tajikistan for the period until 2015, and the Agrarian Policy Concept of Tajikistan. Therefore, as a common goal, it is necessary to implement reforms and solve the main challenges identified in the above-mentioned strategies and programmes.

It should be noted that other important documents in the national policy related to agriculture are: The Law "On Land Reform" (1992), the Law "On Dehkan Farms" (2009), The Law "On Food Security" (2009), the Strategy for Increasing the Level of Well-Being of the Population of Tajikistan for 2013–2015, and others. Picture 4 shows a number of documents demonstrating the measures taken by the Government to develop the agricultural sector.

Picture 4. Laws, decrees, resolutions, strategies and programmes in the field of agriculture



SOURCE: THE AUTHOR'S ELABORATION

Currently, the sectoral programmes are also being implemented, in which the role of dehkan farms is significant. The implementation of programmes is carried out at the expense of allocated budgetary funds, which make, according to preliminary data, about 50 percent of the budget allocated to the agricultural sector (Government of Tajikistan, 2013):

- the Development Programme of Horticulture and Viticulture in Tajikistan for 2016–2020;
- the State Programme for Export and Import Substitution in Tajikistan for 2016–2020; and
- the Programme for the Development of Silkworm Breeding and Processing Cocoons of the Silkworm in Tajikistan for 2012–2020.

It should be noted that the sectoral programmes also harmonize with the NDS-2030, being an integral part of the development strategy of the sector as a whole. The NDS-2030 specifies the need for activities to assess the effectiveness and forecast the development of the strategy, which involves three stages in order to achieve the set goals. For each stage, indicators, a plan of action, executors and terms are identified. The implementation of monitoring and evaluation activities will be financed from the state budget, and reporting on monitoring and evaluation results will be sent for discussion and approval to the National Development Council under the President of Tajikistan. One of the important sources on technical, consultative and programme issues is the support of development partners.

A significant factor affecting, among other things, the development of smallholders and family farms, is the current insignificance of public investment in agriculture. For 2015, the actual expenditures from the state budget for agriculture, including forestry and irrigation, amounted to SM 363.5 million (USD 68.5 million), or about 2 percent of the total expenditure of the budget. The allocation of this amount to the total number of dehkan farms and lands allows for the calculation of government expenditures amounting to SM 295 (USD 55.6) per farm and SM 56 (USD 10.6) per 1 ha.

4.1.2 Donor-funded programmes and projects related to smallholders

Since Tajikistan gained independence, the agricultural sector has received considerable support from various donor organizations and countries, such as: United Nations agencies, the World Bank, the Asian Development Bank, the United States Agency for International Development, the Aga Khan Development Network, the European Union, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, the International Fund for Agricultural Development, the Swiss Agency for Development and Cooperation, German Agro Action and others. In general, these organizations and countries are designated as development partners. Annually, two reports are published that provide profiles of each donor organization and detail their support for the development of Tajikistan, including agriculture (Government of Tajikistan, 2016d).

In 2015, their support to the agricultural sector amounted to USD 42.6 million, representing 7 percent of total investment. In 2015, 62 projects were implemented in the rural and irrigation sector, with development partners participating in 22 of those.

The following are the largest donors currently implementing projects in the agricultural sector:

- **The World Bank (WB)** is currently the largest donor funding and implementing projects in the

agricultural sector. Its funding includes both grants and credits. In general, over the past ten years, financial support for the agricultural sector from the World Bank has amounted to about USD 170 million. This support has been aimed at improving the productivity and sustainability of the sector; developing the value chain elements of agricultural products; restoring the irrigation system, including rehabilitating pumping systems; and building capacity among water users associations. Currently, seven projects with a total funding of about USD 90 million are being implemented in the country, including a new project on Rehabilitation of Irrigation and River Basin Management in Zarafshan. Of particular interest is the Agriculture Commercialization Project. The objective of this project is to support the commercialization of smallholders and agro-industrial products by improving the efficiency of individual value chains, increasing access to finance, and strengthening the capacity of smallholders, medium-sized agro-industrial enterprises and producer associations. The total amount of the project financing was USD 40 million, including additional financing. At the same time, additional financing will be used to expand the capacity of dehkan farms and enterprises in order to increase productivity and access to domestic and international markets.[28]

- Another major donor funding and implementing projects in the agricultural sector is the **International Fund for Agricultural Development (IFAD)**. Since 2008, IFAD has invested in three credit projects in Tajikistan for about USD 49.3 million, while the total funding reached USD 54.9 million, including USD 7.8 million in 2015. The main objective of IFAD in Tajikistan is to improve the living conditions of poor rural people by strengthening their local institutional structures and public organizations and facilitating access to productive technologies and resources. The current IFAD Country Programme is comprised of the first and second phases of the Livestock and Pasture Development Project implemented by the Ministry of Agriculture. The main goal of the project is to contribute to poverty reduction in the Khatlon oblast, improving the status of nutrition and income of poor households by increasing livestock productivity on a sustainable basis.[29]
- Other donors that finance the sector are the **European Union (EU)**, the **European Bank for Reconstruction and Development (EBRD)**, the **Asian Development Bank (ADB)**, **Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)** and the **United States Agency for International Development (USAID)**. In 2014, the European Union initiated the "Enhancing the competitiveness of agribusiness in Tajikistan (ECTAP)" programme in order to develop the agricultural sector in Tajikistan. The EU and the EBRD allotted about USD 50 million to the ECTAP project to help reduce poverty and improve economic growth by optimizing the value chain of the agrifood industry in Tajikistan in addition to agro-industrial enterprises and the quality and marketing of agricultural products. The project aims to increase the development of value chains in agriculture in such agriculture sectors as dairy products, fruits and vegetables by facilitating access to new agricultural machinery and technologies, as well as access to financial resources, thus contributing to poverty reduction in the country.[30]
- The **Asian Development Bank** has been cooperating with Tajikistan since 1998. ADB's activities benefit the population by reducing isolation, increasing communication, improving access to electricity and more efficient social services, and creating economically viable opportunities. In 2016, ADB approved financial assistance of USD 30 million, including a USD-5-million grant and technical assistance from the Japan Poverty Reduction Fund to improve agricultural productivity and food security through improved water resource management in the Pyanj River Basin in Tajikistan.[31]

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28 Information about project available at: https://bit.ly/2unUZY7

29 Information about project available at: https://bit.ly/2LdD2ll

30 Information about project available at: http://ectap.org/

31 Information about project available at: https://bit.ly/2JjHFsh

- Through various programs and initiatives, the **United States Agency for International Development** has provided about USD 100 million to Tajikistan for the development of the agricultural sector. Currently, USAID is implementing various programmes under the "Feed the Future" initiative. [32] This initiative is a five-year food security programme aimed at the sustainable increase in income and nutritional status of more than 38 000 households (more than 200 000 people) in 12 target areas in the west of the Khatlon oblast, as well as in improving nutrition knowledge and the availability and quality of family food. In addition, the "Feed the Future" initiative in Tajikistan aims to promote and introduce healthy lifestyles in order to clarify the obvious and hidden causes of malnutrition and contribute to improving maternal and child health. To achieve these goals, the initiative aims to provide assistance to families and small businesses to increase their incomes and produce food for domestic consumption. This programme's goals are to improve nutrition and healthy lifestyles, build the capacity of local institutions and rural community groups, and provide technical assistance to the Government of Tajikistan to implement effective agricultural reform in Tajikistan in the land reclamation and land use sector. Today, in Tajikistan, the following projects on agriculture for the total amount of about USD 40 million are implemented: The Agriculture and Water Project, the Land Market Development Project, and the Women's Entrepreneurship for Women's Empowerment Project. One of the main objectives of these projects, along with the initiative as a whole, is to assist smallholders in gaining profits from trade and expanding their activities.

In addition to the above-mentioned organizations, since 2008, more than 20 other organizations have been actively involved in issues of agriculture and food security (Knoot, L, 2008). For example, GIZ has been implementing projects and programmes in Tajikistan since 2009, including projects on biodiversity and ecosystem services in agrarian landscapes, ecosystem-based adaptation to climate change in high mountainous regions of Central Asia, adaptation to climate change through sustainable forest management, strengthening of livelihoods through climate change adaptation, sustainable use of natural resources, and transboundary water management in Central Asia. These projects and programmes are directed to rural development, sustainable infrastructure, environment and climate change.[33]

The Sustainable Development Goals 2015–2030 (SDGs) define the direction of cooperation between development partners and the Government of the country at the moment. The SDGs contain 17 global development goals.

It should be noted that, in some areas, the SDGs coincide with the NDS-2030. Namely, in achieving food security and improving nutrition by promoting the sustainability of agriculture. We note a number of other directions of the SDG that should be achieved by 2030 and are relevant for Tajikistan and are reflected in the NDS-2030:

(i) Double the agricultural productivity and the incomes of small-scale food producers, particularly women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets, and opportunities for value addition and non-farm employment.
(ii) Ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production; that help maintain ecosystems; that strengthen capacity for

[32] Information about project available at: https://bit.ly/2unVXnd

[33] Information about GIZ programmes available at: https://bit.ly/2zwaoll

adaptation to climate change, extreme weather, drought, flooding and other disasters; and that progressively improve land and soil quality.

(iii) Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development, and plant and livestock gene banks to enhance agricultural productive capacity in developing countries, in particular in least developed countries.

