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SPECIAL REPORT

2020 FAO/WFP CROP AND FOOD SECURITY ASSESSMENT MISSION (CFSAM) TO THE REPUBLIC OF TAJIKISTAN

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ACRONYMS AND ABBREVIATIONS

AoS	Agency of Statistics under the President of the Republic of Tajikistan
CFSAM	Crop and Food Security Assessment Mission
CIS	Commonwealth of Independent States
CPI	Consumer Price Index
DRS	Districts of Republican Subordination
FAO	Food and Agricultural Organization of the United Nations
FCS	Food Consumption Score
FPMA	Food Price Monitoring and Analysis
GBAO	Gorno-Badakhshan Autonomous Oblast
GDP	Gross Domestic Product
GIEWS	Global Information and Early Warning System on Food and Agriculture
HDI	Human Development Index
Hydromet	State Agency for Hydrometeorology of the Republic of Tajikistan
KII	Key Informant Interviews
LCS	Livelihood Coping Strategy
LLC	Limited Liability Company
MEDT	Ministry of Economic Development and Trade
MoA	Ministry of Agriculture of the Republic of Tajikistan
NBRT	National Bank of the Republic of Tajikistan
NGOs	Non-Governmental Organizations
PLWG	Pregnant and Lactating Women and Girls
rCSI	Reduced Coping Strategy Index
RUB	Rouble
TJS	Tajik Somoni
USD	US dollar
WFP	World Food Programme
WUA	Water Users Association


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HIGHLIGHTS

- The total grain production in 2020 (first and second season crops) is estimated at 1.3 million tonnes. Wheat production, the country's main staple, is estimated at a near-average level of 845 500 tonnes. Outputs of barley and oats are estimated at below-average levels due to reduced plantings. The output of potatoes, another main staple, is estimated at 916 000 tonnes.

- In the 2020/21 marketing year, import requirements of cereals, mostly wheat, are forecast at about 1 225 000 tonnes, while imports of potatoes are forecast at 204 000 tonnes. All imports are expected to be fully covered by commercial purchases.

- Livestock body conditions are generally good due to an adequate availability of grazing resources and sufficient fodder supplies.

- Prices of wheat flour reached record highs in May 2020 after sharply increasing in March and April due to strong consumer demand amid concerns over the COVID-19 pandemic and decreased between June and July with the harvest of the 2020 wheat crops improving market supplies. Prices remained overall stable between August and October 2020 but were well above the level of one year earlier.

- Prices of potatoes sharply increased between December 2019 and April 2020, with seasonal trends exacerbated by strong demand from consumers, fearing supply shortages due to the pandemic, and reached levels twice as high as 12 months before. Prices seasonally declined between May and September 2020.

- Due to the negative impact of the COVID-19 pandemic on employment, income, remittances and food market prices, the number of households who are not able to afford quality nutritious diets has substantially increased since March 2020.

- The impact of the COVID-19 pandemic forced people to adopt various coping strategies such as limiting the amount of food consumed per day and decreasing the portion size of the meal, selling valuable assets like cars and land, depleting food stocks and purchasing food on credit. Over 70 percent of the interviewed households reported using emergency, crisis and stress coping strategies.

- Movement restrictions, implemented to contain the spread of COVID-19 in the country as well as in the neighbouring Russian Federation, affected all sources of income, resulting in decreased opportunities for

seasonal migrant workers, delayed salary payment for public employees and pensioners, and reduced income of farmers due to the ban on the export of food products.

- Women-headed households are reportedly more vulnerable than their male counterparts. Although no notable differences were observed in the food consumption measured by diversity and frequency, a greater proportion of women-headed households reportedly had less household food stock, consumed smaller portion size and had limited access to the market during the pandemic.

OVERVIEW


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In response to the request by the Government of the Republic of Tajikistan on 15 May 2020, FAO and WFP carried out an abridged approach to the Crop and Food Security Assessment Mission (CFSAM) for the country. After thorough planning and preparation, considering movement restrictions due to the COVID-19 pandemic, the Mission estimated the 2020 production of the major food crops and the import requirements for the 2020/21 marketing year and assessed the overall food security situation in the country. After reviewing and collecting existing information in the capital, Dushanbe, the Mission was in the field between 6 and 31 July 2020 and between 15 and 25 September 2020 to estimate the production of first and second season crops and to assess households' food security. The Mission's core team was composed of FAO and WFP staff: FAO provided an economist and an agronomist, while WFP provided experts in qualitative assessment of food security and emergency food assistance requirements for the vulnerable groups. Technical support was provided by officials of the Ministry of Agriculture of the Republic of Tajikistan (MoA) and the Agency on Statistics (AoS) under the President of the Republic of Tajikistan.

Before starting the field work, all team members received extensive on-line training on the CFSAM methodology and tools by FAO and WFP senior staff, elaborated the check list to be used (see Annex 3), discussed the data to be collected and finalized the itinerary as well as logistics arrangements.

Regarding the FAO assessment of the first and second season crops, the teams visited all regions of the country in July and September, with the exception of the Gorno-Badakhshan Autonomous region that was not visited in July as there is only one cropping season that starts later compared to other regions. Overall, 26 of the 57 agriculture districts of the country were visited. Each team included representatives from FAO, crop and livestock specialists from the MoA and agriculture statisticians from the AoS. In total, the teams spent 20 days in the field. During the field work, teams met with local Government officials and extension workers and were briefed on the general agricultural and food security situation. Each team conducted structured interviews with farming households to discuss the status and prospects of crop production and observed the conditions of the crops still standing in the field. Local markets, traders and millers in each district were visited to assess the availability of food commodities and the recent changes in prices.

The Mission obtained planted and harvested area and yield estimates from agriculture departments at district and region levels and agriculture staff of *jamoats* (sub-district entities). The data was then cross-checked against the information provided by

farmers and traders that were interviewed during the field trips and against the evidence provided by the estimated rainfall and other remotely sensed meteorological data.

The WFP analysis focused on understanding household food security in terms of food access, affordability and availability in the markets. The data collection process was designed to assess both the qualitative and quantitative aspects of the food security situation in the country. The collection of quantitative data through telephone surveys was outsourced to a private company, the LLC M-Vector, while WFP staff focused on qualitative aspects and visited all four regions of the country. Key Informant Interviews (KIIs) were conducted with heads of relevant departments dealing with food security and nutrition, migration, employment, economic development, environmental protection, etc. and heads of district and county *jamoat* governments, communities, wholesale traders and millers.

During the field visits, meetings and interviews were conducted with key informants as heads of *dehkan*[1] farms and farmers in order to assess the agricultural situation in the country. Issues related to harvest, pest control, availability of inputs financing and credit provision, the state of meadows and pastures and the state of the livestock sector were discussed at meetings. The meetings also provided an opportunity to receive first-hand insights of the factors that affected agricultural production in 2020 in both the first and second seasons.

Timely and adequate rainfall amounts in autumn 2019 in mountainous regions benefited plantings of winter cereals. Between March and July 2020, adequate rains fell throughout the valleys, benefitting the growth and development of crops in most areas visited by the CFSAM. Localized reduced crop conditions were observed in the areas affected by heavy rainfall and cold weather in April and in irrigated areas with deteriorated irrigation infrastructure and drainage systems.

Despite some control measures, crops in 2020 have been affected by a number of pests and diseases, such as locusts, stripe rusts, head smuts, maize worms, Colorado beetles, cotton budworms, onion flies, powdery mildews, wireworms, etc. The most dangerous pests were the Italian and Moroccan locusts, which caused significant losses to crops in the sub-mountainous areas.

The Mission found that the number of tractors and agricultural machinery for carrying out certain agricultural practices (tillage, harvesting, etc.) was insufficient compared to the demand and the prices for their services had significantly increased in 2020 compared to the previous year. Farmers also informed about the increase in the price of fuel and lubricants during the sowing and harvesting of agricultural crops. The low availability and elevated prices of high-quality inputs (seeds, fertilizers and chemicals) remained a major constraint for crop production.

Interviewed farmers flagged the urgent need for extension and advisory services on the use of innovative cultivation technologies, the introduction of new high-yielding crops and varieties adapted to climate change and the distribution of pesticides and fertilizers.

Following overall favourable weather conditions, the 2020 production of wheat, the country's main crop and a staple food, was estimated by the Mission at 845 500 tonnes, close to the previous year's near-average level. The cereal import requirements in the 2020/21 marketing year are forecast at about 1 225 000 tonnes, including 974 000 tonnes of wheat, 216 000 tonnes of maize, 20 000 tonnes of rice and 14 000 tonnes of barley. In addition, the Mission estimated

[1] *Dehkan* farms are mid-sized farmer farms that are legally and physically distinct from household plots. About 60 percent of the agricultural land in the country belongs to *dehkan* farms. A *dehkan* farm is on average about 20 hectares, which is much larger than the 2 hectares of household plots where crops such as cotton, wheat and vegetables are grown.

potatoes import requirements at 204 000 tonnes. All imports are expected to be fully covered by commercial purchases.

At the time of the field work, livestock body conditions were generally good as a mild and short winter allowed animals to graze longer. In addition, most farmers reported adequate fodder availability and no major disease outbreaks were reported in 2020.

Prices of wheat increased sharply between March and May 2020, reaching record levels in May, due to increased consumer demand amid concerns over the COVID-19 pandemic and export limitations imposed by the Government of Kazakhstan in April and May. Prices decreased between June and July, weighed by improved market availabilities from the 2020 main harvest, and remained overall stable between August and October, however, at levels well above those in October 2019.

Prices of potatoes increased sharply between November 2019 and April 2020, with seasonal trends exacerbated by strong demand from consumers, fearing supply shortages due to the pandemic, and reached levels twice as high as 12 months before. Prices seasonally declined between May and September.

Increased food prices have reduced the purchasing power of the population in general, with a more significant impact on the most vulnerable population groups. Access to quality and diverse foods was limited in remote areas and settlements due to distances from the central markets and the high cost of transportation to these areas.

Traders reported the slowing down of commerce, which has not returned to pre-pandemic levels due to the reduction in purchasing power of the population; as a result, both wholesalers and retailers decreased their supply of commodities to the markets.

As a consequence of the COVID-19 pandemic, half of the interviewed households reported relying on less preferred and less expensive food, two-fifths of households borrowed food or relied on help from relatives and friends and more than one-third of the households reduced adults' consumption so that small children could eat adequately.

According to the household survey, half of the labour migrants who were abroad in 2020 managed to find employment, but with reduced hours and wages. One-quarter of migrants did not find any employment opportunities, while the remaining had stable employment with the same income as before the pandemic. The number of families of migrants who received remittances in 2020 from abroad dropped by two folds and the received amounts were significantly reduced compared to 2019.

The general concerns for the households during the COVID-19 pandemic are their health, lack of financial resources, fear of losing their jobs or having no job, shortage of food and increase in food prices.


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SOCIO-ECONOMIC CONTEXT

Macro-economic situation

The Republic of Tajikistan is a landlocked, low-income and food-insecure country located in Central Asia. The country borders with Uzbekistan (on the west and east), Kyrgyzstan (in the north), China (in the east) and Afghanistan (in the south). The population totals about 9.3 million; there are more than 1.5 million households. According to approximate estimates, about 74 percent of the population lives in rural areas. Most of the communities are concentrated in irrigated valleys linked with agricultural systems that support the population and the farm surpluses are sold.


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Immediately upon independence in 1991, the country went through a civil war (1992-1997), which resulted in serious destruction and human losses. Peace and stability were restored in 1997. After the transition to a market economy in 1991, the country faced high levels of migration. At the initial stage, emigration was stimulated by the war and conflicts that followed upon independence. In recent years, economic factors have become an incentive for migration. Cash flows/remittances from labour migrants have become one of the main driver of the rapid growth of the national economy: in 2014-2019, the average economic growth rate was about 7 percent per year. According to estimates, in 2019, remittances from labour migrants reached USD 3 billion, accounting for 37 percent of the GDP. This is the largest source of external financing for the budget. In addition, remittances from labour migrants are an important source of household income and play a significant role in poverty alleviation. The national economy also depends on the export of aluminum and cotton fiber. It is expected that, following the world economic crisis due to the COVID-19 pandemic, economic growth will slow down: in 2020, it will be within 2 to 2.5 percent. This will be due to an expected decrease of about 23 percent in remittances from Tajik labour migrants working in the Russian Federation, coupled with a decrease in exports of cotton and other raw materials.

In recent years, macro-economic, short and medium-term perspectives have fluctuated and remained very fragile, under a small GDP growth, high inflation rate and the growing shortage of energy and water resources. A brief time series of macro-economic indicators analysis is provided in Table 1.

In recent years, the national currency, the Somoni (TJS) was sharply devaluated against the US dollar (Figure 1) and the official exchange rate moved from TJS 4.93/US dollar in 2014 to about TJS 10/US dollar in 2020. Due to the COVID-19 pandemic and the consequent closure of the borders, the devaluation trend slowed down slightly and was only 5 percent in 2020 compared to 2019.

Table 1: Tajikistan - Key economic indicators, 2014-2019

Economic indicators	2014	2015	2016	2017	2018	2019
GDP (USD million)	9 241.6	7 852.8	6 952.8	7 157.9	7 765.0	8 116.9
GDP per capita (USD)	1 119.3	929.2	804.1	810.0	860.0	880.2
GDP (percent/year)	6.7	6.0	6.9	7.1	7.6	7.5
Poverty rate (percent)	32.0	31.0	30.3	29.5	27.4	26.3
Unemployment rate (percent)	2.5	2.4	2.3	2.2	2.2	2.0
Cash receipts from labour migrants (as percent of GDP)	42.3	28.1	27.3	35.0	33.6	37.0
Agricultural production (as percent of GDP)	23.5	22.0	20.4	21.0	21.1	19.8
Budget deficit/surplus (as percent of GDP)	0.3	0.8	-1.7	3.6	0.4	-0.6
Growth in exports (percent/year)	3.6	-8.9	0.9	33.3	-10.4	9.4
Growth in imports (percent/year)	6.2	-20.1	-11.8	-8.5	13.5	6.3
Trade balance (USD million)	-3 361.3	-2 545.0	-2 132.5	-1 576.8	-2 076.2	-2 174.9
Trade balance (as percent of GDP)	36.4	32.4	30.7	22.0	26.7	26.8

Source: The indicators presented are obtained from various sources, including AoS, MEDT, NBRT, Central Bank of the Russian Federation; https://www.stat.tj/ru/macroeconomic-indicators; https://tajikta.tj/ru/news/na-20-sokratyatsya-denezhnye-perevody-v-tadzhikistan-v-2020-godu-prognoz-vb; https://fergana.agency/news/113758/.

Population and employment

According to AoS, the population of the country is estimated at 9.31 million in 2020, with an annual growth rate of 2.2 percent of which 2 to 2.5 percent is officially (i.e. registered) as unemployed. Labour migrants contribute significantly to households' food security through remittances (above 37 percent of the GDP in 2019) that have significantly dropped in 2020 due to the COVID-19 pandemic. During the first quarter of 2020, remittances of labour migrants amounted to USD 359 million, about 22 percent less than in the same period of 2019.[2]

Regarding the quality of life and welfare, notwithstanding the steady, positive economy improvements to 2019, the Republic of Tajikistan ranks 125th[3] out of the 189 countries in the United Nations Human Development Index (HDI) exhibiting a slight progress since 2018 (by two positions). In terms of the safety and protection indicator, the country ranks 86th[4], personal freedom: 149th, state administration: 141st, social capital: 26th, business environment: 117th, education: 89th, health: 74th.

Agricultural sector

The agricultural sector employs about 60 percent of the economically active population and its production accounts for 20 percent of the GDP.[5] In 2019, agricultural products provided about 20 percent of official export earnings. The Republic

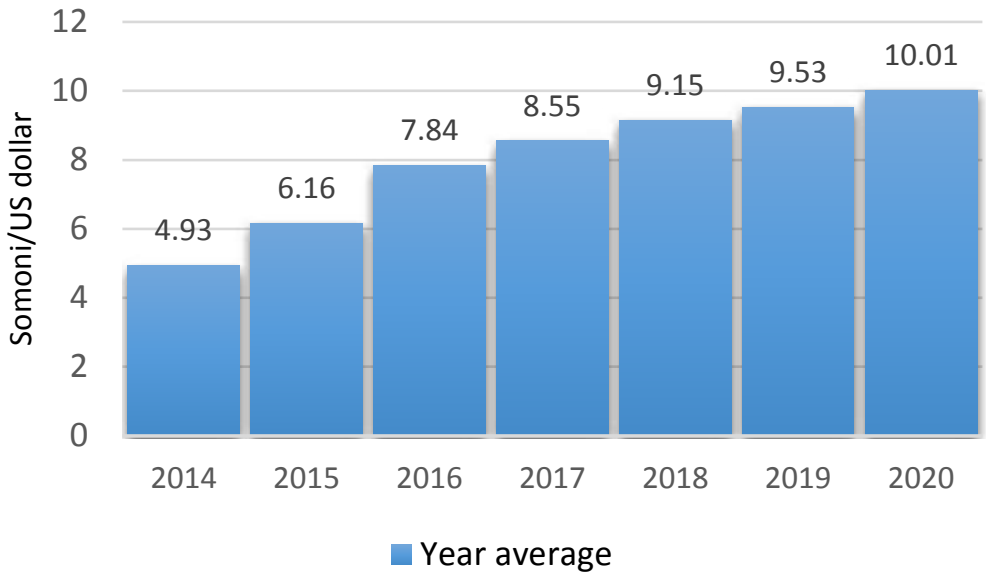
[2] COVID-19 and Food Security – Monthly Update, July 2020 (FAO and WFP, 2020).

[3] Human Development Report, 2019.

[4] https://tajikta.tj/ru/news/tadzhikistan-na-114-meste-v-reytinge-protsvetayushchikh-stran-mira-.

[5] AoS/Statistical Yearbook, 2019.

Figure 1: Tajikistan - Official exchange rates, 2014-2020



Source: AoS, 2020.

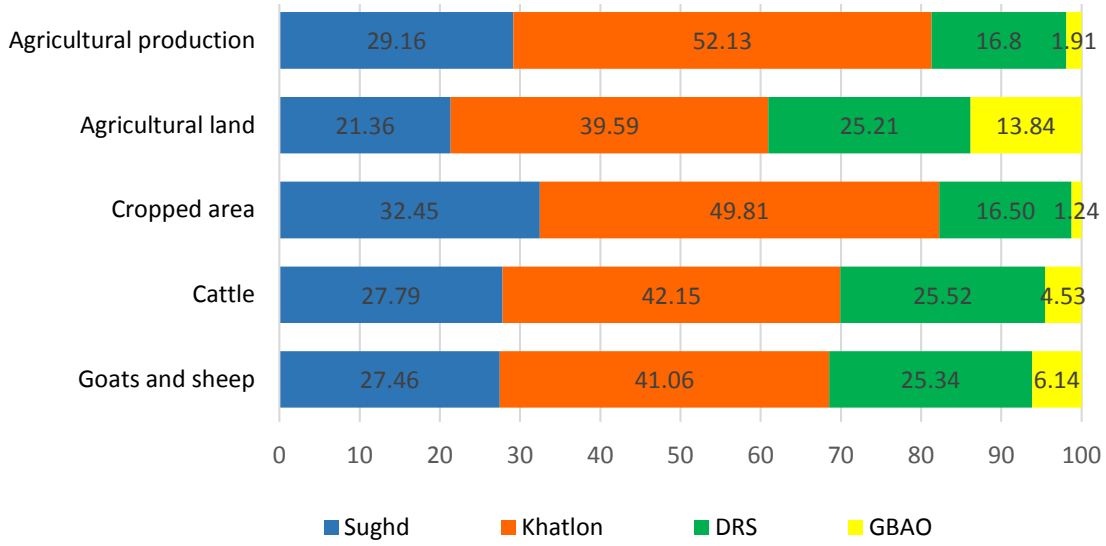
of Tajikistan is a mountainous country and arable land accounts for only 7 percent of the territory. Half of the country is at altitudes of more than 3 000 m on the sea level, with the highest point being the Ismail Somoni Peak (7 495 m) in the Akademiya Nauk Range (Pamir). Large glaciers cover more than 8 000 sq km, mainly in the Pamir mountains and their water feeds several rivers flowing through the country as well as neighbouring Uzbekistan into the west.

Arable agriculture takes place primarily in river valleys where about 70 percent of the farmed land depends on irrigation to provide a harvestable crop. The number of irrigations varies from one or two up to eight to ten per growing season, depending on the type of crop (cotton usually ranks first in terms of priority) and the effectiveness of the irrigation lift/delivery system. There are four main, well-defined valley systems:

- The Ferghana Valley in the north of the country along the Syr Darya River and its the southwestern part stretches from Uzbekistan into Tajikistan.
- The broad Khatlon lowlands in the southwest, extending from Kulyab town in the east to the border with Uzbekistan in the west.
- The Hissor Valley between Dushanbe and Tursunzade towns, in the north of the Khatlon Region.
- The narrow strip of the Zarafshan Valley, extending from east to west between Ferghana and Hissor valleys.

The importance of the agricultural sector in the three regions (oblasts) of Sughd, Khatlon, Gorno Badarkhshan (GBAO) and the districts of Republican Subordination (DRS) connects to the proportional representation of the four river basins with their feeder water catchments within the respective provincial boundaries. The main agricultural areas of the country are the Khatlon Region in the southwest, the Sughd Region in the north and the Hissor and Rasht zones in the western and southern parts of the DRS. Figure 2 shows the provincial distribution of agricultural land, cropped area, livestock units and the average gross agricultural output.

Figure 2: Tajikistan - Relative contribution of regions to agricultural production in 2019 (percent)



Source: AoS/Statistical Yearbook, 2019.

The mountainous GBAO is the largest region by territory, but it has the smallest population and the smallest level of agricultural activity. The Khatlon Region has the largest population (2.7 million) and the largest agriculture area accounting for about 52 percent of the agricultural output, with 30 percent of cotton, 45 percent of cereals and about 50 percent grazing for cattle and small ruminants. Livestock units in the region are 42 percent of all cattle and 41 percent of small ruminants in the country. The Sughd Region makes a significant contribution to agricultural production: 29 percent, while the DRS and the GBAO contribute for 17 and 2 percent, respectively.

The sown areas to potatoes, vegetables and melons are located in the three major agricultural regions of Khatlon (45 percent), Sughd (31 percent) and DRS (22 percent). Roughly, the same situation is observed for the production of fruits and berries. The area with vineyards is evenly distributed across the three regions.

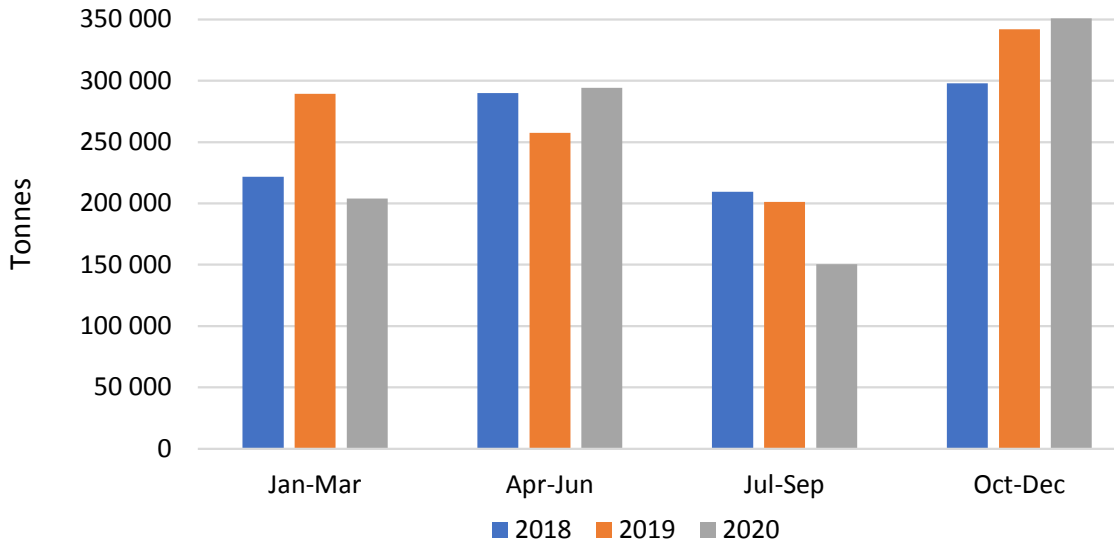
According to official statistics, the cotton area accounted for about 186 000 hectares in 2020. Cotton was previously grown under obligatory quotas and currently it is still the main cash crop. During the last ten years, the quotas were relaxed and more flexibility was granted to farmers. However, the production of cotton is associated with an established system of mandatory sale through cotton factories. The existence of long-term cotton debts at household level have restricted farming options to seek for markets that are more profitable. In addition to the direct competition for land during the spring and early summer, growing cotton does not allow farmers to plant a second crop in mid-summer as its growing season is longer than that of winter wheat which is harvested between June and August and allows the planting of second season crops such as maize, potatoes and vegetables.

The country imports several basic food items, including wheat grain and flour, oil, seeds, sugar, fruits, vegetables, meat and dairy products to cover its domestic needs. In 2019, imports of wheat grain amounted to about 1 million tonnes[6] and the volume of wheat flour to 85 800 tonnes.[7] Imports of wheat flour amounted to 40 percent of the total domestic demand.

[6] AoS.

[7] The flour extraction rate from wheat is 71 percent.

Figure 3: Tajikistan - Wheat imports, 2018-2020



Source: AoS, 2020.

As the country significantly relies on imports of wheat to satisfy its domestic demand, the COVID-19 pandemic and consequent rise in demand and implementation of export restrictions in Kazakhstan, the main supplier of wheat to the country, domestic prices have increased in the second quarter of 2020.

According to data from AoS, imports of wheat grain have kept up with the pace of the previous years, despite the outbreak of the COVID-19 pandemic and the implementation of movement restrictions in the country. Wheat flour export restrictions imposed by Kazakhstan had little impact on the wheat flour availability in Tajikistan, as milling companies remained operational throughout the pandemic.

The main export commodities are cotton, vegetables and fruits, exported volumes of which in 2019 amounted to USD 180 million[8] and 14.8 million[9], respectively. This export income covers about 72 percent the cost of imported wheat, flour and mineral fertilizers (in 2019, wheat grain and flour imports amounted to USD 145 million).

Farms structure

In the privatization of State assets that followed the break-up of the former Soviet Union, new forms of management evolved relating to land reform, changing in the structure of the agricultural sector. The structure of agriculture is now based on three types of farms: (a) agricultural enterprises: resulting from the privatization of specialized state farms; (b) *dehkan* farms: cooperative and private resulting from worker accessions of collective (*kolkhoz*) land on a group or individual basis; and (c) family plots: household plots, including President's plots (Table 2). Enterprises are large-scale units, former State farms taken over by companies during the privatization. The private *dehkan* farms (172 678 farms) are managed by *dehkan*/farm chairmen on behalf of workers with land share certificates. They are fully privatized with the right to joint land use, which is given to owners of private land holdings with a lease of 50 years. They have the right to buy and sell this land share certificates. The agricultural enterprises and farms are tax-paying registered businesses. Household plots/kitchen gardens are an important household asset and have probably been

[8] AoS/Statistical Yearbook, 2019.

[9] AoS/Food Security and Poverty, No.4 - 2017, 2019.

Table 2: Tajikistan - Structure of farms, as of 1 January 2019

Farm category	Quantity (units)	Agricultural land area (hectares)	Average farm size (hectares)	Area (percent)
Agricultural enterprises	4 769	125 609	26.3	14.92
Dehkan farms	172 668	536 026	3.1	63.65
Household farms	1 524 000	180 453	0.1	21.43
TOTAL	**-**	**842 088**	**-**	**100.00**
Including President's plots	375 000	58 833	0.2	-

Source: AoS/Statistical Yearbook, 2019.

responsible for the subsistence of most families for decades. The majority of the families in rural areas and smaller towns, have access to a small plot (0.08-0.2 hectares) of land, usually adjacent to their homes. Some part of the produce from the household plots is supplied to the local markets, the accumulation of which by traders involved in trading networks supply the cities and exports to other CIS. The area under productive cultivation in such units was increased by 75 000 hectares under a Presidential Decree in 1997.

These decrees also allocated "President's Plots" giving access to land for more urban dwellers. However, not all farmers who received "President's Plots" were able to effectively use these areas and, at the beginning of 2019, only 58 833 hectares (or 78.4 percent) of such land plots remained (Table 2).

Precipitation and calendar of agricultural activities

The country has abundant surface water resources, sufficient for irrigated cropping. Glaciers are the main source of water for agriculture, but about 55 percent of the area is rainfed, where cereal crops are sown before the winter and yields mainly depend on rainfall during the growing season. The area planted with cereal and oilseed crops in the rainfed lands of the foothills tends to increase in years with favourable rains. The rains usually start in September and last until May, which create optimal conditions for the autumn and spring sowing and for crop growth during the spring months. In years with abundant snowfall, the melting of the snow provides a significant amount of moisture needed for crop growth in rainfed areas. The absence of precipitation from June to October determines the high dependency of spring crops of the first main season crop and cereals of the second season crop on supplementary irrigation.

The first (main) season crops are planted in part in the autumn, from October to December (mainly wheat, partly barley and pulses), and in part in the spring, in March-April (wheat, barley, maize, rice and cotton). Planting of the second (small) season crops (maize, sorghum, soybeans, beans, vegetables and potatoes) takes place after the harvest of winter and spring cereals in June-July (Table 3). The planting of vegetables can take place all year round, especially in farms with greenhouses.

As about two-thirds of the crops are grown on irrigated land, water use controls are of particular importance. The present system is an adaptation of the inherited former Soviet Union system where the primary supply is controlled and managed by the relevant Ministry departments and WUAs. In certain zones, the responsibility for the distribution of water for irrigation has been transferred to WUAs, which are supported by international organizations. However, several WUAs have limited capacity for maintaining the irrigation facilities and ensuring a stable water supply.