(iv) Adopt measures to ensure the proper functioning of food commodity markets and their derivatives, and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility.[34]

4.1.3 FAO Country Programming Framework

Cooperation between Tajikistan and FAO has been ongoing since the country joined the Organization in 1995. FAO assistance was initially provided in the form of short-term emergency interventions in response to a locust outbreak and also to help the transition to stability after a period of civil war. More recently, cooperation has focused on rehabilitation and development interventions to build a sustainable agriculture sector and ensure food and nutrition security.[35]

At the moment, it is significant that the FAO programme activities are closely linked to national strategic documents, including the NDS-2030, the Food Security Programme, and Strategy for Increasing the Level of Well-Being of the Population of Tajikistan for 2013–2015.

In the Agricultural Reform Programme approved in Tajikistan for 2012–2020, FAO assists in the following areas:

- improvement of national food security and nutrition security;
- sustainable management of natural resources and increased resilience to climate change; and
- sustainable agricultural productivity and competitiveness.

In the framework of this report, it should be noted that at the regional FAO conference held in Bucharest in April 2014, it was noted that one of the areas requiring attention in the countries of Europe and Central Asia is assistance in the development of policies for smallholders. Also, two FAO initiatives were announced for Europe and Central Asia countries, including Tajikistan: empowering smallholders and family farms and promotion of agrifood trade and market integration.

[34] Network of solutions for sustainable development, 2015. Indicators and structure of monitoring for the Sustainable Development Goals

[35] Information about FAO activities available at: http://www.fao.org/3/a-av025e.pdf

5. Conclusions and recommendations

5.1 Conclusions

5.1.1 Role and weight in the economy of smallholders and family farms

As a result of a number of adopted political decisions that began in the 1990s, more than 170 000 dehkan farms have been created in Tajikistan. Over the past ten years, their role has been significantly strengthened in the agricultural sector and in the economy as a whole. At the moment, dehkan farms provide 7 percent of the country's gross domestic product.

Along with dehkan farms, other direct producers of agricultural products are private subsidiary farms and other agricultural enterprises. In the production structure, the cumulative share of dehkan farms and private subsidiary farms in 2016 was 95 percent – 34 percent dehkan farms and 61 percent private subsidiary farms. The remaining 5 percent of agricultural products are produced by other agricultural enterprises.

Analysis of the distribution by individual branches of agriculture shows that dehkan farms most often produce products of the plant sector. The main products produced by dehkan farms are cereals and legumes, cotton, potatoes, vegetables and cucurbits. Cotton, in turn, is the main agricultural product produced by dehkan farms and exported outside of the country. In general, the volume of agricultural production increases year by year.

More than a third of the land from the total number of land reserves is assigned to dehkan farms. If agricultural land is taken provisionally as 100 percent, then dehkan farms occupy 70–75 percent of them. Of the dehkan farms, which account for three quarters of the land, more than half are smallholders and family farms.

According to various sources, the average size of the land area of smallholders and family farms is no more than 2 ha.

Dehkan farms are more market-oriented and focused on the sale of produced agricultural products. Practice shows that private subsidiary farms produce for both own consumption and for sale. Taking into account the fact that dehkan farms and private subsidiary farms make a significant part of agricultural output, they significantly reduce the burden on the state to address the issue of food security by contributing to its provision, thereby reducing poverty in rural areas, where poverty rates are higher than in urban areas. In general, the overall poverty level in rural areas of Tajikistan in 2015 decreased to 35 percent, while the extreme poverty level fell to 18 percent. If we consider the fact that the majority of the country's population lives in rural areas, it clears up how agricultural activities through such forms of employment as dehkan farms and private subsidiary farms can reduce poverty through self-employment.

5.1.2 Definition of smallholders and family farms

To date, there is no single official agreed-upon definition of smallholders in Tajikistan, and there are no clear indicators for the definition of both smallholders and family farms. The current situation, with the absence of a clear and shared conceptual apparatus, causes differences in approach to the definition of these farms, applied in the law and by various stakeholders (ministries and agencies, international organizations). All existing dehkan farms (smallholders, family farms, collective farms, individual farms) are considered homogeneously in statistics.

In connection with family farms, there are discussions about private subsidiary farms, which can also be considered as a kind of family farm. The establishment of these farms is associated with a high concentration of the population in rural areas and the need to address the issue of food security at the country level.

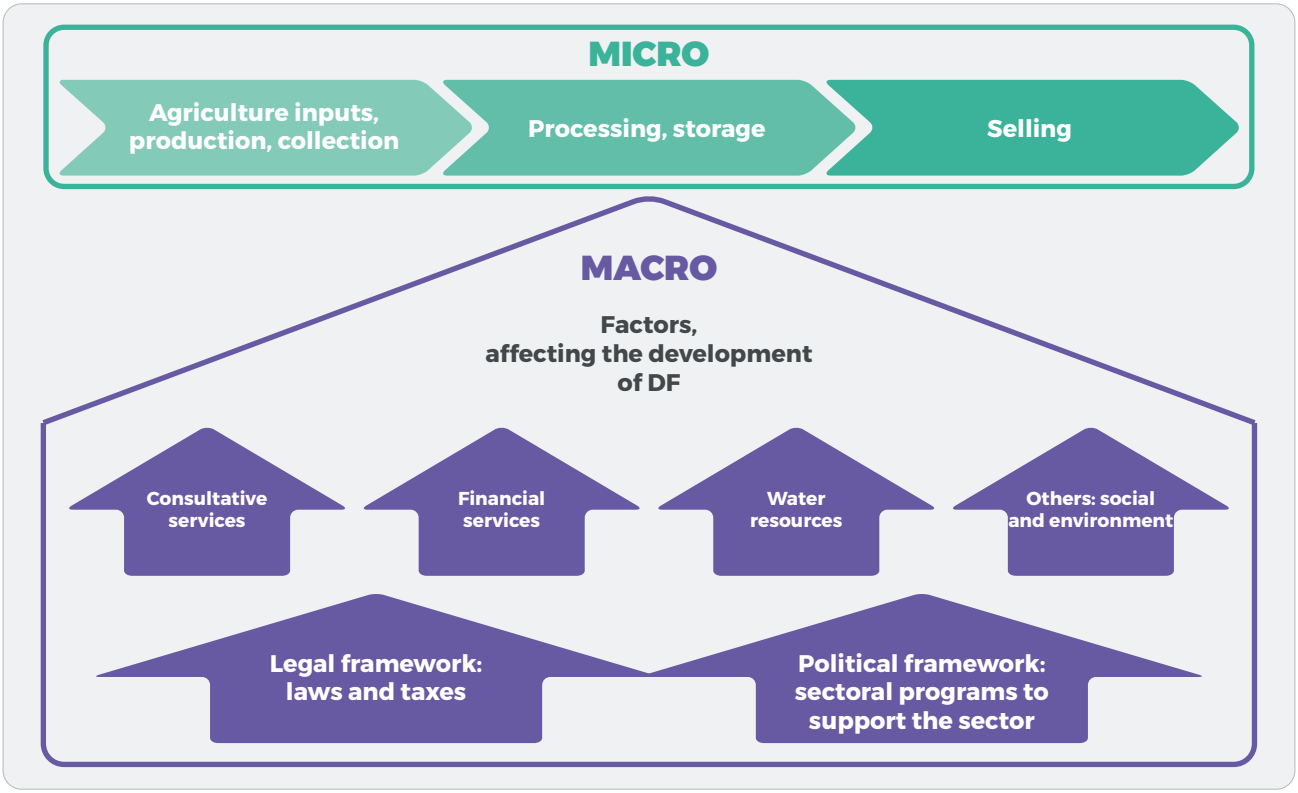
The practice shows that smallholders can be family farms. To determine smallholders, almost all stakeholders use land area as an indicator. For the definition of family farms, the following indicators are more often used: "belonging of the farm to the same household" and "using family members as labour resources." Data on specific types of dehkan farms are not available in the statistics, but there are generalized data. Family farms can be small, medium and large farms, since they can include up to 50 shareholders (the size of one share ranges from 0.06 ha to 0.40 ha, depending on the type of land).

5.1.3 Needs, challenges, constraints for smallholders and family farms, including national policy

Transition to new types of economic relations and creation of new types of farms have led to a complete change in the agriculture sector. On one hand, this situation has a positive effect, as the burden on the state to address the issue of food security is reduced. On the other hand, this situation has a negative effect, as the transfer of land and other resources into the hands of dehkan farms has caused the emergence of various challenges. Namely, large farms (collective and state farms) possessed the considerable potential of infrastructure – including industrial buildings, agricultural machinery, equipment for social and domestic purposes, an extensive network of irrigation and drainage networks, and roads and power lines, among other things. In addition, state enterprises provided the necessary construction services to these farms, both at the expense of the state and at the expense of the farms themselves. Currently, these farms are liquidated, and their successors are not defined. Dehkan farms could not be legal successors, as they were not legal entities and did not have the financial ability to accept these objects on their balance sheets and maintain them in working order. All these key assets, in accordance with the law, were to be transferred to the relevant ministries and departments, and the social institutions were to be transferred to the local administration and *jamoats* (local administrative divisions), but these activities have not been implemented for various reasons.

The goal of this study is to identify the needs, challenges and constraints that affect the economic, social and environmental state of dehkan farms, along with their development. It should be noted that these needs, challenges and constraints largely interact and are interrelated, which makes it difficult to determine the specific cause-effect relationships. In this regard, the data obtained during the study were grouped and distributed by the main categories. In turn, the discussion with various stakeholders allowed the main categories to be divided into several levels (Picture 5).

Picture 5. Activity of dehkan farms and external factors affecting their development



SOURCE: THE AUTHORS' ELABORATION

The challenges and constraints collected during the study were divided into those that are: a) directly related to the activities of farmers, which they can influence; and b) factors that farmers cannot influence but that can have negative or positive impacts on the development of dehkan farms.

The first group includes the problems faced by farmers at the stages of production, storage and sale of products. Based on the identified challenges, the needs of farmers were identified.

The second group includes constraints that act as deterrent barriers to the development of dehkan farms:

- There is a lack of a widespread system of advisory services on the market that would allow for the filling of gaps in knowledge and skills of farmers.
- Expensive credits make financial services unavailable.
- Irrigation systems have a great deal of wear and tear, and there is a lack of a clearly defined system of interaction between dehkan farms and water user associations, on one side, and the local Agency for Land Reclamation and Irrigation under the Government of Tajikistan, on the other side, which leads to limited access to water resources.
- Because of massive male migration, women are increasingly becoming de jure and (more commonly) de facto heads of farms. Persisting gender-based inequalities that keep women in lower status in society – with limited access to knowledge, resources, decision-making and networks, and with a significant pay gap – have direct impacts on the productivity of dehkan farms and private subsidiary farms and, as a result, on food security and agricultural development.
- Climate change causes an increased risk to farmers, where the responsibility is entirely imposed on dehkan farms, demotivating agricultural producers.

- In the case of availability of opportunities for expanding dehkan farms, the farms' readiness to cover the processing along with production and taxes will act as a deterrent barrier.

Climate change already has an impact on dehkan farms and on the agricultural sector in general. For example, winters with no frost, a lack of snow in winter, late sudden frosts in the spring, and hot summer months affect existing farming practices, the changing of which requires additional production costs. In addition, the intensity of dangerous hydro-meteorological phenomena – such as drought, hail, early or late frost, spring floods and landslides – also grows. The lack of financial resources limits the ability of dehkan farms to invest in sustainable agricultural practices, and as a result, the growing impact of climate change will be more severe for dehkan farms than for others.

It should be noted that in the country, there is almost no system of agricultural insurance. Currently, dehkan farms have no protection and bear the risks associated with climate change, which increases the vulnerability of their activities. In the event of climate hazards and adverse weather events, dehkan farms that have been harmed receive, as the only type of assistance, state aid in the form of small subsidies for agricultural inputs or temporary suspension of taxes (Government of Tajikistan, 2012).

Another constraint to the development of dehkan farms is the deterioration of irrigation infrastructures and access to irrigation. Due to the relatively dry climate and mountainous terrain, a significant part of the land (90 percent) is served by irrigation infrastructures that were built during the Soviet period and now need major repairs. Until the early 1990s, the system as a whole maintained a normal melioration regime for irrigated land. But a sharp decline in funding for cleaning and repair works, as well as the lack of an appropriate agro-technical approach when using saline lands and a violation of irrigation regimes, led to an unsatisfactory melioration state in more than 50 000 ha of land (Buzrukov, J, 2012). The infrastructure challenges lead mainly to a lack of water for irrigation.

In addition, dehkan farms suffer from the effects of rising groundwater levels and salinization of the soil. Waterlogging and soil fertility declines due to inefficient irrigation lead to decreases in yield and undermine the productivity of agricultural land, which, in turn, contributes to increases in poverty. Water resources in rural areas are managed by water users associations. Water users associations should ensure equitable use of water (which is an important issue in drought risk zones), collect fees from the users, and play an important role in resolving disputes over water resources (FAO, 2016a). However, as practice shows, all their work mostly comes down to the collection of payments for water, for the services of the Agency on Land Reclamation and Irrigation under the Government of Tajikistan for the supply of irrigation water. The challenges of water-use efficiency in agriculture will remain extremely important in the future.

Tax Code

"The simplified taxation regime for agricultural producers is a special tax regime for business entities that produce agricultural products without further processing."

Part 4, article 298 TC RT

Agriculture is one of the most important sources of tax revenues; it currently accounts for about 35 percent of the total tax revenue. This means that agriculture is one of the main sources of funding for other socio-economic sectors of the economy of Tajikistan. At the same time, analysis of statistical data shows that no more than 2 percent of the total budget expenditure is allocated for the development and solution of sector problems.

To date, agriculture is subject to three main taxes: a) tax on the export of cotton fiber[36], b) a unified agricultural tax, levied depending on the characteristics of the land; and c) payment for water use on irrigated land (World Bank, 2012b).

The current tax policy does not contribute to the further growth of dehkan farms; rather, it acts as a constraint. According to Article 6 of the Tax Code, a single tax is established for producers of agricultural products. In case the farm expands its activities, adding storage and processing, the dehkan farm will additionally pay other taxes or switch to the general taxation system (FAO, 2017).

Taxes constrain

"We could have processing, but then we will pay more taxes. We have already been consulted on this topic."

Interview with farmers

An analysis of the developed and adopted strategic and policy documents of the national agricultural policy, in particular the Agricultural Reform Programme of Tajikistan for 2012–2020, showed that the Government and the Ministry of Agriculture are aware of all the challenges and constraints associated with the development of the agricultural sector, including the dehkan farms identified in this study. But due to low financing of the sector from the state budget, such tasks as achieving financial stability or creating a national insurance system for the agricultural sector have not been fulfilled to this day. At the same time, it is worth noting that most of the planned reforms are implemented with the support of development partners.

It should be noted that not all the dehkan farms understand the role and responsibilities of local executive bodies of state power in relation to them. And the role of local executive bodies of state power is very important in ensuring adequate and timely dissemination of information, supporting local development and alleviating the socio-economic burden, as well as timely response to challenges in the village.

In addition, it should be noted that according to the updated Law of 2016, local executive bodies of state power should support dehkan farms:

- on access to technology and modern agricultural technologies, and the purchase of quality seeds of plants and types of breeding livestocks;
- on the implementation of measures to protect the domestic agricultural market;
- on attraction of domestic and foreign investment in agricultural production;
- on the development and presentation of recommendations on the use of agro-technologies and innovative achievements;
- on the formation of economic market relations and the introduction of an effective mechanism for financial support; and
- on the provision of information on the volume of production and prices of agricultural products in the domestic and foreign markets.

[36] The export tax on cotton fiber (10 percent) is charged to the price of cotton fiber on the terms of ex works (FOB) and is paid by exporters. The average annual income from this tax is about USD 15 million.

5.2 Recommendations

Based on the results and conclusions of the research, a number of recommendations were developed:

1. **Develop a single official definition with specific indicators for smallholders and family farms.** Specific statistical data, the collection of which will be carried out on the basis of clear and understandable indicators, will provide specific information on the size of small and family dehkan farms. Further, the information obtained can form the basis for the development of targeted programmes to promote the development of small and family dehkan farms. TajStat and the State Committee for Land Management and Geodesy can be responsible for discussion and introduction of a single concept with specific indicators.
2. **Strengthen the quality control system for seeds, pesticides and fertilizers imported into the country**. In this direction, a coalition of the state and the private sector can be created, in which the state has a regulative role. On the basis of the private sector, a dealer network can be created on a competitive basis to provide the market with quality seeds, pesticides and fertilizers. Increasing awareness and confidence of farmers in seeds, fertilizers and pesticides can be organized through the creation of demonstration agro-sites that can function both in research institutes (such as the Tajik Academy of Agricultural Sciences and the Tajik Agrarian University named after Sh. Shotemur) and in the dealer networks.
3. **Improve information to women and men farmers.** A review of existing loan products offered by financial institutions showed that products are available that take into account the seasonality of the business, which is important for the farmer, but some farmers are not aware of this. Women are the ones who are less likely to receive this information. The recommendation may be to increase women and men farmers' awareness through the financial institutions themselves.
4. **Lower the annual interest rate to 15 percent in national currency.** At the same time, loans are indeed expensive, which makes them practically inaccessible to smallholders and family farms. Lowering the annual interest rate to 15 percent in national currency will allow farmers to solve financial problems in a timely manner. It should be considered that loans received by commercial banks of Tajikistan from external sources are expensive. Based on the results of the hand-over workshop,[37] it is recommended to consider the possibility of communication with investment funds to attract and obtain low-cost loans by commercial banks of Tajikistan for the agricultural sector.
5. **Create an insurance product for agricultural activities.** This would allow, to a certain extent, the minimization of farmers' risks associated with such issues as climate change, land erosion, devastation, depletion and waterlogging (increased groundwater), low yields, floods, drought, locust attacks and sudden frosts.
6. **Improve knowledge and skills for women and men.** The needs for knowledge and skills can be overcome through several options. Short courses for training on specific topics can be created on the basis of the existing Adult Education Center and National Association of Dekhkan Farms representatives in the regions.[38] One of the options may be to facilitate the exchange of experiences among farmers of different regions. Successful examples of this options are the projects Gendered Enterprise and Markets Program and AgroMarkets Program, implemented by Oxfam and

[37] On 26 October 2018, a workshop was held in Dushanbe with main stakeholders, such as representatives of the Ministry of Agriculture, the National Bank of Tajikistan, the National Association of Dehkan Farms, international donor organizations, etc. In total, six people participated.