Table 3: Tajikistan - Crop calendar for major food crops

First season	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
South												
Wheat (autumn)												
Wheat (spring)												
Maize												
Rice												
Potatoes												
Centre												
Wheat (autumn)												
Wheat (spring)												
Maize												
Rice												
Potatoes (autumn)												
Potatoes (spring)												
North												
Wheat (autumn)												
Wheat (spring)												
Maize												
Rice												
Potatoes												
Mountain												
Wheat												
Maize												
Potatoes												

Second season	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
South, Centre and North												
Maize												
Potatoes												

Sowing Growing Harvesting

Source: AoS, 2020.

Crop patterns

Since the former Soviet Union period, cotton has been the main cash crop in the country. Over the years, exports of cotton accounted for 75 to 90 percent of total agricultural exports. Cotton is grown on irrigated lands and its cultivation requires a certain volume of inputs. The centralized procurement system of cotton is based on the determination of growing mandatory quotas for each district. After 1997, the State procurement system for other crops and raw materials ceased to exist, but the production of cotton remained under State control.

At the same time, since 2007, the mandatory quota system for cotton areas has become less stringent and farmers have been able to allocate their land to other crops with a greater flexibility. As a result, in recent years, cotton cultivation has decreased significantly. The collapse of the former Soviet Union system led to the breaking of State-supported supply chains and cotton production was cut by half. The constant failures in the management of the cotton industry at all levels in the post-Soviet Union period have led to large debts at every stage of the value chain, from farms and ginneries to cotton fiber wholesaler organizations. In addition, indebted farmers do not have enough resources to acquire the inputs needed for the cultivation of other crops.

Since 2019, there has been a trend towards a decrease in the cotton area to 186 000 hectares. Theoretically, an increase in the share of cotton growing, combined with a cotton debt remission, opens up opportunities for cash crops production and sale of a wider range, as well as increased production of staple crops. In practice, manifestation of such opportunities depends on the proper and timely functioning of the water delivery systems; and increased exporting of products depends on the ability of traders to cope with Tajikistan's bureaucracy for exporting goods.

Wheat is the main produced grain and food crop. In recent years, both in agricultural farms and private *dehkan* farms, the area planted with wheat has significantly expanded in the irrigated areas where cotton was previously grown. Here, water is supplied no more than once or twice per season. The wheat plantings on the household farms (garden plots) are increasing and are partially replacing barley. Domestic wheat production covers about half of the local demand of bread and the rest is imported mainly from Kazakhstan.

An approximate breakdown of crop production by type of farm is provided in Table 4. According to official statistics on domestic production, in addition to cotton, 46 to 62 percent of all field crops are grown on *dehkan* farms. *Dehkan* farms produce mainly agricultural products such as wheat, barley, rice, potatoes and cotton. Smallholders with household plots produce from 20 to 50 percent of the production of pulses, maize, vegetables and fruits. Agricultural enterprises account for only 3 to 17.5 percent of the food crop production and 20 percent of the cotton production.

Table 4: Tajikistan - Agricultural production by farm category, 2019 (percent)

	Crops								
	Wheat	**Barley**	**Maize**	**Rice**	**Potatoes**	**Pulses**	**Vegetables**	**Fruits**	**Cotton**
Households	27.6	19.4	48.0	21.6	31.9	49.9	41.7	46.5	0.0
Dehkan farms	62.4	67.7	46.1	60.9	59.2	47.4	53.5	47.9	80.3
Agricultural enterprises	10.0	12.9	5.9	17.5	8.9	2.7	4.8	5.6	19.7
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: AoS/Statistical Yearbook, 2019.

Agricultural inputs

Seeds

About 80 percent of the interviewed farmers reported that they use seeds purchased from seed farms and agro-shops, while about half of them use their own seed from the previous year's harvest). About two-thirds of the farmers also use seeds purchased at the market, which have low quality and unknown origin. This is the main cause of poor germination, increase in diseases and weeds, and low yields. The purity of varieties is often questionable. In small farms, seeds are rarely pre-treated with fungicides.

Fertilizers, chemicals and machinery

Fertilizers, chemicals, machinery and fuels are mainly imported from the Russian Federation, Kazakhstan and Uzbekistan. Some fertilizers come illegally from neighbouring republics. The most widely used fertilizers are ammonium nitrate and urea, which reportedly contain an average of 34.5 and 46 percent of nitrogen, respectively.

Fertilizers are mainly used in cotton fields as well as in wheat cultivation. While the basic application of phosphate fertilizers has become rare and potassium fertilizers are not used, the application of nitrogen fertilizers in the spring remains part of the standard agro-technical practice. Soil fertility in household/ garden plots and parts of *dehkan* farms is restored annually due to the application of manure, while this practice is not feasible in agricultural enterprises where the need of manure is too large.

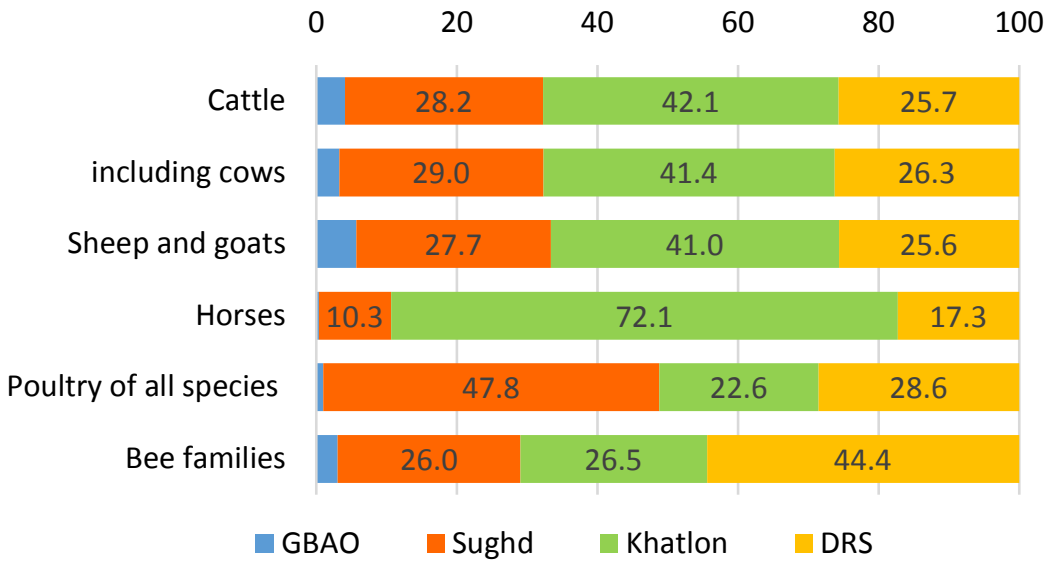
Migratory pests remain a primary concern for the Government. Following the pattern established during the former Soviet Union period, thousands of hectares of the semi-desert grasslands bordering Afghanistan, which are breeding areas for the *Calliptamus italicus* (the Italian locust) and *Dociostaurus maroccanus* (the Moroccan locust) locusts, are regularly blanket-sprayed with broad spectrum pesticides. This practice aims to control the hopper (larval) generations before they reach the flying stages and threaten field crops in nearby arable areas.

Livestock

As of 1 January 2020, there were about 2.4 million cattle, including 1.3 million cows, 5.7 million sheep and goats, about 81 000 horses, over 9 million poultry of all types and about 232 000 bee families.

The largest share of cattle, 42 percent (of which cows 41 percent), sheep and goats 41 percent, horses 72 percent, poultry 23 percent and bee families 26.5 percent were concentrated in Khatlon Region (Figure 4). The share in Sughd Region is

Figure 4: Tajikistan - Distribution of livestock, poultry and bee families by region, 2019 (percent)



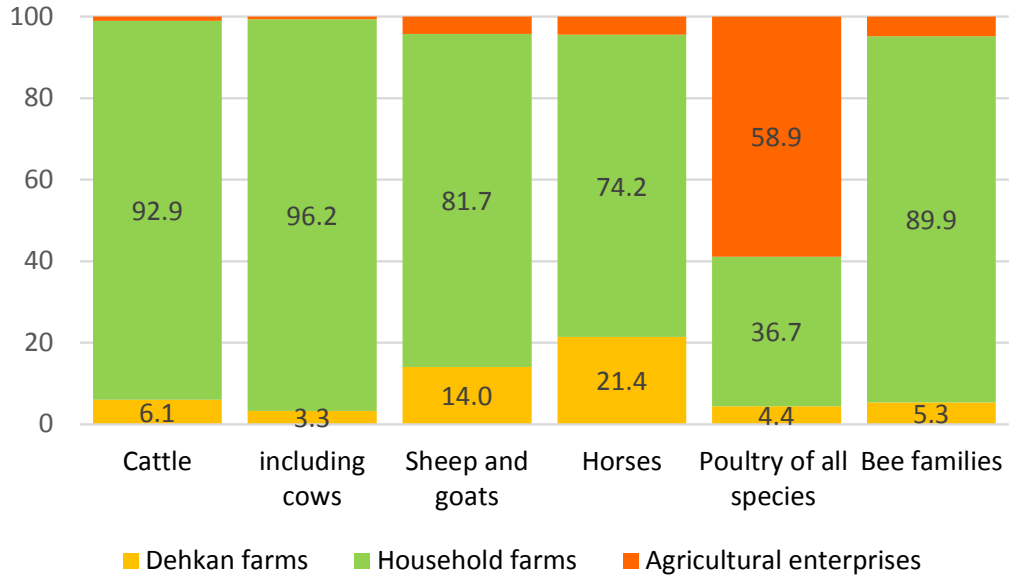
Source: AoS/Statistical Yearbook, 2019.

28 percent (of which cows 29 percent), sheep and goats 28 percent, horses 10 percent, poultry 48 percent and bee families 26 percent.

The share of DRS comprises cattle 26 percent (of which cows 26 percent), sheep and goats 26 percent horses 17 percent, poultry 29 percent and bee families 44 percent.

Tha largest share of livestock (including bee families), with the exception of poultry of all species, is concentrated in household farms, which varies from 73 to 93 percent of their total number. However, in relation to the number of poultry, agricultural enterprises exceed with 59 percent compared to 37 percent in households (Figure 5).

Figure 5: Tajikistan - Distribution of livestock, poultry and bee families by farm categories, 2019 (percent)



Source: AoS/Statistical Yearbook, 2019.

CROP PRODUCTION

Factors affecting cereal crop production

Temperature and precipitation

The Mission received and analyzed data on temperatures and precipitation provided by the State Agency for Hydrometeorology of the Republic of Tajikistan (Hydromet). The average monthly data on temperature and precipitation in the four zones of Khatlon, Sughd, GBAO regions and in DRS are reported in Figure 6[10] which shows rainfall patterns that support winter and spring crops growth. The absence of rain in all regions from June to November indicates a high level of dependency of late spring sown and second season planted crops on, at least, supplementary irrigation and the importance of good water management practices. Snowmelt also provides substantial quantities of moisture to support growth in the rainfed sectors in years of heavy snowfall. Precipitation in November 2019 contributed to wheat sprouting in rainfed areas.

The average annual temperature in 2019 in Khatlon was 7 percent higher than its average annual value, while in Sughd and central Tajikistan it was 11 percent higher. Only in GBAO, there was a decrease in the average annual temperature for 2019 compared to the long term average by 3 percent.

Precipitation in 2019 fell by 66 mm in Khatlon and by 28 mm in central Tajikistan compared to the average annual amount. In GBAO and Sughd 126 mm and 46 mm, respectively, less precipitation fell in comparison with the average annual amount of precipitation. The main amount of precipitation in all zones fell in the autumn, winter and spring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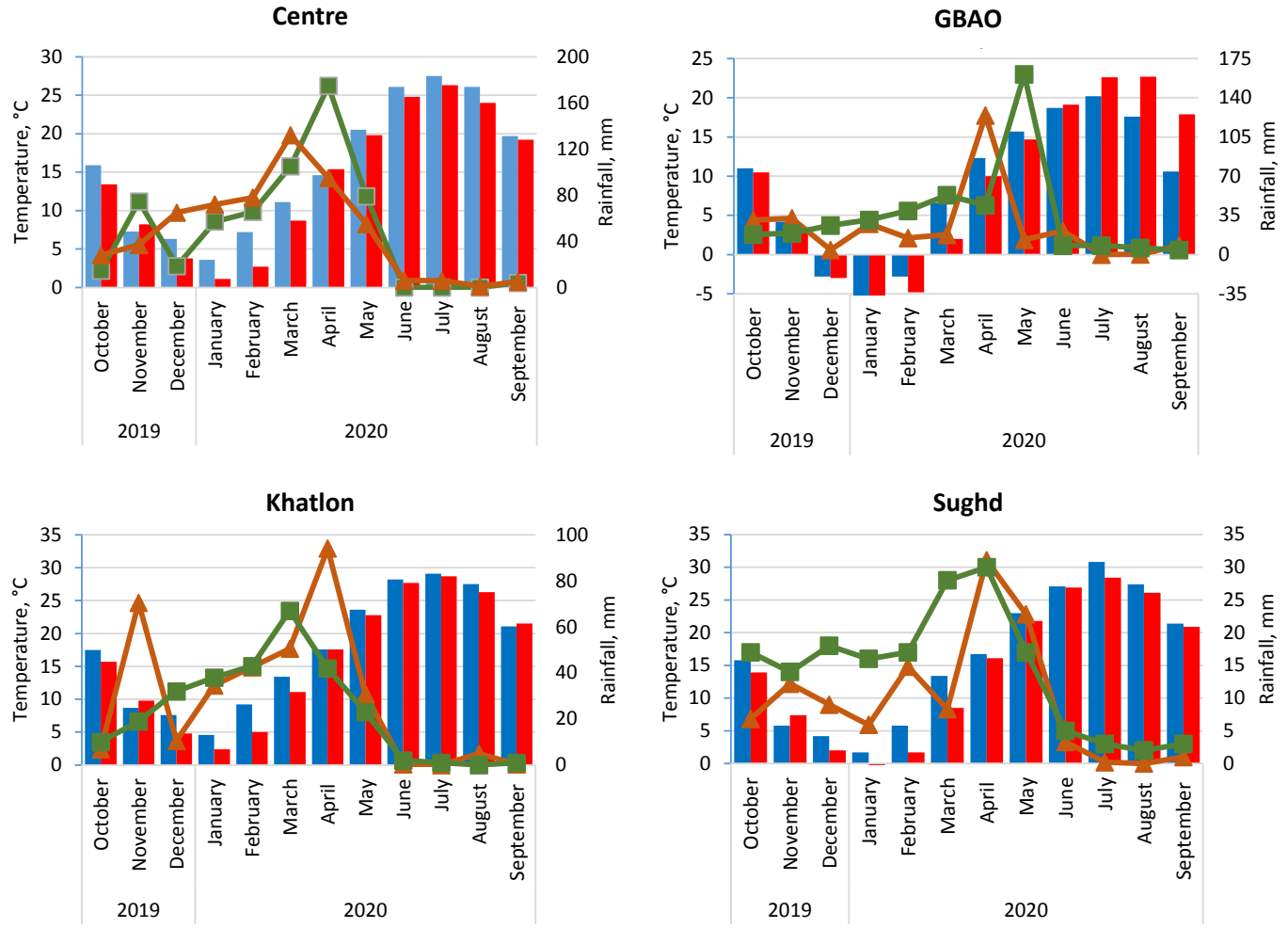
periods, which contributed to the good growth and development of the grain crops. However, in Sughd, crops were affected by a decrease in precipitation amounts in rainfed lands that had no additional irrigation.