[38] The National Association of Dehkan Farms unites 109 associations of dehkan farms throughout the country.

HELVETAS, respectively. Of particular relevance is increasing women's access to knowledge and skills so that the gender knowledge gap can be reduced and the economic opportunities of women increased.

7. **Improve communication between farmers and consumers.** The establishment of a sustainable link between the wholesale buyer/supermarket and the manufacturer would allow farmers to resolve issues with the sale of products. The cooperation of farmers to produce products of a single breed and size would increase the attractiveness of products in the domestic and foreign markets and directly increase the income of the farmer. The basic condition is the establishment of cooperatives that unify the dehkan farms. Since the cooperative is a legal entity, higher taxes can become a barrier. The Ministry of Agriculture can promote the idea of tax incentives for cooperatives at the state level and may establish incentives and other measures for increasing women's access to and benefit from cooperative membership.
8. **Establish support services for dehkan farms and private subsidiary farms at the local executive body of state power level.** This would require the development of clear objectives and strengthening the technical and institutional capacity of the recruited staff in the local executive body of state power on agricultural issues. However, there is a risk of trained local executive body of state power staff loss. In the future, having used the skills of its specialists and with the support of private sector and non-governmental organizations, the Ministry of Agriculture should contribute to local executive bodies of state power the provision of information and consultation to dehkan farms and private subsidiary farms.
9. **Create advisory and information Web platform**. A single, publicly available advisory and information Web platform that accumulates modern approaches and knowledge could be a means of improving the skills of specialized local experts and students through online training. Furthermore, consultants, local experts and students could apply their knowledge at the training courses of the school, adult education centre or National Association of Dekhkan Farms on a paid basis. This platform would also allow farmers to increase their knowledge on modern agriculture issues. The Web platform could be placed on the websites of the Ministry of Agriculture or the Tajik Academy of Agricultural Sciences.
10. **Develop specific measures for women's economic and social empowerment**, in line with the Agricultural Reform Program of Tajikistan for 2012–2020, to contribute to closing the gender gap in dehkan farm and private subsidiary farm management.
11. **Simplify the taxation regime.** Remove the phrase "without further processing" from Article 298 "General Provisions" of Chapter 44 "Simplified taxation regime for producers of agricultural products (single tax)."

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6. Annex

6.1 Tables

Table A1.1. Main types of products of the horticulture sector produced, by dehkan farms and private subsidiary farms, 2005–2016

Year	Type	Grain and legume	Cotton	Potato	Vegetable	Melon and gourd
				production, tonnes		
2005	TOTAL, including agricultural enterprises	934 880	447 918	555 125	718 475	170 230
	dehkan farms	291 928	220 739	136 651	138 272	56 947
	private subsidiary farms	467 326	0	390 340	493 317	88 975
2006	TOTAL, including agricultural enterprises	912 280	437 918	573 687	759 737	218 153
	dehkan farms	328 984	245 199	149 195	168 562	71 913
	private subsidiary farms	436 976	0	398 458	499 107	119 664
2007	TOTAL, including agricultural enterprises	931 204	419 786	662 093	835 131	254 170
	dehkan farms	368 728	262 092	175 984	197 672	97 519
	private subsidiary farms	434 571	0	458 879	554 951	130 360
2008	TOTAL, including agricultural enterprises	942 894	353 146	679 774	908 225	285 253
	dehkan farms	390 363	245 023	184 148	208 432	117 503
	private subsidiary farms	439 385	0	470 733	635 152	138 917
2009	TOTAL, including agricultural enterprises	1 294 522	296 015	690 853	1 046 859	424 579
	dehkan farms	666 823	223 790	198 462	293 368	254 836
	private subsidiary farms	454 515	0	463 965	674 822	126 291
2010	TOTAL, including agricultural enterprises	1 261 059	310 560	760 139	1 142 624	482 393
	dehkan farms	635 333	232 784	214 934	347 275	302 465
	private subsidiary farms	471 719	0	495 180	719 515	132 004
2011	TOTAL, including agricultural enterprises	1 098 182	416 490	863 069	1 242 026	423 323
	dehkan farms	529 108	322 388	273 527	389 872	247 914
	private subsidiary farms	459 878	0	528 377	772 869	143 294
2012	TOTAL, including agricultural enterprises	1 232 591	417 978	991 044	1 342 352	465 039
	dehkan farms	613 383	333 968	387 790	443 843	277 124
	private subsidiary farms	486 043	0	536 489	815 579	154 720
2013	TOTAL, including agricultural enterprises	1 392 644	392 812	1 115 696	1 490 650	495 263
	dehkan farms	746 028	326 325	444 249	520 748	288 792
	private subsidiary farms	482 679	0	596 854	876 095	172 687
2014	TOTAL, including agricultural enterprises	1 317 821	372 656	853 739	1 549 481	545 691
	dehkan farms	742 260	311 967	343 450	625 940	353 678
	private subsidiary farms	422 770	0	418 559	828 460	49 679
2015	TOTAL, including agricultural enterprises	1 392 581	270 047	887 418	1 666 573	592 435
	dehkan farms	832 832	224 935	428 799	750 115	430 155
	private subsidiary farms	405 766	0	386 826	817 296	128 189

Year	Type	Grain and legume	Cotton	Potato	Vegetable	Melon and gourd
		production, tonnes				
2016	TOTAL, including agricultural enterprises	1 435 810	284 708	898 116	1 748 282	594 170
	dehkan farms	865 167	233 369	446 336	827 572	434 067
	private subsidiary farms	424 784	0	386 316	832 737	130 386

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

Table A1.2. Main products of the livestock sector produced by dehkan farms and private subsidiary farms, 2005–2016

Year	Type	Meat production (live weight), tonnes	Milk production, tonnes	Egg production, thousands of pieces	Wool production, tonnes	Silk cocoon production, tonnes	Honey production, tonnes
2005	TOTAL, including agricultural enterprises	107 442	533 030	98 670	4 353	3 246	1 520
	dehkan farms	2 719	13 549	675	208	-	31
	private subsidiary farms	97 463	484 069	61 015	3 361	-	1 467
2006	TOTAL, including agricultural enterprises	112 293	544 668	105 320	4 754	3 030	1 686
	dehkan farms	3 275	16 375	853	284	-	60
	private subsidiary farms	102 030	498 033	65 076	3 737	-	1 590
2007	TOTAL, including agricultural enterprises	118 990	583 636	111 233	5 063	2 343	1 975
	dehkan farms	3 954	16 651	982	317	-	85
	private subsidiary farms	108 659	540 764	74 365	4 029	-	1 833
2008	TOTAL, including agricultural enterprises	129 791	601 011	151 016	5 178	2 749	2 060
	dehkan farms	4 471	19 390	6 084	386	-	131
	private subsidiary farms	119 599	560 221	79 069	4 141	-	1 881
2009	TOTAL, including agricultural enterprises	134 350	629 708	188 515	5 434	1 850	2 704
	dehkan farms	4 808	24 246	6 135	463	-	280
	private subsidiary farms	124 282	588 505	84 044	4 410	-	2 363
2010	TOTAL, including agricultural enterprises	143 213	660 763	231 924	5 771	1 080	2 972
	dehkan farms	4 829	25 844	4 237	566	-	179
	private subsidiary farms	133 340	619 373	90 877	4 706	-	2 722
2011	TOTAL, including agricultural enterprises	150 764	695 892	254 694	6 027	1 263	2 936
	dehkan farms	5 556	27 597	6 304	634	-	151
	private subsidiary farms	140 450	653 885	96 966	4 955	-	2 705
2012	TOTAL, including agricultural enterprises	161 999	778 295	291 633	6 361	1 328	3 290
	dehkan farms	6 031	29 244	2 970	705	-	228
	private subsidiary farms	151 007	735 928	104 725	5 256	-	2 979
2013	TOTAL, including agricultural enterprises	172 988	828 179	343 729	6 565	1 569	3 511
	dehkan farms	6 895	30 083	5 640	690	-	243
	private subsidiary farms	161 959	784 188	112 593	5 518	-	3 174

Year	Type	Meat production (live weight), tonnes	Milk production, tonnes	Egg production, thousands of pieces	Wool production, tonnes	Silk cocoon production, tonnes	Honey production, tonnes
2014	TOTAL, including agricultural enterprises	198 753	854 737	350 045	6 776	1 097	3 715
	dehkan farms	7 090	30 936	6 439	792	-	257
	private subsidiary farms	187 439	807 369	120 661	5 575	-	3 362
2015	TOTAL, including agricultural enterprises	217 701	888 960	357 241	7 033	835	3 853
	dehkan farms	7 418	32 940	4 874	853	-	245
	private subsidiary farms	206 120	840 107	126 677	5 813	-	2 512
2016	TOTAL, including agricultural enterprises	233 329	917 990	337 153	7 304	869	3 996
	dehkan farms	8 169	33 987	7 744	964	-	248
	private subsidiary farms	221 412	867 851	155 761	6 013	-	3 650

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

Table A1.3. Regional distribution of agricultural production, 2005–2016

Year	Type	Meat production, live weight, tonnes				Milk production, tonnes			
		GBAO	Sogd	Khatlon	DRS	GBAO	Sogd	Khatlon	DRS
2005	TOTAL, including agricultural enterprises	6 093	28 153	48 656	24 540	12 769	192 775	212 042	115 444
	dehkan farms	200	679	1 007	833	35	5 114	5 037	3 363
	private subsidiary farms	5 857	25 746	43 631	22 229	12 727	167 842	197 924	105 576
2006	TOTAL, including agricultural enterprises	6 295	28 504	51 587	25 907	13 044	194 611	218 351	118 662
	dehkan farms	222	850	1 406	797	37	6 483	6 107	3 748
	private subsidiary farms	6 025	26 232	46 305	23 468	13 001	173 420	204 104	107 508
2007	TOTAL, including agricultural enterprises	6 640	29 066	55 190	28 094	15 177	199 962	241 925	126 572
	dehkan farms	229	913	1 679	1 133	37	6 485	6 370	3 759
	private subsidiary farms	6 359	26 795	49 885	25 620	15 135	182 770	227 545	115 314
2008	TOTAL, including agricultural enterprises	7 016	31 216	60 649	30 910	15 861	200 046	254 087	131 017
	dehkan farms	224	1 077	1 960	1 210	41	7 311	8 487	3 551
	private subsidiary farms	6 738	28 997	55 318	28 546	15 816	183 442	239 592	121 371
2009	TOTAL, including agricultural enterprises	7 506	31 810	63 521	31 513	16 747	210 807	267 808	134 346
	dehkan farms	195	1 381	2 363	869	101	11 910	9 492	2 743
	private subsidiary farms	7 268	29 500	58 164	29 350	16 640	194 184	253 292	124 389
2010	TOTAL, including agricultural enterprises	7 987	32 512	69 695	33 019	17 628	214 829	290 708	137 598
	dehkan farms	256	1 276	2 754	543	119	12 460	10 623	2 642
	private subsidiary farms	7 701	30 200	64 243	31 196	17 502	198 141	275 976	127 754
2011	TOTAL, including agricultural enterprises	8 108	32 725	76 275	33 656	18 151	217 135	319 328	141 278
	dehkan farms	269	1 441	3 202	644	130	13 527	11 258	2 682
	private subsidiary farms	7 810	30 392	70 730	31 518	18 014	200 440	304 344	131 087

Year	Type	Meat production, live weight, tonnes				Milk production, tonnes			
		GBAO	Sogd	Khatlon	DRS	GBAO	Sogd	Khatlon	DRS
2012	TOTAL, including agricultural enterprises	8 696	33 889	83 190	36 224	19 392	220 252	360 761	177 890
	dehkan farms	306	1 482	3 476	767	148	14 265	12 253	2 578
	private subsidiary farms	8 355	31 484	77 446	33 722	19 237	203 413	345 515	167 763
2013	TOTAL, including agricultural enterprises	8 933	34 865	90 857	38 333	19 852	223 615	392 395	192 317
	dehkan farms	322	1 526	4 149	898	161	14267	12748	2907
	private subsidiary farms	8 581	32 339	85 074	35 965	19 684	206 545	376 934	181 025
2014	TOTAL, including agricultural enterprises	9 378	43 554	103 659	42 162	20 127	229 491	409 990	195 129
	dehkan farms	347	1 564	4 379	800	168	15 155	12 838	2 775
	private subsidiary farms	8 998	40 938	97 761	39 742	19 952	211 451	393 870	182 096
2015	TOTAL, including agricultural enterprises	9 534	48 131	116 903	43 133	20 509	239 014	431 947	197 490
	dehkan farms	361	1 836	4 491	730	188	16 154	13 518	3 080
	private subsidiary farms	9 146	45 239	110 953	40 782	20 313	220 517	415 168	184 109
2016	TOTAL, including agricultural enterprises	10 253	53 346	125 700	44 030	21 334	249 779	447 070	199 807
	dehkan farms	364	2 139	4 587	1 072	190	16 847	13 892	3 059
	private subsidiary farms	9 860	50 435	119 426	41 691	21 135	230 238	429 573	186 905

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

Year	Type	Egg production, thousands of pieces				Wool production, tonnes			
		GBAO	Sogd	Khatlon	DRS	GBAO	Sogd	Khatlon	DRS
2005	TOTAL, including agricultural enterprises	4 026	25 681	25 815	43 148	176	955	2 734	488
	dehkan farms	0	168	345	162	9	81	95	23
	private subsidiary farms	4 026	12 979	25 260	18 750	157	732	2 075	397
2006	TOTAL, including agricultural enterprises	4 120	32 701	28 544	39 955	175	1 015	3 079	485
	dehkan farms	0	199	470	184	9	108	139	28
	private subsidiary farms	4 120	13 549	27 897	19 510	155	783	2 384	415
2007	TOTAL, including agricultural enterprises	4 346	32 415	30 760	43 712	187	1 045	3 334	497
	dehkan farms	0	219	582	181	13	111	163	30
	private subsidiary farms	4 346	18 773	30 026	21 220	162	813	2 631	423
2008	TOTAL, including agricultural enterprises	4 261	41 676	39 324	65 755	185	1 046	3 468	479
	dehkan farms	0	177	5 734	173	10	128	210	38
	private subsidiary farms	4 261	17 750	33 457	23 601	167	809	2 755	410
2009	TOTAL, including agricultural enterprises	5 080	52 918	42 145	88 372	209	1 112	3 582	531
	dehkan farms	0	245	4 421	1 469	12	156	259	36
	private subsidiary farms	5 080	19 749	37 486	21 729	191	872	2 879	468
2010	TOTAL, including agricultural enterprises	5 305	55 911	44 241	126 467	206	1 185	3 811	569
	dehkan farms	0	265	2 889	1 083	14	158	350	44
	private subsidiary farms	5 305	20 771	41 085	23 716	185	945	3 076	500
2011	TOTAL, including agricultural enterprises	5 358	64 117	48 883	136 336	211	1 218	4 051	548
	dehkan farms	0	827	4 627	850	14	165	410	45
	private subsidiary farms	5 358	22 110	43 995	25 503	190	976	3 306	483

Year	Type	Egg production, thousands of pieces				Wool production, tonnes			
		GBAO	Sogd	Khatlon	DRS	GBAO	Sogd	Khatlon	DRS
2012	TOTAL, including agricultural enterprises	5 311	93 785	52 352	140 185	214	1 243	4 240	664
	dehkan farms	0	443	1 687	840	17	165	462	61
	private subsidiary farms	5 311	22 883	47 307	29 224	191	1 009	3 476	580
2013	TOTAL, including agricultural enterprises	5 327	122 373	57 299	158 732	240	1 261	4 358	706
	dehkan farms	0	2 134	2 034	1 472	17	125	471	77
	private subsidiary farms	5 327	24 200	51 892	31 174	219	1 102	3 591	606
2014	TOTAL, including agricultural enterprises	5 358	125 101	60 842	158 744	244	1 307	4 489	736
	dehkan farms	0	2 711	2 131	1 597	21	174	513	84
	private subsidiary farms	5 358	25 738	55 225	34 340	218	1 071	3 663	623
2015	TOTAL, including agricultural enterprises	5 400	142 144	64 827	144 870	246	1 375	4 700	712
	dehkan farms	0	2 723	2 031	120	21	184	576	72
	private subsidiary farms	5 400	27 553	58 866	34 858	220	1 135	3 845	613
2016	TOTAL, including agricultural enterprises	5 478	151 144	69 230	111 301	249	1 470	4 854	731
	dehkan farms	0	4 807	2 168	769	22	210	648	84
	private subsidiary farms	5 478	35 223	64 754	50 306	222	1 215	3 955	621

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

Year	Type	Silk cocoon production, tonnes				Honey production, tonnes			
		GBAO	Sogd	Khatlon	DRS	GBAO	Sogd	Khatlon	DRS
2005	TOTAL, including agricultural enterprises	0	1 696	1 237	313	63	956	118	383
	dehkan farms	-	-	-	-	0	2	10	19
	private subsidiary farms	-	-	-	-	63	950	99	355
2006	TOTAL, including agricultural enterprises	0	1 577	1 184	269	69	967	256	394
	dehkan farms	-	-	-	-	0	3	34	23
	private subsidiary farms	-	-	-	-	68	950	210	362
2007	TOTAL, including agricultural enterprises	0	841	1 218	284	78	1 055	320	522
	dehkan farms	-	-	-	-	0	6	47	32
	private subsidiary farms	-	-	-	-	77	1 034	259	463
2008	TOTAL, including agricultural enterprises	0	1 301	1 213	235	101	1 059	383	517
	dehkan farms	-	-	-	-	0	6	60	65
	private subsidiary farms	-	-	-	-	101	1 038	307	435
2009	TOTAL, including agricultural enterprises	0	919	752	179	110	1 063	482	1 049
	dehkan farms	-	-	-	-	0	101	116	62
	private subsidiary farms	-	-	-	-	107	948	355	953
2010	TOTAL, including agricultural enterprises	0	396	521	163	113	1 156	522	1 177
	dehkan farms	-	-	-	-	1	0	122	57
	private subsidiary farms	-	-	-	-	107	1 143	389	1 083
2011	TOTAL, including agricultural enterprises	0	568	573	122	114	1 156	614	1 052
	dehkan farms	-				0	2	114	36
	private subsidiary farms	-				108	1 141	477	979