In general, the country has abundant surface water resources to sustain a core crop-producing area of about 700 000 hectares where irrigation systems are properly functioning, albeit with problems connected to delivery, particularly power supply for pump schemes. Despite the needs for improvements in the maintenance and efficiency of use, it is anticipated that the existing irrigation facilities still allow cultivating about 100 000 hectares for the second cropping in the summer.

Observations during the field visits suggest that a majority of this area is cultivated with maize for both grain and fodder, legumes (mung beans and soybeans) and rice.
Based on information provided by farmers and

[10] Hydromet.

Figure 6: Tajikistan - Temperature and rainfall, 2019-2020



Source: Hydromet.

key informants in selected regions/zones, it can be concluded that the 2019/20 rainfall season has been average in terms of both quantity and quality. Adequate rainfall amounts at planting time created favourable conditions for the expansion of crop lands, in particular on rainfed lands, which are not always used for the cultivation of crops and depend on the amount of precipitation and on irrigated lands, reducing the need for irrigation.

In Sughd Region, about 50 percent[11] of the farmers felt a shortage of irrigated water, while one-third of them reported that rainfall was normal in 2020 and 20 percent of them received above-average rainfall amounts. It should be noted that abundant snowfall in the central part of the country in early April 2020 caused a number of mechanical damages to broken branches of fruit trees, which contributed to a decrease in yields.

The Mission found the following shortcomings in irrigation water supply and lack of precipitation in 2020, in particular:

- During the growing season of the winter grain crops, there was a sufficient amount of precipitation in the foothills, but less in the valleys, especially in the autumn. Heavy rainfall and cold weather in April damaged standing grain crops.

[11] Hereinafter CFSAM data.

- In the spring (March-May), irrigation pumps started to supply water to the canals late and, in the autumn, they were turned off early, with a negative impact on crops that were in need of additional delivery of irrigation water. The limited supply of electricity and the outdated equipment of pumping stations compounded the situation.
- The deterioration of the irrigation infrastructure hindered the full-bodied supply of water during the growing season of the grain crops. Canals and ditches were not always properly cleaned and, as a result, their capacity and service area were reduced.
- In 2020, due to a decrease in water in the Vakhsh River, pumping stations had a partial shortage of irrigation water during the growing season of the crops.
- An unsolved problem remains the cleaning of the collector-drainage system of water discharge. Silting and clogging of this system led to an increase in the level of groundwater and re-salinization of irrigated land, which led to a decrease in crop yields.

According to the data obtained by the Mission, in Sughd Region, over 90 percent of the irrigation water comes directly from the rivers, while the rest is from canals with pump irrigation. By contrast, in Khatlon Region, pump irrigation prevails with about 60 percent and the rest receives water through flow irrigation from the river. In this zone, 45 percent of the pumping units are in the private sector and only 15 percent are State-owned. In DRS, 70 percent of the respondents use gravity-flowing river water for irrigation and 14 percent take water from canals with pump irrigation. About 9 percent of the respondents reported about the use of water trucks for crop irrigation.

Seeds

In 2020, out of 268 375 hectares of the total wheat area planned by the MoA, 209 366 hectares were cultivated with winter crops and 59 009 hectares with spring crops. The volume of planned demand for seeds was about 419 000 tonnes for winter wheat and 13 000 tonnes for spring wheat. Domestic seed production provided 90 percent of the total demand for winter varieties and 95 percent for spring varieties. The uncovered demand was covered by imports.

The Government supports seed supply by allocating funds for direct purchases from the Russian Federation (Krasnodar Krai) and ensures the availability of high-quality seeds. In 2020, the country imported wheat seeds from the Russian Federation in the amount of 36.3 tonnes, maize seeds from China in the amount of 123 tonnes, potato tubers from the Russian Federation, Kazakhstan and Germany in the amount of 202 tonnes and cotton seeds from China and Turkey in the amount of 188 tonnes.

Chemical treatment of seeds with disinfectants is very rare among small and medium-sized farms. The seeding rates for wheat and barley largely correspond to the former Soviet Union agro-technical system: the high density of winter wheat after tillage should ensure about 600 heads of wheat per square metre at the time of harvesting. In 2020, the wheat seeding rate was 220 kg/hectare in Khatlon Region and 200-210 kg/hectare in Sughd Region and DRS (Table 5), while in the mountain valleys, according to the interviewed farmers, up to 250 kg of seeds were sown on 1 hectare. The high seeding rates were used to compensate for freezing during the winter and weeds during the spring. At the same time, the cotton seeding rate was 110 kg/hectare for the farms in Sughd Region and 90-95 kg/hectare in Khatlon Region and DRS, respectively.

The planting rate of potatoes in all regions is slightly more than 3 tonnes/hectare. In Sughd Region, the seeding rate for cotton was 104 kg/hectare, about 10-15 percent higher than the other regions as during the cotton sprouting there was a lack of soil moisture and seedlings were thinned out.

According to Mission data, the seeds purchasing price also varied widely. Seeds of wheat, barley, maize and potatoes were more expensive in Khatlon Region compared to other regions, mainly due high transportation costs.

Table 5: Tajikistan - Seeding rates and prices for main crops, 2020

Region	Seeding rate (kg/hectare)					Price (TJS/kg)				
	Wheat	Barley	Maize	Potatoes	Cotton	Wheat	Barley	Maize	Potatoes	Cotton
Khatlon	220.0	220.0	31.1	3 000	88	4.1	3.9	34.2	6.6	8.0
Sughd	201.6	192.0	25.5	3 000	104	3.2	3.5	25.9	3.7	5.9
DRS	198.0	180.0	35.6	3 142	95	3.8	3.0	31.6	3.9	9.0

Source: CFSAM, 2020.

Fertilizers

In recent years, the use of fertilizers has been increasing (Table 6). The use of mineral fertilizers, mostly imported, in terms of 100 percent nutrient value in 2019 exceeded the previous year by over 10 percent and organic fertilizers by 54 percent. Although 26 percent less mineral fertilizers were used for potatoes, the use of organic fertilizers increased by more than two times. This indicates that more farmers are adopting organic practices and the use of organic fertilizers for industrial crops has also increased.

Most fertilizers were used on cotton, mainly cultivated by the enterprises and the private *dehkan* farms with base applications of phosphate and two split top dressings of nitrogenous fertilizer, comprising in total more than 600 kg of product per hectare. More than 300 kg of fertilizers per hectare were regularly used on wheat, maize and rice. Although base dressing of phosphates is now uncommon and potassium is not applied, most crops receive nitrogenous fertilizers during the growth and development stages. At the household plot and President's plot level, some nitrogenous fertilizers are noted to have been used also on wheat in 2020. However, on such plots, soil fertility is generally maintained by the application of Farm Yard Manure (FYM) on wheat, potatoes and other vegetables. Small plot farmers in both household plots and dehkan farms on potatoes and vegetables apply from 8 to 10 tonnes of organic fertilizers and they adopt alfalfa-based rotations to maintain fertility of their plots.

Table 6: Tajikistan - Mineral and organic fertilizer use for staple agricultural crops (000 tonnes)

Indicators	2014	2015	2016	2017	2018	2019	Difference 2019 compared to 2018
Total mineral fertilizers (in terms of 100 percent nutrient value)	**56.7**	**58.3**	**50.9**	**59.6**	**61.2**	**67.9**	**110.9**
Including on - cereal crops	14.6	16.1	16.2	17.9	15.4	16.6	107.8
- potatoes	3.8	4.9	4.8	3.7	6.6	4.9	74.2
- industrial crops	31.5	28.9	22.6	28.5	28.7	34.6	120.6
Total organic fertilizers	**188.6**	**192.9**	**205.1**	**185.3**	**172.3**	**265.4**	**154.0**
Including on - cereal crops	66.4	74.4	77.4	73.0	65.0	37.4	57.5
- potatoes	83.5	77.8	83.3	57.6	53.0	124.7	235.3
- industrial crops	14.6	12.8	14.7	19.5	18.1	38.9	214.9

Source: AoS/Statistical Yearbook, 2019.

The Mission found that 75 to 85 percent of the interviewed farmers use ammonium nitrate as a nitrogen fertilizer and 75 to 100 percent of them use urea (Table 7). The wider use of urea rests on two main reasons: (a) it contains more nitrogen active substance and (b) its unit price is lower than the price of ammonium nitrate. As a phosphorus-containing fertilizer, farmers mainly use superphosphate. One-third of the farmers in Sughd Region and 9-10 percent in DRS and Khatlon Region use this fertilizer. About 25 percent of the farmers in DRS and Sughd Region and 50 percent of farmers in Khatlon Region use combined fertilizers that contain two or three types of macro-nutrients. This is due to that, at almost the same price, farmers can apply not only nitrogen, but also phosphorus and potassium. The advantage of using this type of fertilizer is also the reduction in the cost of fertilization services.

Limited data were obtained by the Mission on the use of organic fertilizer (manure) in Khatlon Region and only a few interviewed farmers reported that they used manure in the amount of 2.5 tonnes/hectare. By contrast, about two-thirds of the farmers of Sughd Region and DRS reported to apply on average 12 and 15 tonnes per hectare of manure, respectively.

Table 7: Tajikistan - Use and price of mineral fertilizers by respondents, 2020

Region	Use of mineral fertilizers (percent of interviewed farmers)				Price (TJS/kg)			
	Ammonium nitrate	Carbamide	Super phosphate	NPK	Ammonium nitrate	Carbamide	Super phosphate	NPK
Khatlon	85.5	100.0	10.9	23.6	4.8	4.3	3.7	4.4
Sughd	74.1	74.1	32.8	24.1	3.4	3.3	3.6	4.1
DRS	82.1	85.7	8.9	48.2	3.9	4.2	4.0	4.8

Source: CFSAM, 2020.

Crop pests and diseases

During the Mission, the following pests and diseases were most frequently mentioned by the farmers: Italian (*Calliptamus italicus*) and Moroccan (*Dociostaurus maroccanus*) locusts on all crops, Stripe Rust (*Puccinia striiformis West*.), Head Smut (*Tilletia caries [DC.] Tul.*) on wheat; Maize Worm (*Ostrinia nubilalis*), Colorado Potato Beetle (*Leptinotarsa decemlineata*) and Cotton Budworm (*Helicoverpa armigera Hubn.*) on maize; Onion Fly (*Delia antique Mg.*), False Mildew (*Peronospora destructor Casp.*) and Tobacco Thrips (*Thrips tabaci*) on onions; Powdery Mildew (*Erysiphe cichoracearum and Sphaerotheca fuliginea*) and Downy Mildew (*Pseudoperonospora cubensis Rostowz.*) on melons; Colorado Potato Beetle (*Leptinotarsa decemlineata*), Winter Moth (*Agrotis sp. Segetum*), Wireworms (*Conoderus sp.*) and Damping-out (*Erwinia carotovora*) on potatoes; Aphids (*Aphis gossypii, Aphis craccivora va Acyrhosiphon*), Red Spider (*Acyrhosiphon gossyp. et Nik.*), Gummosis (*Xanthomonas campestris p.v. malyacearum [Sm]*), Cotton Moth (*Helicoverpa armigera and Hubn.*) and Winter Moth (*Agrotis segetum X.Schiff.*) on cotton; Green Apple Aphid (*Aphis pomi Deg.*), Fruit Tree Red Spider (*Metatetranychus ulmi Koch.*), Apple Worm (*Carpocapsa [Laspeyresia] pomonella L.*) and Apple Ermine Moth (*Hyponomeuta malinella L.*) on fruit crops. Especially, in recent years, the Tomato Moth (*Tuta absoluta Meyr.*), one of the most dangerous pests for tomatoes, has become widespread.

Significant damages to crops were due to the Italian and Moroccan locusts, especially in sub-mountainous areas. During the field interviews, farmers reported outbreaks of Stripe Rust and Head Smut on grain crops, particularly during the spring.

As noted in section "Agriculture inputs", the Government intervention regarding pest control is mainly related to locusts. As of 5 July 2020, 93 500 hectares[12] of land were chemically treated throughout the country, including 59 600 hectares in Khatlon Region, 24 500 hectares in Sughd Region, 9 000 hectares in DRS and 255 hectares in Darvaz District of GBAO. Treatments took place in the fields where locusts were breeding. At farm level, in addition to the rigorous pesticide treatment of cotton crops, private purchases of pesticides from the commercial network have been reported in all districts. Pesticides were used to protect potatoes from the Colorado Potato Beetle, to control the Winter Moth, Aphids and the Turkestani Moth (*Euproctis kargalika*) in gardens.

The Mission acknowledged that pesticides are widely used in the country to control pests and diseases. From 20 to 35 percent of the interviewed farmers use chemical pesticides such as *Nurel-D, Karate, Bi 5*8 (new), *Typhoon*, *Omayt* and *Mospilan*, while others have started using biologically active substances and antibiotics. The farmers unanimously replied that they have adequate access to pesticides and they mainly buy them from agro-shops that sell certified and licensed products. On the markets, there are also pesticides for controlling non-migratory pests and these are often used to protect cash crops, primarily cotton, as well as to protect orchards, vegetable and fruit plantations.

Over the past years, due to the efforts of the international organizations whose agricultural projects are being implemented throughout the country, a large number of farmers have been involved in trainings on the correct use of pesticides and compliance with safety measures during their use.

Weed control is almost entirely conducted manually. When visiting 26 districts, the Mission noted that there were no weeds in cotton fields that were necessarily loosened (manually or mechanically), while the situation was worse in the fields with other crops. In 2020, in the fields of wheat and other grain crops, manual weeding was carried out only one time, during the application of top dressing or just before it, or it was not conducted at all. In fact, it was noted that wheat fields, especially in Kurgan-Tyube Zone of Khatlon Region, were significantly infested by persistent weeds such as Oat-Grass (*Avena fatua L.*) and Rapeseed (*Brássica nápus*). In maize fields, weeding is often done manually and rarely with machines. Potatoes and vegetables are also weeded manually, often using households' labour resources.

[12] https://tj.sputniknews.ru/incidents/20200618/1031432284/Tajikistan-nashestvie-saranchi.html.

Farm mechanization

Over the past few years, due to the efforts of the Government and the support of international donors, a large number of new farm machinery items have been imported and the machine and tractor fleet has been significantly renewed. The number of tractors of all models in the country increased by 2 percent in 2019 compared to 2018. The number of combine harvesters, seed planters/sowers and cultivators increased by 3-5 percent. Depending on the region, each unit of machinery serves from 17 to 37 hectares of arable land (Table 8).