Year	Type	Silk cocoon production, tonnes				Honey production, tonnes			
		GBAO	Sogd	Khatlon	DRS	GBAO	Sogd	Khatlon	DRS
2012	TOTAL, including agricultural enterprises	0	627	557	144	116	1 207	705	1 262
	dehkan farms	-	-	-	-	0	2	182	44
	private subsidiary farms	-	-	-	-	110	1 190	508	1 171
2013	TOTAL, including agricultural enterprises	0	801	629	139	118	1 220	840	1 333
	dehkan farms	-	-	-	-	0	3	191	49
	private subsidiary farms	-	-	-	-	111	1 200	633	1 230
2014	TOTAL, including agricultural enterprises	0	636	360	101	127	1 264	915	1 409
	dehkan farms	-	-	-	-	0	2	198	57
	private subsidiary farms	-	-	-	-	119	1 245	703	1 295
2015	TOTAL, including agricultural enterprises	0	342	375	118	126	1 269	945	1 513
	dehkan farms	-	-	-	-	0	1	190	54
	private subsidiary farms	-	-	-	-	117	1 251	742	1 402
2016	TOTAL, including agricultural enterprises	0	377	381	111	128	1 299	962	1 607
	dehkan farms	-	-	-	-	0	1	191	56
	private subsidiary farms	-	-	-	-	118	1 280	758	1 494

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

Year	Type	Grains and legumes production, tonnes				Cotton production, tonnes			
		GBAO	Sogd	Khatlon	DRS	GBAO	Sogd	Khatlon	DRS
2005	TOTAL, including agricultural enterprises	13 641	216 618	535 210	169 410	0	155 526	240 884	51 508
	dehkan farms	10 474	81 071	127 281	73 102	0	71 601	133 326	15 812
	private subsidiary farms	1 315	76 492	317 006	72 513	-	-	-	-
2006	TOTAL, including agricultural enterprises	12 953	191 906	542 311	165 091	0	131 402	258 073	48 423
	dehkan farms	9 655	76 702	166 884	75 743	0	71 703	159 303	14 193
	private subsidiary farms	1 367	76 698	293 518	65 393	-	-	-	-
2007	TOTAL, including agricultural enterprises	13 428	213 475	542 857	161 425	0	124 830	259 643	35 313
	dehkan farms	10 236	100 837	180 932	76 723	0	75 384	174 159	12 549
	private subsidiary farms	1 776	77 389	292 837	62 569	-	-	-	-
2008	TOTAL, including agricultural enterprises	14 371	159 919	586 379	182 188	0	88 233	241 133	23 780
	dehkan farms	10 794	80 057	203 527	95 985	0	60 138	176 468	8 417
	private subsidiary farms	2 089	55 279	318 348	63 669	-	-	-	-
2009	TOTAL, including agricultural enterprises	15 998	262 111	774 005	242 339	0	87 105	197 860	11 049
	dehkan farms	11 600	165 772	366 744	122 707	0	70 401	151 644	1 745
	private subsidiary farms	2 399	59 767	319 955	72 394	-	-	-	-
2010	TOTAL, including agricultural enterprises	16 263	266 562	780 094	198 120	0	92 161	202 027	16 372
	dehkan farms	11 683	163 760	359 838	100 052	0	72 785	156 635	3 364
	private subsidiary farms	2 515	59 774	346 446	62 984	-	-	-	-
2011	TOTAL, including agricultural enterprises	16 592	171 146	728 811	181 625	0	118 293	272 184	26 013
	dehkan farms	11 952	85 299	338 355	93 502	0	93 141	221 859	7 388
	private subsidiary farms	2 542	61 710	331 872	63 754	0	-	-	-

Year	Type	Grains and legumes production, tonnes				Cotton production, tonnes			
		GBAO	Sogd	Khatlon	DRS	GBAO	Sogd	Khatlon	DRS
2012	TOTAL, including agricultural enterprises	16 044	213 210	798 384	204 945	0	113 869	282 569	21 540
	dehkan farms	11 546	109 647	383 934	108 256	0	92 234	235 458	6 276
	private subsidiary farms	2 405	67 873	348 731	67 034	0	-	-	-
2013	TOTAL, including agricultural enterprises	16 450	258 749	878 336	239 098	0	106 282	275 116	11 414
	dehkan farms	11 949	143 603	454 716	135 760	0	88 241	235 475	2 609
	private subsidiary farms	2 364	67 874	351 087	61 351	0	-	-	-
2014	TOTAL, including agricultural enterprises	16 455	232 804	828 709	239 845	0	100 215	262 816	9 622
	dehkan farms	11 920	129 404	468 450	132 486	0	83 226	226 373	2 368
	private subsidiary farms	2 153	63 853	292 200	64 563	0	-	-	-
2015	TOTAL, including agricultural enterprises	16 668	300 179	839 328	236 397	0	74 684	188 340	7 022
	dehkan farms	12 092	193 297	495 229	132 214	0	59 645	163 702	1 588
	private subsidiary farms	2 196	61 704	281 293	60 572	0	-	-	-
2016	TOTAL, including agricultural enterprises	16 349	311 653	870 351	237 449	0	85 589	193 049	6 069
	dehkan farms	12 293	209 604	504 735	138 535	0	70 362	161 796	1 211
	private subsidiary farms	2 262	60 580	302 402	59 539	0	-	-	-

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

Year	Type	Potatoes production, tonnes				Vegetables production, tonnes			
		GBAO	Sogd	Khatlon	DRS	GBAO	Sogd	Khatlon	DRS
2005	TOTAL, including agricultural enterprises	34 931	188 753	129 071	202 370	12 060	249 810	240 472	216 133
	dehkan farms	22 035	52 703	5 321	56 591	5 524	49 401	22 904	60 443
	private subsidiary farms	12 504	121 161	119 491	137 184	6 464	139 920	198 649	148 284
2006	TOTAL, including agricultural enterprises	37 276	201 912	135 221	199 278	13 459	269 974	259 182	217 122
	dehkan farms	23 238	62 292	8 764	54 901	6 011	54 234	38 440	69 877
	private subsidiary farms	13 614	126 313	121 714	136 817	7 447	151 563	202 440	137 657
2007	TOTAL, including agricultural enterprises	41 502	262 207	147 704	210 680	14 573	299 613	299 995	220 950
	dehkan farms	27 164	79 586	11 173	58 061	6 913	84 157	47 871	58 731
	private subsidiary farms	13 877	169 850	132 051	143 101	7 650	163 952	235 079	148 270
2008	TOTAL, including agricultural enterprises	45 856	268 424	156 716	208 778	15 738	299 798	358 937	233 752
	dehkan farms	29 057	88 428	9 621	57 042	7 382	69 876	65 078	66 096
	private subsidiary farms	16 265	167 251	143 728	143 489	8 350	190 717	275 826	160 259
2009	TOTAL, including agricultural enterprises	48 068	274 348	197 020	171 413	16 725	324 657	461 914	243 562
	dehkan farms	31 269	90 427	21 221	55 545	8 186	98 987	117 118	69 077
	private subsidiary farms	16 296	170 342	168 207	109 120	8 516	190 738	315 906	159 662
2010	TOTAL, including agricultural enterprises	48 775	286 157	209 665	215 542	18 346	329 538	533 887	260 853
	dehkan farms	31 445	93 007	27 012	63 470	8 929	105 753	153 273	79 320
	private subsidiary farms	16 748	159 748	175 463	143 221	9 394	195 086	350 945	164 090
2011	TOTAL, including agricultural enterprises	49 842	324 271	240 270	248 656	19 161	350 421	600 654	271 672
	dehkan farms	31 816	99 806	45 644	96 261	9 349	112 606	183 606	84 311
	private subsidiary farms	17 567	182 340	185 755	142 685	9 786	202 766	391 305	168 894

Year	Type	Potatoes production, tonnes				Vegetables production, tonnes			
		GBAO	Sogd	Khatlon	DRS	GBAO	Sogd	Khatlon	DRS
2012	TOTAL, including agricultural enterprises	55 870	381 375	253 352	300 018	20 727	354 118	669 544	297 547
	dehkan farms	35 264	142 355	60 258	149 913	10 452	109 993	215 894	107 504
	private subsidiary farms	19 749	196 045	182 029	138 237	10 231	205 068	426 412	173 452
2013	TOTAL, including agricultural enterprises	57 960	431 922	284 568	341 146	21 023	379 180	772 796	317 485
	dehkan farms	37 265	160 586	78 217	168 181	10 788	124 227	263 904	121 829
	private subsidiary farms	1 9781	223 015	192 987	160 971	10 187	215 369	474 755	175 636
2014	TOTAL, including agricultural enterprises	53 945	325 569	227 017	247 187	14 408	381 517	846 050	307 492
	dehkan farms	34 318	146 761	54 608	107 763	9 114	141 318	340 135	135 373
	private subsidiary farms	18 748	127 478	164 356	107 958	5 279	204 756	474 494	143 923
2015	TOTAL, including agricultural enterprises	54 022	335 835	241 995	255 547	15 136	440 343	903 915	307 148
	dehkan farms	34 642	182 432	82 033	129 692	9 287	185 389	424 786	130 653
	private subsidiary farms	18 393	109 899	149 534	108 981	5 833	220 717	445 838	144 900
2016	TOTAL, including agricultural enterprises	51 130	344 882	245 409	256 676	15 661	457 958	954 391	320 264
	dehkan farms	32 876	193 426	83 181	136 853	9 645	209 813	457 620	150 494
	private subsidiary farms	17 333	111 600	152 944	104 420	6 000	217 866	462 449	146 414

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

Year	Type	Melon and gourd production, tonnes				Fruit and berry production, tonnes			
		GBAO	Sogd	Khatlon	DRS	GBAO	Sogd	Khatlon	DRS
2005	TOTAL, including agricultural enterprises	142	26 740	137 019	6 329	10 431	48 587	53 806	35 479
	dehkan farms	34	17 112	38 575	1 226	6 637	8 708	4 604	3 587
	private subsidiary farms	63	6 748	78 162	4 002	3 743	28 738	44 944	29 905
2006	TOTAL, including agricultural enterprises	232	33 399	179 413	5 109	10 801	88 240	58 751	51 022
	dehkan farms	145	21 707	48 990	1 071	6 743	17 528	9 364	7 737
	private subsidiary farms	38	8 123	107 966	3 537	3 998	47 023	44 932	38 938
2007	TOTAL, including agricultural enterprises	188	34 965	212 012	7 005	11 205	28 233	64 526	53 219
	dehkan farms	104	20 642	73 795	2 978	7 075	6 753	10 787	7 320
	private subsidiary farms	38	10 390	117 214	2 718	4 120	17 643	48 893	42 706
2008	TOTAL, including agricultural enterprises	277	37 378	240 348	7 250	12 155	103 442	82 227	64 558
	dehkan farms	192	19 649	94 642	3 020	7 647	25 870	11 633	9 812
	private subsidiary farms	38	13 264	122 424	3 191	4 490	58 414	65 331	50 499
2009	TOTAL, including agricultural enterprises	260	55 382	360 533	8 404	13 894	65 461	89 670	44 890
	dehkan farms	150	37 189	214 963	2 534	8 960	15 371	12 634	4 296
	private subsidiary farms	61	11 560	110 097	4 573	4 917	37 503	72 280	38 975
2010	TOTAL, including agricultural enterprises	234	62 996	409 871	9 292	15 304	69 741	95 437	44 901
	dehkan farms	84	43 387	255 641	3 353	9 832	19 165	13 467	4 539
	private subsidiary farms	100	12 377	115 215	4 312	5 452	38 874	77 894	38 523
2011	TOTAL, including agricultural enterprises	317	69 032	342 825	11 149	15 937	80 984	106 599	44 890
	dehkan farms	200	43 478	199 263	4 973	10 287	23 972	17 473	10 602
	private subsidiary farms	67	13 696	124 587	4 944	5 630	44 901	84 596	46 287

Year	Type	Melon and gourd production, tonnes				Fruit and berry production, tonnes			
		GBAO	Sogd	Khatlon	DRS	GBAO	Sogd	Khatlon	DRS
2012	TOTAL, including agricultural enterprises	299	83 542	368 433	12 765	20 533	110 304	116 115	66 296
	dehkan farms	118	55 746	215 594	5 666	10 169	36 039	21 103	11 887
	private subsidiary farms	68	13 038	136 427	5 187	10 282	52 549	90 374	51 288
2013	TOTAL, including agricultural enterprises	304	84 002	397 779	13 178	21 853	111 382	125 825	69 407
	dehkan farms	118	53 075	229 038	6 561	10 672	37 501	26 240	15 033
	private subsidiary farms	72	13 038	154577	5000	11 098	54 466	96 023	51 740
2014	TOTAL, including agricultural enterprises	237	109 019	422 937	13 498	18 166	114 604	135 012	73 486
	dehkan farms	76	73 476	273 880	6 246	8 538	47 487	36 157	17 768
	private subsidiary farms	47	12 252	132 496	4 884	9 587	55 277	95 523	51 991
2015	TOTAL, including agricultural enterprises	241	138 439	440 405	13 350	19 094	49 083	148 191	82 864
	dehkan farms	65	110 983	310 884	8 223	9 570	19 443	44 824	20 110
	private subsidiary farms	58	7 854	116 529	3 748	9 483	27 834	99 927	58 342
2016	TOTAL, including agricultural enterprises	161	118 535	463 162	12 312	18 653	112 699	158 936	73 756
	dehkan farms	49	100 193	326 569	7 256	8 853	71 253	53 436	19 101
	private subsidiary farms	58	5 905	120 770	3 653	9 758	29 000	101 749	52 152

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

Year	Type	Grape production, tonnes			
		GBAO	Sogd	Khatlon	DRS
2005	TOTAL, including agricultural enterprises	0	23 620	40 628	26 407
	dehkan farms	0	7 580	5 288	6 088
	private subsidiary farms	0	9 349	32 754	13 791
2006	TOTAL, including agricultural enterprises	0	34 733	46 268	26 159
	dehkan farms	0	12 521	10 863	7 925
	private subsidiary farms	0	11 405	30 649	10 775
2007	TOTAL, including agricultural enterprises	0	36 289	51 464	29 181
	dehkan farms	0	13 049	12 749	8 339
	private subsidiary farms	0	16 672	34 059	13 313
2008	TOTAL, including agricultural enterprises	0	33 881	57 954	26 062
	dehkan farms	0	13 524	12 281	9 573
	private subsidiary farms	0	18 038	42 370	14 206
2009	TOTAL, including agricultural enterprises	0	44 801	61 186	32 680
	dehkan farms	0	23 738	14 036	6 807
	private subsidiary farms	0	18 546	44 976	21 711
2010	TOTAL, including agricultural enterprises	0	37 022	61 236	26 041
	dehkan farms	0	17 774	8 417	4 173
	private subsidiary farms	0	18 551	52 366	19 503
2011	TOTAL, including agricultural enterprises	0	47 788	70 766	36 172
	dehkan farms	0	25 619	14 193	9 228
	private subsidiary farms	0	19 827	55 439	21 481

Year	Type	Grape production, tonnes			
		GBAO	Sogd	Khatlon	DRS
2012	TOTAL, including agricultural enterprises	0	51 473	78 163	37 465
	dehkan farms	0	28 374	17 303	8 658
	private subsidiary farms	0	20 683	59 575	23 313
2013	TOTAL, including agricultural enterprises	0	51 493	83 039	40 803
	dehkan farms	0	26 466	18 542	11 700
	private subsidiary farms	0	22 000	63 059	22 936
2014	TOTAL, including agricultural enterprises	0	59 279	87 347	42 210
	dehkan farms	0	35 952	17 260	13 263
	private subsidiary farms	0	21 062	68 677	23 594
2015	TOTAL, including agricultural enterprises	0	51 867	96 715	55 186
	dehkan farms	0	34 224	22 928	21 897
	private subsidiary farms	0	16 581	72 638	22 635
2016	TOTAL, including agricultural enterprises	0	55 495	99 976	59 304
	dehkan farms	0	37 685	24 501	26 063
	private subsidiary farms	0	16 671	74 365	23 264

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

Table A1.4. Structure of livestock in dehkan farms and private subsidiary farms, 2005–2016

Year	Type	Cattle, head		Sheep and goats, head	Poultry, head
		Total	including cows, head		
2005	TOTAL, including agricultural enterprises	1 371 882	719 757	3 053 625	2 451 153
	dehkan farms	77 653	18 993	226 120	81 521
	private subsidiary farms	1 212 503	677 216	2 335 265	1 814 811
2006	TOTAL, including agricultural enterprises	1 422 614	756 615	3 165 142	2 579 835
	dehkan farms	86 308	21 436	261 748	96 801
	private subsidiary farms	1 267 889	714 798	2 446 165	1 976 370
2007	TOTAL, including agricultural enterprises	1 702 538	864 272	3 798 427	3 280 382
	dehkan farms	91 626	22 531	301 209	151 941
	private subsidiary farms	1 547 495	822 831	3 058 822	2 518 535
2008	TOTAL, including agricultural enterprises	1 799 506	932 875	4 146 763	3 682 851
	dehkan farms	102 815	26 162	362 939	166 174
	private subsidiary farms	1 645 304	890 775	3 403 900	2 615 281
2009	TOTAL, including agricultural enterprises	1 829 997	951 534	4 200 184	3 938 517
	dehkan farms	110 927	28 808	399 495	184 083
	private subsidiary farms	1 676 383	909 717	3 457 010	2 659 151
2010	TOTAL, including agricultural enterprises	1 896 894	984 926	4 394 192	4 402 688
	dehkan farms	116 183	30 149	448 275	197 196
	private subsidiary farms	1 741 853	942 763	3 635 789	2 774 249