Table 8: Tajikistan - Availability of farm machinery (units)

Region	2014	2015	2016	2017	2018	2019	Arable land (unit/hectare)
Tractors of all models							
Dushanbe	-	-	-	54	62	134	0.5
GBAO	61	50	220	236	244	242	36.6
Sughd	4 806	4 125	8 720	8 606	8 611	8 548	26.3
Khatlon	4 497	4 021	12 230	12 144	12 639	13 155	25.1
DRS	1 082	1 001	4 932	5 365	5 578	5 697	17.5
Total	**10 446**	**9 197**	**26 102**	**26 405**	**27 134**	**27 776**	**23.9**
Tractors harvesters							
Dushanbe	-	-	-	3	3	19	3.5
GBAO	1	1	1	1	1	2	4 427.5
Sughd	174	156	403	399	396	418	537.8
Khatlon	196	150	406	455	469	486	679.6
DRS	76	68	170	163	155	174	574.4
Total	**447**	**375**	**980**	**1 021**	**1 024**	**1 099**	**604.1**
Tractor-mounted sowers							
Dushanbe	-	-	-	-	-	34	1.9
GBAO	1	1	1	1	1	1	8 855.0
Sughd	1 094	922	992	966	955	960	234.2
Khatlon	975	864	1 142	1 116	1 132	1 209	273.2
DRS	239	213	240	227	219	211	473.7
Total	**2 309**	**2 000**	**2 375**	**2 310**	**2 307**	**2 415**	**274.9**
Tractor-mounted cultivators							
Dushanbe	-	-	-	-	-	26	2.5
GBAO	3	3	21	25	25	25	354.2
Sughd	1 494	1 321	1 348	1 325	1 319	1 275	176.3
Khatlon	1 197	1 062	1 471	1 552	1 681	1 765	187.1
DRS	258	228	292	272	243	291	343.5
Total	**2 952**	**2 614**	**3 132**	**3 174**	**3 268**	**3 382**	**196.3**

Source: AoS/Statistical Yearbook, 2019.

The small and household farms that use tractors usually hire them from the large farms. The Mission noted that the rent price is essentially determined by demand and it varies considerably across regions and among districts of the same region (Table 9).

Although the average rent price in 2020 was higher than the previous year, in the areas where new tractors were available through leasing companies and international organizations, their high efficiency has reduced rental costs.

Table 9: Tajikistan - Summary of key informants' opinions regarding farm machinery and manual power in 2019/20 season, by region[1/] (cost in TJS/hectare, manually/machinery in percent)

Region (7 districts visited in each region)	Khatlon	Sughd	DRS
Plowing			
- Manually	n/d	2	n/d
- Using machinery	93	95	77
- Cost machinery service	330-800	225-800	300-1 000
Chiseling			
- Using machinery	n/d	67	38
- Cost machinery service	120-200	150-400	200-1 000
Trenching (ridging)			
- Using machinery	n/d	78	13
- Cost machinery service	n/d	60-400	300-800
Land leveling			
- Using machinery	20	64	13
- Cost machinery service	120-450	150-350	300-500
Sowing			
- Using machinery	67	48	16
- Cost machinery service	100-170	Machinery 100-170 Workforce 100-300	300-600
Inter-row cultivation			
- Using machinery	62	60	14
- Cost machinery service	90-200	400-1200	35-500
Treatment by pesticides			
- Using machinery	n/d	64	n/d
- Cost machinery service	n/d	100-390	35-200
Harvesting			
- Using machinery	56	83	18
- Cost machinery service	500-600	280-800	300-320
Pressing			
- Using machinery	n/d	2	1.3
- Cost machinery service	n/d	n/d	n/d

Source: AoS, 2020.
[1/] CFSAM data.
n/d = no data.

Due to the spread of the COVID-19 pandemic and the restrictions on travel, a large number of the working age population who used to work abroad was forced to stay in the country. This has caused an excess of labour resource in parts of the country that wasoften used to carry out manually some agricultural practices.

The cost of manual labour, especially for weeding, ranges from TJS 100 to TJS 300/day and depends on the region. During manual or combine harvesting/ threshing, the in-kind price was almost identical in all zones, averaging 100 kg of grain per tonne of harvested or threshed crop. In 2020, some increases of overall machinery service prices were observed, most likely due to the increased prices of fuel.

Cereal planted area in 2020

In recent years, the planted area of cereal crops has been increasing due to the reduction in the area of other crops. According to AoS data, in 2020, the planted area with cereals of the first harvest season, increased by 1.5 percent (by 5 789 hectares) compared to the same season in 2019. The area increased by 3 800 hectares in Sughd Region, it decreased in GBAO by 355 hectares and in DRS by 1 559 hectares, while in Khatlon Region, the crop production areas under cereals was stable:

- In 2020, total wheat area was 268 374 hectares, 1.7 percent above 2019.
- Total barley area was 70 546 hectares, 1.8 percent below 2019.
- Total maize area was 17 238 hectares, 1.7 percent above 2019.
- Total rice area was 12 944 hectares, 4.4 percent above 2019.

The planted area with other crops in the first season in 2020 compared to 2019 increased by 7.5 percent for potatoes, with 47 868 hectares[13] suitable for harvesting, and by 0.3 percent for cotton to 186 155 hectares.

Planted area with cereal crops and cotton in 2019 and 2020 is shown in Table 10. In 2020, wheat area in Sughd Region increased by more than 7 percent compared to 2019, mainly due to a reduction in the area planted with barley, maize for grain and oats. Wheat area increased by about 180 hectares in

Table 10: Tajikistan - Crop sown areas in the first season (hectares)

Crop	Khatlon		Sughd		DRS		GBAO		TOTAL	
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Wheat	161 466	161 652	46 483	50 077	53 770	54 159	2 241	2 486	263 960	268 374
Barley	13 074	11 596	50 998	50 202	7 187	8 083	567	665	71 826	70 546
Maize for grain	6 496	6 988	68 48	6 444	3 598	3 784	16	22	16 958	17 238
Rye	-	-	165	1 443	73	29	-	-	238	1 472
Oats	-	-	2 030	1 714	64	18	-	-	2 094	1 732
Rice	2 264	2 365	8 920	9 200	1 210	1 379	-	-	12 394	12 944
Pulses	4 963	5 672	4 764	4 993	4 955	4 964	1 619	1 625	16 301	17 254
Cotton	122 097	124 175	58 455	58 905	5 119	3 075	-	-	185 671	186 155
Potatoes	12 475	10 606	22 450	15 720	14 831	20 250	1 999	12 925	51 575	47 868
Vegetables	34 884	36 524	15 887	17 232	15 573	15 367	672	662	67 016	69 785

Source: AoS, 2020/Results of sown areas in the Republic of Tajikistan.

[13] CFSAM data.

Khatlon Region and by 400 hectares in DRS. In DRS, the area with potatoes increased by 37 percent, while it decreased by 30 percent in Sughd Region. In Khatlon Region, the sown area with barley and potatoes decreased significantly, by 1 478 and 1 869 hectares, respectively. Here, the cotton area has increased by 2 078 hectares. In DRS, the cotton area has decreased by more than 2 000 hectares. The area planted with vegetables increase in Khatlon and Sughd regions by 1 640 and 1 325 hectares, respectively.

For the 2020 harvest, wheat and barley were sown in the autumn on large areas (233 000 hectares), or 2.2 times more than the sown area of these crops in the spring. The total area with grain crops in the autumn and spring was 399 300 hectares, which exceeded the area under crops of the second small season (rice, legumes and potatoes) by 4.4 times (Table 11).

According to the interviewed farmers, the main reasons for the change in planted areas in 2020 were the following:

- About 8 percent of the respondents believed that the general decrease is due to crop rotations.
- Decrease in vegetable crops area due to the difficulty in selling the products. Farmers do not directly sell their products on the market and intermediaries/wholesalers offer low prices.
- Decrease in barley area due to low productivity and profitability in previous years.
- Decrease in cotton area in Sughd Region due to a sharp decrease (about 30 percent) of the price in the internal market on September-October 2019.
- Increase in cotton area in Khatlon Region due to improved availability in 2020 of high-quality certified seeds.
- Increase in wheat and vegetables area due to use of inter-rows in orchards.

Table 11: Tajikistan - Planted area with main food crops, 2020 (hectares)

Crop	Area			
	First season[1/]		Second season	TOTAL
	Winter crops	Spring crops		
Wheat	209 366	59 009	-	268 375
Barley	23 826	46 720	-	70 546
Maize	-	17 238	20 397	37 635
Rice	-	12 944	9 759	12 944
Total cereals	**233 192**	**135 911**	**30 156**	**399 259**
Potatoes	-	47 868	1 821	49 689
Vegetables	-	69 785	15 790	85 575
Pulses	-	17 268	14 592	31 860

Source: AoS and CFSAM, 2020.
[1/] CFSAM data.

Crop production estimates - First season 2020

In 2020, the production of first season cereals was above the five-year average and significantly exceeded the previous year's level mainly due to an increase in yields of crops in the main agricultural zones of the country.

In general, timely and abundant rainfall amounts in the autumn in mountainous regions benefitted plantings of winter cereals. Between March and July 2020, adequate rains fell throughout the valleys, favouring the growth and development of crops in all areas visited by the CFSAM. According to interviews with *dehkan* farmers, yields of agricultural crops were estimated slightly above the five-year average.

Wheat, barley and maize yields by farmers differ from the average and they are higher by 1.6, 7.1 and 21.7 percent, respectively (Table 12). There was a slight increase in the yields of barley and maize among the interviewed farmers by 0.14 and 1.19 tonnes/hecgtare, respectively. The differences are most noticeable in the yields of potatoes by 3.2 tonnes/hectare lower than the last five-year average. All these data are preliminary, as a small number of farmers participated in the interviews.

During the first season, cereal crops were sown on an area of 390 000 hectares, which yielded a grain harvest of 1.28 million tonnes. Of this volume, the wheat harvest for the first season accounts for 846 000 tonnes and barley and rice for 150 000 and 60 000 tonnes, respectively (Table 13).

Table 12: Tajikistan - Yield estimates for first season crops, 2020 (tonnes/hectare)

Crop	Mission's estimates	Average yield 2015-2019	Difference (percent)
Wheat	3.15	3.10	1.6
Barley	2.12	1.98	7.1
Maize	6.40	5.26	21.7
Rice	4.60	4.77	-3.6
Pulses	1.70	1.71	-0.1
Potatoes	18.43	20.24	-8.9
Vegetables	28.76	25.48	12.9
Cotton	2.25	1.92	17.2

Source: AoS and CFSAM, 2020.

Table 13: Tajikistan - Production estimates for first season main food crops, 2020

Crops	Area planted (000 hectares)[1/]	Yield (tonnes/hectare)[2/]	Production (000 tonnes)
Wheat	268.37	3.15	846
Barley	70.55	2.12	150
Maize	17.24	6.40	110
Rice	12.94	4.60	60
Total cereals	**389.56**	**3.29**	**1 281**
Potatoes	47.87	18.59	890
Vegetables	69.79	28.76	2 007
Pulses	17.27	1.70	29

Source: AoS and CFSAM, 2020.
[1/] AoS/Statistical Yearbook, 2019 and results of the cropped areas in the Republic of Tajikistan.
[2/] CFSAM estimates.

Crop production estimates - Second season 2020

Sowing of the cereal crops in the second season was conducted within a minimum period and not more than one month after harvesting of the main crop (wheat, barley, potatoes and some vegetables). In 2020, the second season crop sown area throughout the country amounted to more than 102 000 hectares, from this area only 70 000 hectares were sown to food crops. The gross harvest of the 2020 second season crops calculated for cereals, legumes, oil plants and potatoes were made in order to provide baseline indicators for future food security programmes. Table 14 shows the planted area, yields and estimates of the second season gross harvest based on data collected by the Mission team.

When consolidating data of the first and second season crops, the total 2020 cereal production is estimated at about 1.28 million tonnes (Table 15).

According to the Mission, the planted area with vegetables and melons in 2020 has increased by about 4 percent compared to 2019 (Table 16).

Table 14: Tajikistan - Production estimates for second season main food crops, 2020

Crops	Area planted (000 hectares)[1/]	Yield (tonnes/hectare)[2/]	Production (000 tonnes)
Maize	20.4	3.51	71.6
Rice	9.8	4.04	39.4
Pulses	14.6	1.44	21.0
Oil plants	2.9	1.29	3.8
Potatoes	1.8	14.25	26.0
Vegetables	15.8	21.81	344.4
Melons	4.9	23.52	114.1

Source: AoS and CFSAM, 2020.
[1/] AoS/Statistical Yearbook, 2019 and results of the cropped areas in the Republic of Tajikistan.
[2/] CFSAM estimates.

Table 15: Tajikistan - Total production estimates for main food crops, 2020[1/]

Crop	First season		Second season		TOTAL	
	Area	Production	Area	Production	Area	Production
Wheat	268.4	846	-	-	268.4	846
Barley	70.5	150	-	-	70.5	150
Maize	17.2	110	20.4	72	37.6	182
Rice	12.9	60	9.8	39	22.7	99
Total cereals	**369.1**	**1 165**	**30.2**	**111**	**399.3**	**1 277**
Potatoes	47.9	890	1.8	26	49.7	916
Vegetables	69.8	2 007	15.8	344	85.6	2 351
Pulses	17.3	29	14.6	21	31.9	50

Source: AoS, 2020.
[1/] Area in 000 hectares and production in 000 tonnes.

Table 16: Tajikistan - Area planted with vegetables and melons in first season, 2020 (000 hectares)

Crop	2019	2020	Difference (percent)
Vegetables	67.0	69.8	4.2
Melons	21.9	22.8	4.1

Source: AoS, 2020.

Livestock

After the privatization of the collective livestock holdings in the 1990s, livestock ownership mainly changed towards households and *dehkan* farms, with just 1 percent of cattle heads and 60 percent of poultry owned by agricultural enterprises.

Livestock rearing systems practiced for sheep and goats as well as for the majority of the cattle incorporate seasonal movements to intermediate and high mountain pastures. The migration usually starts in April-May and ends in September-October. In particular, classical breeding systems for sheep and goats have the following characteristics:

- Lambing time takes place in the spring.
- All population is pastured to the mountains: herds of households and collective farms can be driven by family members or gathered in groups and driven by village shepherds and farm workers.
- At the end of the summer or autumn, young lambs are taken from the lambing ewe and sold for slaughter or for fattening.
- About 50 percent of the female lambs are left for remount of the herd in order to replace the sheep with "broken mouths" (which are four to five years old); these female lambs restock the breeding population.
- Extra female lambs are sold for slaughter, for fattening or as breeding population.
- Sheep with "broken mouths" and other culled livestock population are fattened for sale or for slaughter for their own consumption.

The size of the herds is determined by the capabilities of the farm in the winter. In the winter, the fodder harvested by the farm, including low value wheat, maize and barley grains, by-products, namely straw, roughage feed and bran are used for feeding. The basis of a livestock diet is rough grass from plain pastures as well as wheat and barley straw, meadow hay and alfalfa harvested by farms. In case of insufficient availability of feed in the winter, farmers start selling their herd (as observed in years with long winters). Table 17 shows data on livestock population by year and regions. The Mission collected complete data for DRS, Sughd, Khatlon and GBAO, allowing to compare the livestock population, sheep and goats from 2014 to 2019. The Table shows that, since 2014, the population of cattle, sheep and goats has been slightly, but constantly, increasing in all regions, except GBAO where it decreased by 9.1 percent. At the same time, the planted area with fodder crops (excluding pastures with rough grass) in 2019 increased by 8.8 percent compared to 2018.