Year	Type	Cattle, head		Sheep and goats, head	Poultry, head
		Total	including cows, head		
2011	TOTAL, including agricultural enterprises	2 015 353	1 037 058	4 618 595	4 654 827
	dehkan farms	120 936	31 724	485 538	232 627
	private subsidiary farms	1 859 295	994 904	3 845 831	2 883 001
2012	TOTAL, including agricultural enterprises	2 043 725	1 049 161	4 732 477	4 851 120
	dehkan farms	124 610	32 832	529 060	188 525
	private subsidiary farms	1 886 204	1 006 623	3 931 132	2 983 594
2013	TOTAL, including agricultural enterprises	2 099 075	1 076 315	4 923 638	5 020 482
	dehkan farms	128 460	34 378	563 748	231 830
	private subsidiary farms	1 940 113	1 033 183	4 077 100	3 055 825
2014	TOTAL, including agricultural enterprises	2 128 179	1 093 481	5 056 572	5 247 986
	dehkan farms	129 253	34 610	613 618	222 973
	private subsidiary farms	1 969 252	1 049 984	4 169 979	3 133 885
2015	TOTAL, including agricultural enterprises	2 209 171	1 131 926	5 279 297	5 142 979
	dehkan farms	133 599	36 152	684 303	306 935
	private subsidiary farms	2 049 096	1 088 030	4 334 365	3 209 844
2016	TOTAL, including agricultural enterprises	2 278 072	1 168 460	5 456 206	5 051 474
	dehkan farms	136 156	36 763	712 161	343 543
	private subsidiary farms	2 117 073	1 124 257	4 479 994	3 404 473

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

Table A1.5. Production of fruit and grapes of dehkan farms and private subsidiary farms, 2005–2016

Year	Type	Fruit and berry production, tonnes	Grape production, tonnes
2005	TOTAL, including agricultural enterprises	148 303	90 655
	dehkan farms	23 536	18 956
	private subsidiary farms	107 330	55 894
2006	TOTAL, including agricultural enterprises	208 814	107 160
	dehkan farms	41 371	31 309
	private subsidiary farms	134 892	52 829
2007	TOTAL, including agricultural enterprises	157 183	116 934
	dehkan farms	31 935	34 137
	private subsidiary farms	113 362	64 044
2008	TOTAL, including agricultural enterprises	262 382	117 897
	dehkan farms	54 962	35 378
	private subsidiary farms	178 734	74 614
2009	TOTAL, including agricultural enterprises	213 915	138 667
	dehkan farms	41 261	44 581
	private subsidiary farms	153 675	85 233

Year	Type	Fruit and berry production, tonnes	Grape production, tonnes
2010	TOTAL, including agricultural enterprises	225 383	124 299
	dehkan farms	47 003	30 364
	private subsidiary farms	160 743	90 420
2011	TOTAL, including agricultural enterprises	263 060	154 726
	dehkan farms	62 334	49 040
	private subsidiary farms	181 414	96 747
2012	TOTAL, including agricultural enterprises	313 248	167 101
	dehkan farms	79 198	54 335
	private subsidiary farms	204 493	103 571
2013	TOTAL, including agricultural enterprises	328 467	175 335
	dehkan farms	89 446	56 708
	private subsidiary farms	213 327	107 995
2014	TOTAL, including agricultural enterprises	341 268	188 836
	dehkan farms	109 950	66 475
	private subsidiary farms	212 378	113 333
2015	TOTAL, including agricultural enterprises	299 276	203 806
	dehkan farms	93 947	79 049
	private subsidiary farms	195 586	111 854
2016	TOTAL, including agricultural enterprises	364 060	214 775
	dehkan farms	152 643	88 249
	private subsidiary farms	192 659	114 300

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

Table A1.6. Crop yields, centner per ha, 2005–2016

Year	Type	Grains and legumes	Cotton	Potatoes	Vegetables	Melons and gourds	Fruits and berries	Grapes
2005	TOTAL, including agricultural enterprises	19.7	15.6	196.2	186.8	145.7	24.3	28.8
	dehkan farms	17.1	14.6	195.2	173.7	139.5	13.7	14.6
	private subsidiary farms	24.9	-	201.2	189.1	194.1	50.6	71.2
2006	TOTAL, including agricultural enterprises	20.6	17	198.5	186.9	185.7	31.1	33.1
	dehkan farms	17.7	16.4	191.5	167.3	165.3	21.5	21.4
	private subsidiary farms	26.9	-	205.2	192.5	262.4	51.8	58.8
2007	TOTAL, including agricultural enterprises	20.5	16.6	218.4	190.2	189.0	22.5	35.6
	dehkan farms	17.6	16.0	199.6	172.6	172.2	13.3	23.2
	private subsidiary farms	26.9	-	230.8	199.6	258.2	41.8	64.4
2008	TOTAL, including agricultural enterprises	20.9	15.6	226.9	198.8	197.6	35.5	36.9
	dehkan farms	18.2	15.9	212.4	182.5	182.2	20.7	23.5
	private subsidiary farms	25.6	-	236.5	206.9	260.1	61.4	75.3
2009	TOTAL, including agricultural enterprises	25.2	17.8	223.1	208.0	202.9	29.2	44.1
	dehkan farms	24.2	18.4	206.3	193.6	193.6	15.2	29.1
	private subsidiary farms	28.8	-	236.3	220.4	283.3	52.5	82.7

Year	Type	Grains and legumes	Cotton	Potatoes	Vegetables	Melons and gourds	Fruits and berries	Grapes
2010	TOTAL, including agricultural enterprises	24.1	19.3	229.7	205.8	204.2	30.4	40.8
	dehkan farms	22.6	19.5	215.0	190.6	197.8	16.7	20.4
	private subsidiary farms	29.9	-	240.9	222.0	288.7	52.6	87.8
2011	TOTAL, including agricultural enterprises	23.6	20.6	228.3	216.5	205.9	34.0	49.6
	dehkan farms	22.4	20.8	207.4	196.7	198.8	20.9	31.2
	private subsidiary farms	28.9	-	246.4	233.6	277.9	59.4	92.9
2012	TOTAL, including agricultural enterprises	25.3	21.3	233.2	225.1	209.7	39.9	52.9
	dehkan farms	24.5	21.4	221.3	207.4	204.3	24.8	33.1
	private subsidiary farms	30.4	-	247.9	241.4	280.9	66.9	99.0
2013	TOTAL, including agricultural enterprises	27.7	20.6	247.3	240.3	223.8	40.0	54.9
	dehkan farms	28.1	21.1	232.6	229.8	218.2	25.8	34.1
	private subsidiary farms	30.8	-	265.0	250.7	284.7	68.7	103.3
2014	TOTAL, including agricultural enterprises	28.0	21.6	236.0	251.1	229.4	39.9	61.1
	dehkan farms	28.8	16.1	242.8	246.0	232.2	27.9	41.3
	private subsidiary farms	31.8	-	229.3	259.1	276.6	66.3	108.5
2015	TOTAL, including agricultural enterprises	28.6	17.3	221.7	247.9	233.4	33.2	64.2
	dehkan farms	28.0	17.4	234.7	255.4	234.9	20.7	46.2
	private subsidiary farms	31.3	-	206.4	243.6	267.8	60.4	108.0
2016	TOTAL, including agricultural enterprises	29.2	17.6	214.4	248.6	246.2	38.7	67.4
	dehkan farms	29.0	17.6	228.2	255.4	250.5	31.1	51.3
	private subsidiary farms	32.7	-	198.5	243.5	269.5	59.3	107.8

SOURCE: TAJSTAT, 2008A; TAJSTAT, 2010A; TAJSTAT, 2015A; TAJSTAT, 2017A

Table A1.7. The main needs, challenges and constraints of the dehkan farms identified

Needs	Challenges	Constraints
- Access to advisory services - Access to new technologies - Access to social services, including support from local authorities - Access to resources: financial (preferential loans, insurance leasing and grants), labour, water and petroleum products - Simplification of the tax burden - Access to quality mineral fertilizers, pesticides and seeds - Access to markets and market information - Access to infrastructure (including enterprises, workshops and mini-plants for processing, as well as cold rooms or equipped warehouses for storage)	**Economic:** - Low prices and lack of demand for agricultural products - Lack of sufficient financial resources - Low yield and inadequate product quality **Social:** - Labour migration - Lack of desire for young people to work in the dehkan farm - Lack of staff (specialists, agronomists, irrigators) - Lack of technical knowledge and financial literacy - Persisting gender-based stereotypes	**Resources:** - Lack or low quality of mineral fertilizers, pesticides and seeds - Limited access to irrigation water - Lack of advisory services - Absence or low quality of education - Lack of knowledge about the entrepreneurial environment - Lack of knowledge of rights and responsibilities - Lack of market information - Lack of access to markets (especially external ones) **Economic:** - Price volatility - High prices for fuel, quality mineral fertilizers, pesticides and seeds - Lack of an insurance system - Inflation and higher interest rates on loans **Technology:** - Lack of a planned approach to the selection and sowing of crops (crop rotation) - Lack of access to new agricultural technologies - Lack of agricultural equipment for the development and cleaning of drains, collectors and drainage systems - Wear of equipment and machinery, including of irrigation systems - Lack of conditions for the storage of agricultural products **Ecological:** - Climate change, including erosion, devastation, low yield, depletion and waterlogging (rising groundwater), floods, drought, locust attacks, sudden frosts **Legal (legislative):** - Distribution of responsibilities between dehkan farms and local authorities - Lack of coherence between dehkan farms and local authorities, as well as support - Frequent checks from different structures

SOURCE: THE AUTHORS' ELABORATION BASED ON THE COUNTRY STUDY REPORT: SMALLHOLDERS AND FAMILY FARMS IN TAJIKISTAN

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