Interviewed key informants briefed the Mission on the following issues regarding livestock:

- In Sughd and Khatlon regions as well as GBAO, a mild and short winter ensured sufficient fodder reserves before the livestock were driven to nearby pastures around villages in March.
- Mountain pastures allowed animals to graze longer and winter fodder reserves were generally adequate to feed animals.
- No infectious disease outbreaks were reported, mainly due to the adequate availability and widespread use of vaccines.
- Livestock productivity varied greatly among districts of the same region and among regions, essentially due to the use of different management regimes and local cattle genetics.

Table 17: Tajikistan - Livestock population (000 units) and area planted (000 hectares)

Region	2014	2015	2016	2017	2018	2019	Difference 2019 vs 2018 (percent)
Cattle							
GBAO	110.9	114.5	117.2	118.3	105.4	95.8	-9.1
Sughd	584.7	623.9	634.3	641.9	646.9	665.7	2.9
Khatlon	870.8	898.7	944.8	968.1	981.1	994.2	1.3
DRS	561.7	572.0	581.7	589.0	594.1	606.2	2.0
Total	**2 128.2**	**2 209.2**	**2 278.1**	**2 317.3**	**2 327.5**	**2 361.9**	**1.5**
Cows							
GBAO	40.2	40.7	41.3	43.1	41.2	40.2	-2.4
Sughd	315.5	333.0	340.0	344.2	346.4	356.4	2.9
Khatlon	443.3	459.6	480.8	495.2	503.1	508.4	1.1
DRS	294.5	298.6	306.4	313.0	316.4	322.2	1.8
Total	**1 093.5**	**1 131.9**	**1 168.5**	**1 195.5**	**1 207.2**	**1 227.2**	**1.7**
Sheep and goats							
GBAO	361.2	366.8	375.5	399.1	345.2	323.7	-6.2
Sughd	1 389.1	1 466.7	1 500.7	1 521.1	1 543.2	1 572.4	1.9
Khatlon	2 021.7	2 095.2	2 211.2	2 262.1	2 307.5	2 333.2	1.1
DRS	1 284.6	1 350.6	1 368.8	1 399.3	1 424.4	1 457.1	2.3
Total	**5 056.6**	**5 279.3**	**5 456.2**	**5 581.5**	**5 620.3**	**5 686.4**	**1.2**
Horses							
GBAO	0.3	0.3	0.3	0.3	0.3	0.3	0.0
Sughd	8.0	8.2	8.4	8.5	8.5	8.4	-1.2
Khatlon	56.2	56.5	56.9	57.6	58.4	58.6	0.3
DRS	13.1	13.3	14.1	14.0	13.6	14.0	2.9
Total	**77.6**	**78.3**	**79.7**	**80.4**	**80.8**	**81.3**	**0.6**
All types of poultry							
GBAO	128.2	128.2	129.9	129.9	108.0	88.4	-18.1
Sughd	1 521.6	1 684.4	1 635.5	1 719.0	2 728.2	4 322.1	58.4
Khatlon	1 629.2	1 697.8	1 772.5	1 809.2	1 822.8	2 046.0	12.2
DRS	1 969.0	1 632.6	1 513.5	1 558.9	1 977.5	2 580.1	30.5
Total	**5 248.0**	**5 143.0**	**5 051.5**	**5 217.0**	**6 636.5**	**9 036.6**	**36.2**
Area planted with forage crops (excluding pastures with rough grass)							
GBAO	38.1	38.1	35.3	38.1	36.2	33.7	-6.9
Sughd	389.3	430.4	391.5	410.1	422.2	439.6	4.1
Khatlon	509.7	536.6	551.9	579.6	604.3	699.4	15.7
DRS	264.8	306.6	311.9	338.8	360.8	376.7	4.4
Total	**1 201.9**	**1 311.6**	**1 290.6**	**1 366.6**	**1 423.5**	**1 549.4**	**8.8**

Source: AoS/Statistical Yearbook, 2019.

FOOD SUPPLY/DEMAND ANALYSIS

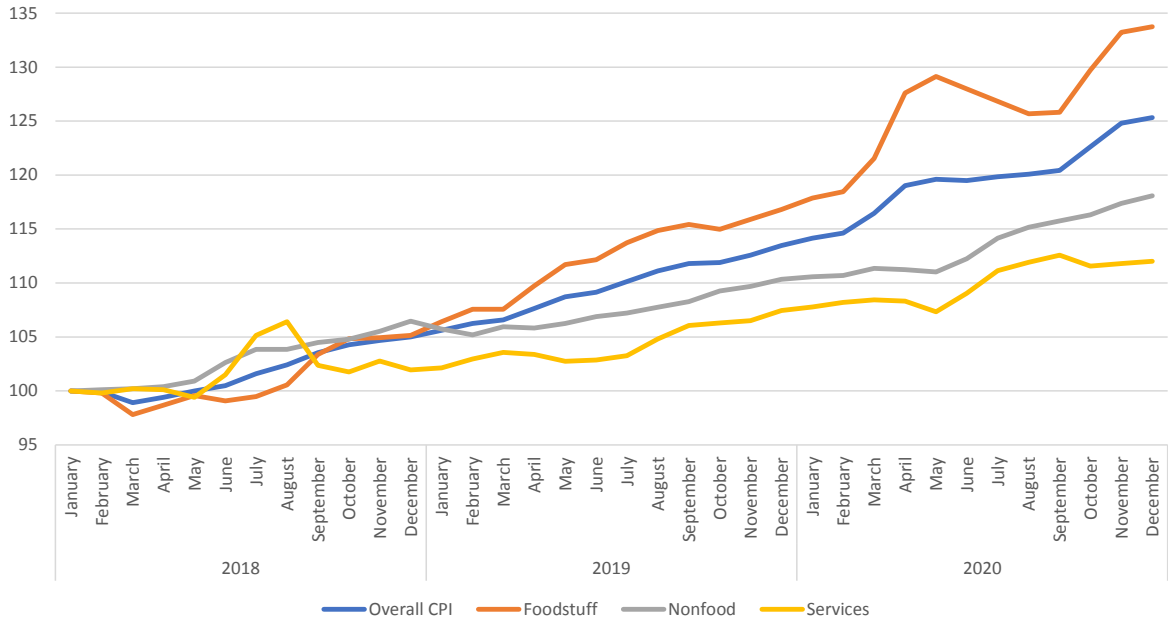
Food prices

Prices of staple food commodities, especially wheat flour, vegetable oil, meat, and potatoes, increased in 2020 compared to 2019 in all regions of the country. By comparing the price changes over the last three years, it emerges that food commodity prices which showed high volatility were onions, potatoes and meat products.

Prices of meat products increased in the range of 20-30 percent during the first quarter of 2020 and declined over the next two quarters. However, the general trend showed that the cost for chicken, beef and mutton during the reporting year remained high compared to 2019.

The Consumer Price Index (CPI), based on data by the AoS, showed that food prices increased in the first half of 2020 and started declining by end-June 2020. During the first quarter, food prices increased by 5 percent and in the second quarter by 5.3 percent. In June, the price dropped by 0.9 percent, against the base value in January 2018. Drops in prices of potatoes, fruits, wheat flour and eggs mostly drove the decline in food prices that were observed in June 2020.

Figure 7: Tajikistan - Consumer Price Index (CPI), change of food prices since 2018 (January 2018 = 100)



Source: AoS, 2020.

The food basket cost has shown a significant increase from April to June 2020 and, based on the WFP Alert for Price Spikes (Figure 8), it has been rated at "crisis" level for five consecutive months from April to August 2020.

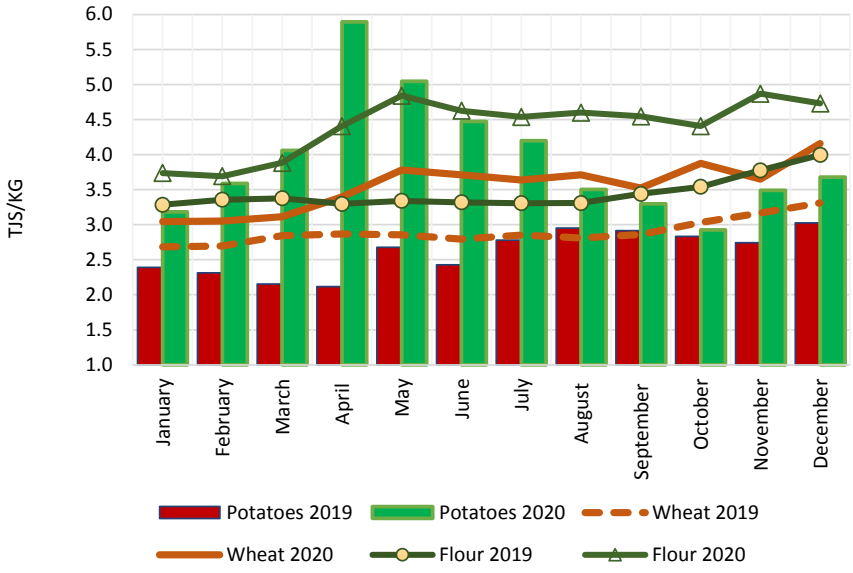
Wheat

Bread and other wheat products are the main staple foods both in rural and urban areas. The national average retail prices of wheat flour increased markedly during 2019, from TJS 3.3/kg to TJS 4/kg at the end of the year, corresponding to a 22 percent increase. During the first quarter of 2020, the retail price of flour increased from TJS 3.7/kg to TJS 3.9/kg. By comparing prices for flour in 2020 and in the corresponding months of 2019, they increased from 10 to 45 percent. As for wheat grain retail prices, by comparing 2020 with 2019, on a monthly basis, the price increase was from 9 to 33 percent. Usually the price of wheat grain increases towards the end of the year, at planting time. However, due to the current situation with the COVID-19 pandemic, the price of wheat grain began to rise earlier, in May 2020, and remained at the level of TJS 3.6/kg to TJS 3.9/kg until October (Figure 9).

Figure 8: Tajikistan - Cost of food basket and price anomalies

Source: WFP SNAP Food Price Early Warning.

Figure 9: Tajikistan - Average retail prices of wheat grain, wheat flour and potatoes



Source: MoA.

The national average retail prices of wheat flour remained overall stable in the first two months of 2020 and increased sharply between March and May, supported by increased consumer demand amid concerns over the COVID-19 pandemic. In most markets, wheat flour was traded in May 2020 at TJS 4.8/kg, about 45 percent above the same month in 2019. Export limitations imposed in April and May 2020 by the Government of Kazakhstan, the country's main wheat supplier, also added to the upward pressure on prices during this period. Subsequently, wheat flour prices declined in June and July, weighed by improved market supplies from the 2020 first wheat harvest. Prices remained overall stable between July and October. Adequate domestic supplies from the harvest, the easing of restrictive measures related to the COVID-19 pandemic and Government price stabilization initiatives, including a temporary export ban on wheat grain and flour and the release of produce from its strategic reserves, contributed to the stability of prices. Prices, however, remained well above their levels of October 2019, following the steep increases recorded between March and May 2020. Increased export quotations from Kazakhstan, the country's key wheat supplier, also contributed to the higher year on year prices.[14]

Potatoes

Retail prices of potatoes, another staple food, have remained relatively stable at TJS 2.4-3/kg during 2019. By contrast, at the beginning of 2020, the price of potatoes began to grow sharply and reached a peak of TJS 5.9/kg in April, almost three times higher than the level in the same month in 2019 and almost two times higher than the value in January 2020. Seasonal trends were exacerbated by strong demand from consumers, fearing a supply shortage due to the pandemic and reached levels almost three times higher than 12 months before. By October 2020, the prices of potatoes declined to TJS 2.9/kg, but remained about 15 percent higher than in the same month in 2019. This is also due to the pre-winter sale of potatoes by farmers who do not have adequate conditions to store the tubers.

In GBAO, retail prices of wheat flour increased to TJS 300/50 kg at the start of the pandemic but, after the Government's intervention, declined to TJS 255. Similarly, in Sughd Region, prices of wheat flour increased to TJS 240/50 kg during 2020, an increase of TJS 60 compared to the average of 2019. According to key informants in Fayzobod District of the DRS Region, retail prices of potatoes were significantly higher in 2020 compared to the previous year. Incidentally, the average retail prices of fuel decreased compared to 2019, likely due to reduced movements resulting from the pandemic-related measures. While fuel prices did not seem to play a role in the increase of food prices, movement restrictions, import/export restrictions, reduced income leading to increased requests for credits, currency devaluation and a general uncertainty around the COVID-19 pandemic were more likely culprits in the food prices increases.

Cereals Balance 2020/21 (November/October)

The national cereals and potatoes supply/demand balance for the 2020/21 marketing year is summarized in Table 18 and it considers separately wheat, rice (in milled terms), maize, barley and potatoes. The balance is based on the Mission's production estimates and the latest information on population, consumption, trade flows and stocks availability. In drawing up the national food crop balance, the following assumptions were made:

- **Population** of the country in 2020 was estimated at about 9.3 million, using a 1.021 annual growth rate provided by the AoS.
- **Cereals stocks**, which amounted to 579 000 tonnes at the beginning of 2020,[15] are expected not to change during the 2020/21 marketing year and the Mission adopted a zero drawdown hypothesis.
- **Domestic production** in 2020 is estimated at 1.28 million tonnes of cereals and 916 000 tonnes of potatoes. Production of wheat, the main cereal crop, is estimated at about 846 000 tonnes, while outputs of barley, maize and rice (in milled terms) are estimated at 150 000 tonnes, 182 000 tonnes and 99 400 tonnes, respectively.

[14] GIEWS FPMA bulletin http://www.fao.org/giews/reports/fpma-bulletin/en/.

[15] AoS/Statistical Yearbook, 2019.

Table 18: Tajikistan – Cereals and potatoes supply/demand balance sheet, 2020/21 marketing year November/October (000 tonnes)

	Wheat	Rice (milled)	Maize	Barley	Total cereals	Potatoes
Domestic availability	**846**	**99**	**182**	**150**	**1 277**	**916**
Domestic production	846	99	182	150	1 277	916
Stock drawdown	0	0	0	0	0	0
Total utilization	**1 820**	**119**	**398**	**164**	**2 501**	**1 120**
Food use	1 382	105	10	35	1 532	857
Feed use	303	-	371	104	778	-
Seed	62	5	1	12	80	171
Post-harvest losses and other uses	73	9	16	13	111	92
Import requirements	**974**	**20**	**216**	**14**	**1 225**	**204**

Source: CFSAM, 2020.

- **Food use:** Wheat is certainly the main cereal consumed as food in the country. Available official information on the production and import of wheat grain and flour in recent years suggests that apparent wheat consumption is increasing. Based on AoS data, wheat consumption (including all wheat products) is estimated at 181 kg/person/year and rice consumption is estimated at 11.3 kg/person/year. Taking into account the low consumption of maize and barley cereals, the total apparent consumption of cereals (rice in milled terms) is estimated at 192.3 kg/person/year.
- **Feed use** (animals and poultry) is estimated at about 780 000 tonnes of cereals. In particular, it is expected that 18 percent of the wheat production (as bran when milled into flour), plus most available barley and maize, will be used as livestock feed.
- **Seed requirements** for 2021 are calculated on the basis of the recommended seed rates used in the country and the cultivated area for 2019/20 plus 15 percent of the insurance fund. The following seed rates have been used: 200 kg/hectare for wheat, 150 kg/hectare for barley, 180 kg/hectare for paddy and 25 kg/hectare for maize.
- **Post-harvest losses** (including handling and storages losses) and other uses are estimated using a loss rate of 8.6 percent for cereals and 10.1 percent for potatoes.[16]

The cereal import requirements in 2020/21 are forecast at about 1 225 000 tonnes, comprising of 974 000 tonnes of wheat, 216 00 tonnes of maize, 20 000 tonnes of rice and 14 000 tonnes of barley. In addition, the Mission forecasts the potatoes import requirements for 2020/21 at 204 000 tonnes. Based on the country's import capacity, the Mission expects that the entire deficit will be covered by commercial imports.

[16] U. Nabieva: Food Losses and Waste in Tajikistan/Country Report, 2015.

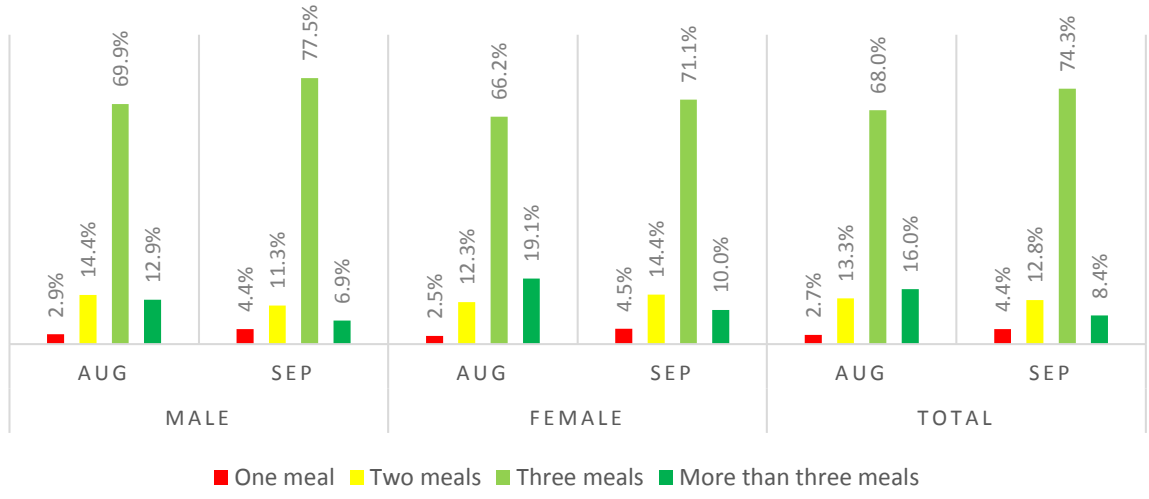
FOOD SECURITY

Household food consumption

Meals eaten per day: The households' respondents were asked about the frequency of the meals they consumed per day for the day prior to the survey. Based on their responses, in general, the households that consumed three meals per day increased by 6.3 percentage points in September 2020 compared to August 2020. At the same time, those households that consumed more than three meals per day decreased by 7.6 percent and the households that consumed two meals decreased by 0.5 percentage points; meanwhile, the households that were consuming one meal per day increased by 1.7 percentage points. On average, close to three-fourths of the households continued to consume three meals per day and the proportion of the households that consumed one meal per day had been increasing. The data disaggregation by gender shows that this change in daily food consumption patterns can be observed both in male and female-headed households when comparing September 2020 data against August 2020.

The households that consumed three meals per day increased by 7.6 percentage points for male headed and 4.9 percentage points for female-headed households, while the households that consumed one meal per day increased for male-headed households by 1.5 percentage points and for female headed households by 2 percentage points compared to the previous month.

Figure 10: Tajikistan - Households' meal consumption per day (one day prior to the interview)



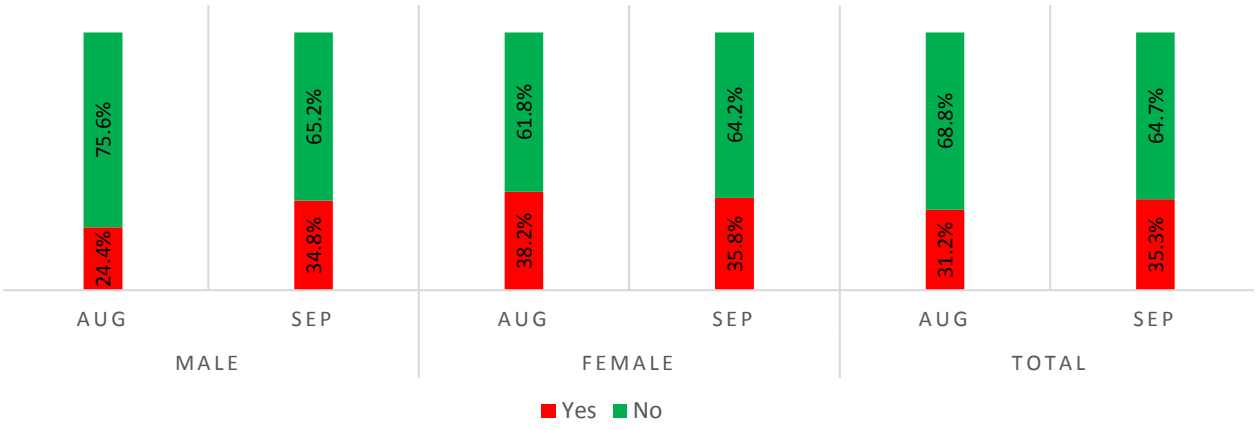
Source: CFSAM, 2020.

In addition to asking the respondent households about the frequency of meals eaten per day, they were also asked about whether there have been any changes in the portion size or number of meals when compared to March 2020 (i.e., prior to the COVID-19 pandemic in Tajikistan). Overall, more than one-third of the respondent households reported a change in meal portion sizes since March 2020 and a similar pattern was observed both in August and September 2020, respectively.

Of those households that reported a change in the number of meals eaten per day or size of the meal since March 2020, 59 percent of the interviewed respondents in August and 79 percent interviewed in September reported it decreased, which is a reduction by 20 percentage points. There are no significant variations in responses to these questions when disaggregating by the head of the household's gender.

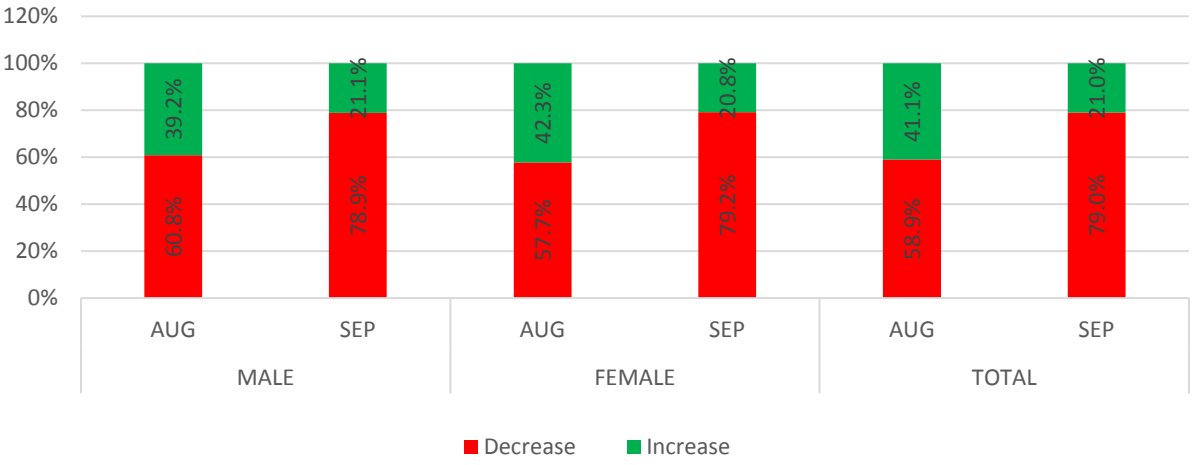
Furthermore, out of all the households that reported a reduction in the number of meals, 73.7 percent mentioned having also reduced meal portion sizes. Comparisons of the August and September 2020 results, showed that the proportion of the households that had reduced their meal portion sizes had reduced by 7 percentage points, meanwhile the percentage of the households that consumed very few meals per day had increased by the same portion.

Figure 11: Tajikistan - Change in number or size of meals eaten per day since March 2020



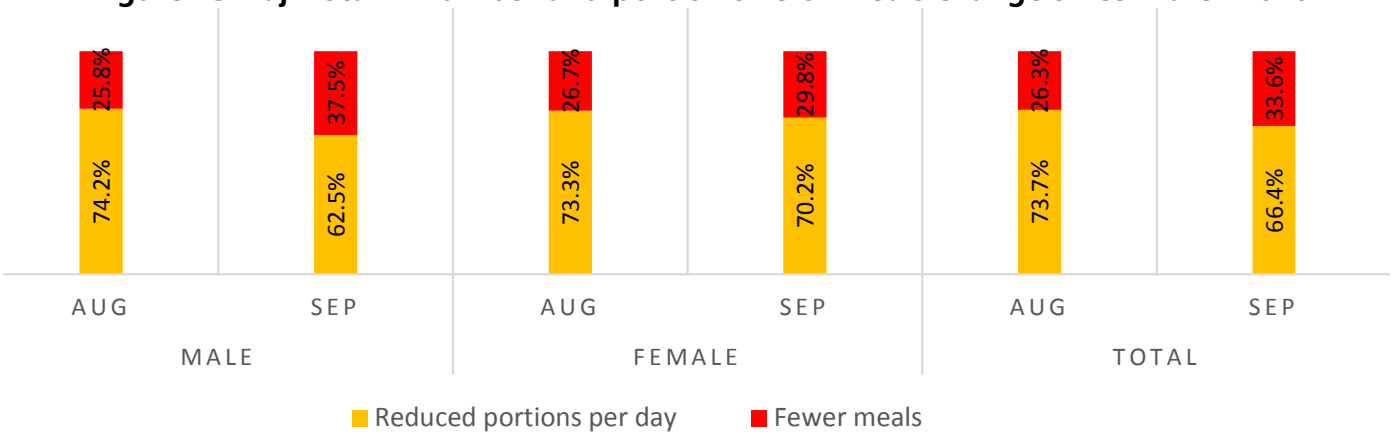
Source: CFSAM, 2020.

Figure 12: Tajikistan - Decrease or increase in number or portion sizes of meal eaten per day since March 2020



Source: CFSAM, 2020.

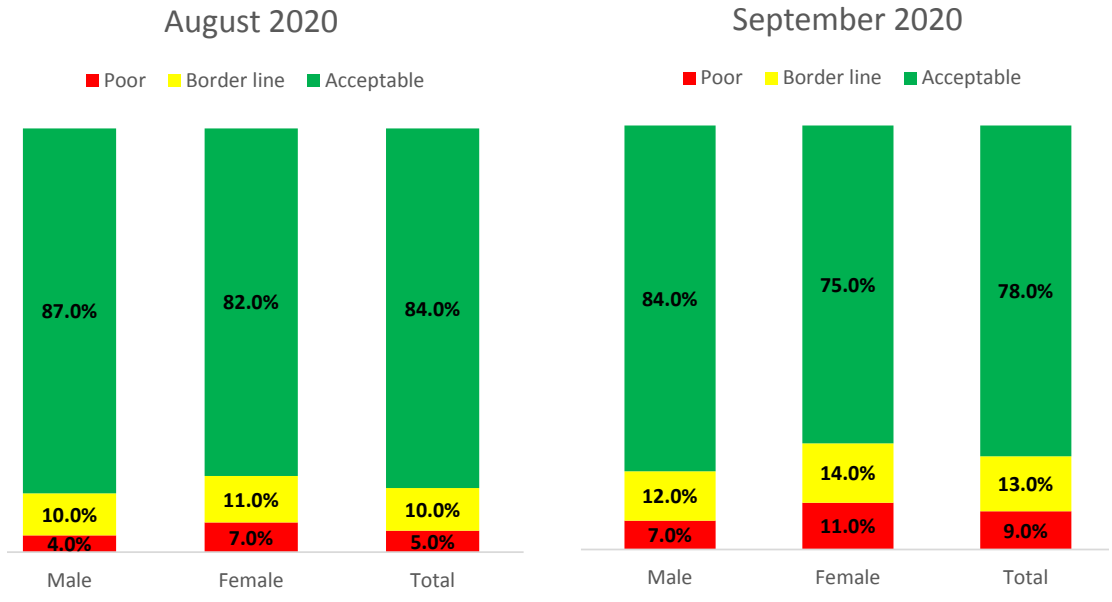
Figure 13: Tajikistan - Number and portion size of meals change since March 2020



Source: CFSAM, 2020.

Food consumption: The respondent households were also interviewed about the type of foods consumed during the seven days prior to the interview. Generally, across the sample of respondents, August 2020 data analysis showed that there were 84 percent with an acceptable level of food consumption, 10 percent borderline and 5 percent having poor food consumption. Acceptable food consumption levels were higher amongst male-headed households compared to female-headed households by 5 percentage points. There are also variations in terms of borderline and poor food consumption levels by gender disaggregation, where female-headed households scored higher by 1 percentage point in borderline food consumption and 3 percentage points in poor food consumption categories in August 2020. Comparing the overall Food Consumption Score (FCS) of the households in September to August 2020, the results showed a reduction in acceptable level food consumption by 6 percentage points and an increase in borderline and poor food consumption by three and 4 percentage points respectively. For both female and male-headed households, FCS decreased, and for the former group of households, the acceptable food consumption dropped by 7 percentage points, while for the latter it dropped by 6 percentage points. The FCS results in September 2020 showed female-headed households ranking higher against male-headed households in terms of borderline and poor food consumption level by 2 and 4 percentage points, respectively.

Figure 14: Tajikistan - Food consumption score results, August-September 2020



Source: CFSAM, 2020.

Malnutrition

Malnutrition prevalence and causes: Information on malnutrition amongst children and pregnant and lactating women and girls (PLWG) was reported in most locations. According to respondents, prevalence of moderate acute malnutrition is higher compared to severe cases. Per one report from Lohuti District of Sughd Region, of 618 children under five years of age in the district, 98 were registered with moderate acute malnutrition, and 1 with severe acute malnutrition. In this same district, there were 20 PLWG, of whom 5 were registered with severe acute malnutrition. Comparison of information from the reports of respondents in other districts showed that a similar trend in prevalence of malnutrition can be observed for children and PLWG. Most respondents attributed the driving causes of malnutrition to:

- Lack of dietary diversity.
- Reduced immunity and stress, exacerbation of chronic diseases.
- Insufficient consumption of food with vitamins and minerals.
- Lack of knowledge on right feeding practices.
- Switching to infant formulas at the earliest stage of child growth, instead of breastfeeding.
- Lack of clean drinking water.

Availability of nutritious foods: During the summer months, the average households, especially in rural areas, use their kitchen gardens to grow fruits and vegetables for their own daily consumption. For vulnerable families, getting diversified food on the table is challenging, hence they rely on cheap food such as bread, sugar, onion, noodles, pulses, carrots and sometimes potatoes. In the case of small children who are malnourished and not breastfed, there are different types of commercial foods available in stores but are expensive and unaffordable to many families. One respondent mentioned that infant cereal can cost from TJS 80 to TJS 100 and to improve the nutritional status of the child, must be purchased every week. In situations when families cannot afford the infant cereal, cheaper options such as using goat or cow milk are applied.

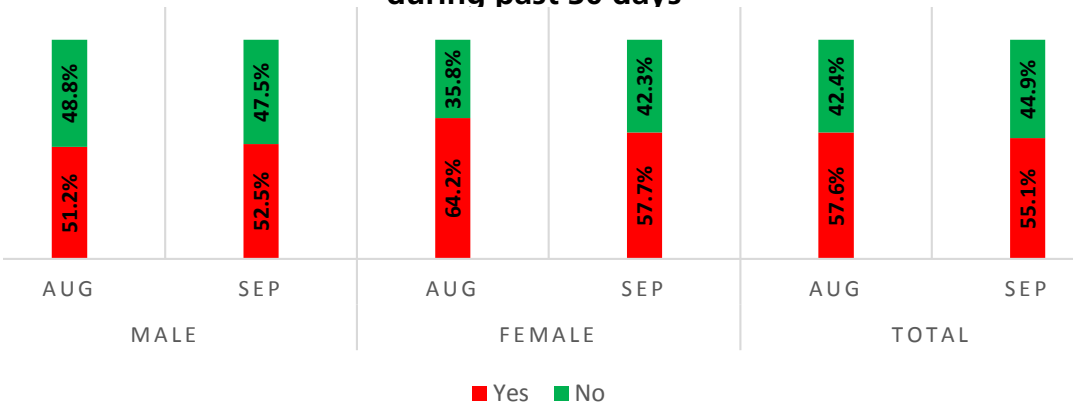
Available services/assistance: Services for the prevention and treatment of malnutrition and micro-nutrient deficiencies in children under the age of five and for PLWG is provided in some targeted primary health care facilities through support of Government, NGOs and international agencies. These services include:

- Iron sulphate vitamin distribution.
- Raising awareness of PLWG and mothers with malnourished children on prevention and treatment.
- Provision of vitamin A and E.
- Treatment of moderate and severe acute malnutrition.
- Oral rehydration therapy.

Local food markets and prices

Availability: Based on reports of key informants from the regions, generally, staple food commodities are available in the local markets and accessible to the population. There were interruptions of food supplies during April and May 2020 when the COVID-19 pandemic was officially declared in Tajikistan. Due to uncertainties about the situation, people started stocking more food thus creating shortages in the markets. The tendency for food stocking had reportedly been higher in Sughd Region, where households bought essential food commodities in large quantities and stored it longer than usual. As the pandemic progressed, interventions of the Government and local entrepreneurs ensured that more food was supplied to the local markets and enough storage was available. An example of the improved situation after these Government and private interventions is from Yovon District in Khatlon Region, where the head of the Village Organization (VO) mentioned that, compared to the previous year, the quantity and quality of the food products had increased and were accessible both in urban and rural areas of the region;

Figure 15: Tajikistan - Households that reported experiencing food shortages during past 30 days



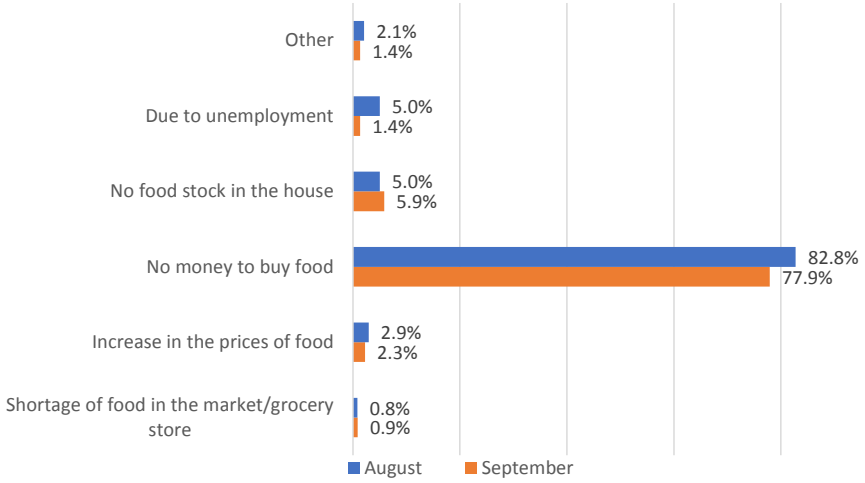
Source: CFSAM, 2020.

moreover, stores in the market were equipped with modern refrigerators to ensure the quality of food products was maintained for a longer time.

Access: According to the reports of key informants, the communities that were closer to the main roads and urban centres had more access to foods that were of better quality and greater variety, while those communities located at higher elevations in the mountains and farther away from the urban centres faced limited access to quality food. The big markets are in district centres and residents of villages and *jamoat* centres must pay for transportation to travel once or twice per week to these central markets to purchase. The main sources of food in the households were market or grocery stores, which were reported by 83 percent of the household respondents followed by 14.1 percent sourcing through their own production, 1.2 percent received it as a gift from family and friends, 0.2 percent exchanged labour for food and 0.2 percent came from humanitarian assistance by the international agencies. In August 2020, 57.6 percent of the respondents indicated that there were times in the previous 30 days when they did not have sufficient quantities of food available in the households, while 55.1 percent stated the same in September 2020.

Compared to males, female-headed households reported experiencing more shortages of food, which was higher by an average of 9.1 percentage points over two months. The households that reported experiencing food shortages during the past 30 days referred to various reasons, the biggest amongst these was the lack of money to buy food (82.8 percent in August and 77.9 percent in September 2020).

Figure 16: Tajikistan - Main reasons households did not have access to the market during past 30 days



Source: CFSAM, 2020.

Affordability: Compared to the previous year, the cost of food commodities had been rising and not all people could afford to buy needed amounts of food for daily consumption. As per the report of one key informant in Khatlon Region, "Currently, people buy only basic food products, such as flour, oil, potatoes and onions, but the price for other important products is very high and it is not always affordable for people to buy meat, beans and grains." Another respondent from Kulob District mentioned that less than half the population was able to buy enough food, meanwhile most households were unable to buy meat. During the summer months, the households with access to large agricultural lands, generally used for farming businesses, had enough food available to meet their caloric needs compared to those with no access or access to smaller tracts of land. The situation also varied amongst farmers: those who owned irrigated lands had a more stable harvest, while those with rainfed lands received a good harvest during a good rainy season. In Hiloli District in Khatlon Region, it was reported that the harvest of potatoes and fruits decreased significantly due to unfavourable weather conditions, which resulted in price increases of these products. In some districts of Sughd Region, it was reported that demand for imported staple food dropped due to increased prices, while purchases of local agricultural produce increased. Meanwhile, the harvest from rainfed agricultural lands was less in 2020 as weather conditions allowed for the collection of only one harvest compared to the two harvests received in 2019.

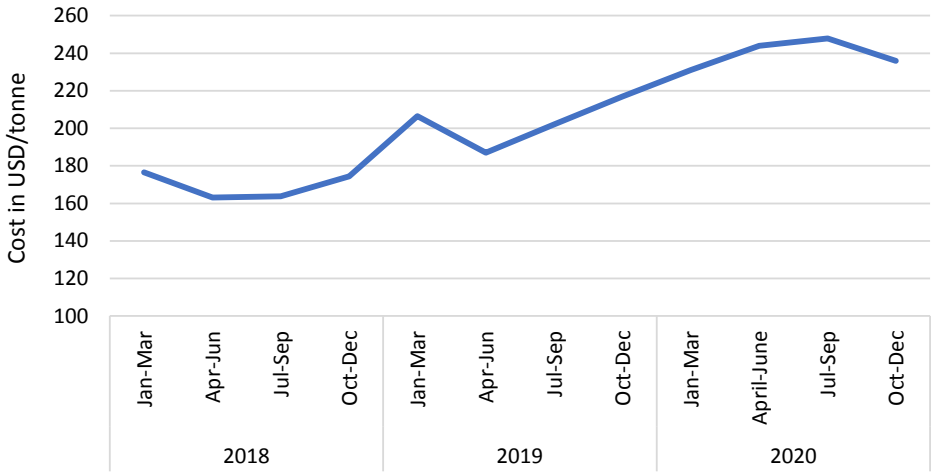
Food prices: The cost for staple food commodities, compared to 2019, steadily increased during the first quarter of 2020 due to seasonality factor and in the second and third quarters this increase was caused by the COVID-19 pandemic situation. The increase in prices of staple food commodities was mentioned as the key challenge with food security situation in 2020 by key informant interview respondents in all four regions.

Wholesale traders: The key informants of this assessment included wholesale traders and retailers that supply essential food commodities (i.e., wheat flour, vegetable and cotton oils, sugar, rice and pulses) at the markets in the selected districts. According to traders, the general situation with the supply of food commodities remained stable, except for April and May when the supply of imported commodities such as wheat flour, vegetable oil and rice increased. By contrast, in Fayzobod District in DRS Region, a retail store owner mentioned that the supply of food commodities dropped by half and delivery came with much delays during this period. In addition, the prices of commodities began rising as per the report of one respondent in Shahrtuz, Khatlon: "...from time to time, due to the devaluation of the national currency and higher wheat grain prices, the cost of wheat flour rose. For example, in April, the price of one bag (50 kg) of wheat flour rose from TJS 225-230 to TJS 255-260. For the duration of one and one-half months, the price of wheat flour stayed high and, starting from the middle of May, the price for wheat flour started to decrease."

The supply of food commodities improved and traders reported having a reserve stock that, on average, could last two weeks. However, some traders mentioned facing problems in the timely supply of commodities to the markets as customers purchased food commodities on credit yet often had delinquent payments. In addition, traders referred to the slowing down of commerce, which was not returned to pre-pandemic levels due to the reduction of purchasing power stemming from reduced or loss of incomes and jobs. Considering these challenges, both wholesalers and retailers decreased their supply of commodities to the market and only responded to the current slow demand of the population.

Millers: The border closure and movement restrictions had also affected the operations of millers and, although the situation varied depending on the location and production capacity of mills, overall, the cost of wheat flour production increased. Millers interviewed for this assessment produced from 50 kg to 2 tonnes of wheat flour per day. The smaller capacity mills mainly depended on locally-harvested products and while not reliant on cost of imports, were forced to increase prices due to the increased cost of production based on electricity expenses, tax payments and other related inputs. For higher capacity millers, price increases were caused by higher import costs due to devaluation of the Somoni against the US dollar, increased fees for customer services and higher-than-usual demand for the production

Figure 17: Tajikistan - Wheat import prices, 2018-2020 (USD/tonne)



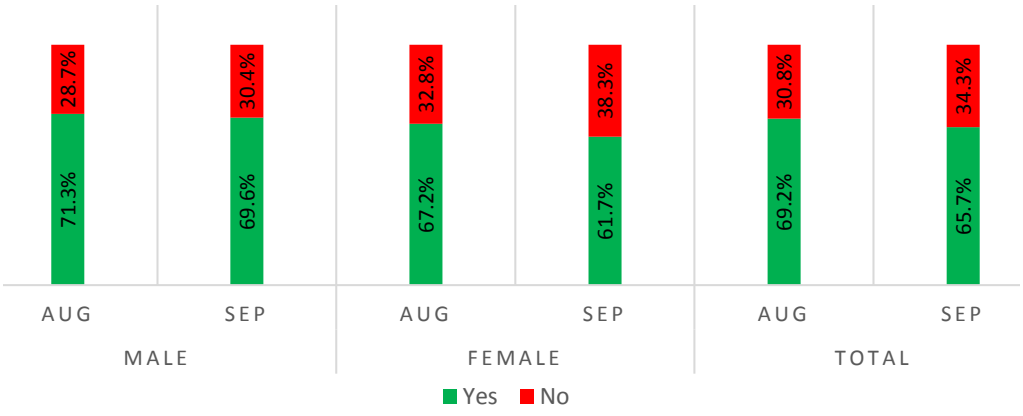
Source: AoS, 2020.

of wheat flour during the movement restriction period. The cost of import for wheat flour increased, as per Figure 17, in the second quarter of 2019 and remained steady throughout 2020. This increasing trend slightly peaked in the second quarter of 2020 and continued increasing further over the period from July to September 2020 due to the factors mentioned earlier by millers and suppliers.

Household's Food Stock Availability: Overall, 30-34 percent of the households surveyed in August and September 2020 reported not having food stock available in the house at the time of the interview. More female-headed households reported not having food stock available in the house compared to male-headed households and this is a difference by more than 1.7 percentage points in August and 7.9 percentage points in September 2020.

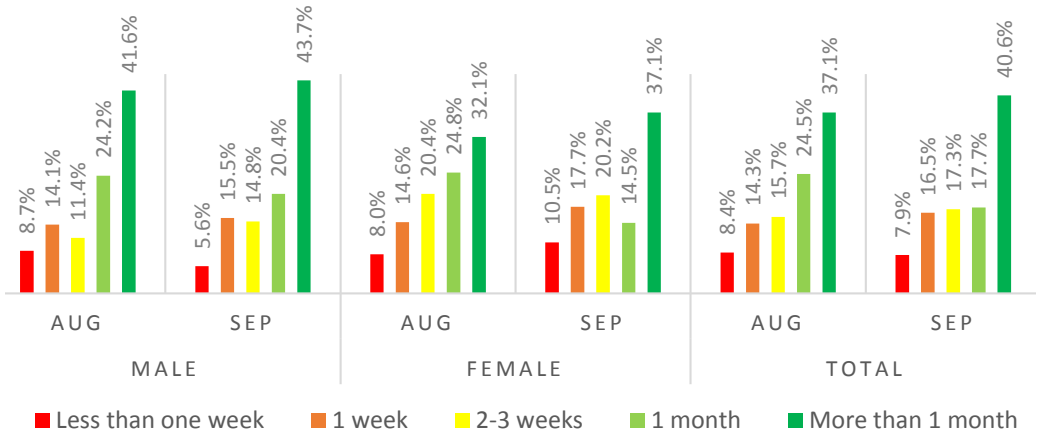
Out of all the household respondents that mentioned they had food stock available in the house, at the time of interview, 37 percent in August and 40.6 percent in September 2020 reported their food stock would last for more than one month. The households with a one-month stock of food available at the house comprised of 24.5 percent in August and 17.7 percent in September 2020. For those households that had food stock available from one to three weeks, this number varies between 14-16 percent in August and 16-17 percent in September 2020. The households with food stock available for less than one week were 8.4 percent in August and 7.9 percent in September 2020. In general, female-headed households reported having comparatively less food stock available than males.

Figure 18: Tajikistan - Households that have food stocks available in the house



Source: CFSAM, 2020.

Figure 19: Tajikistan - Households' food stock availability in weeks and months

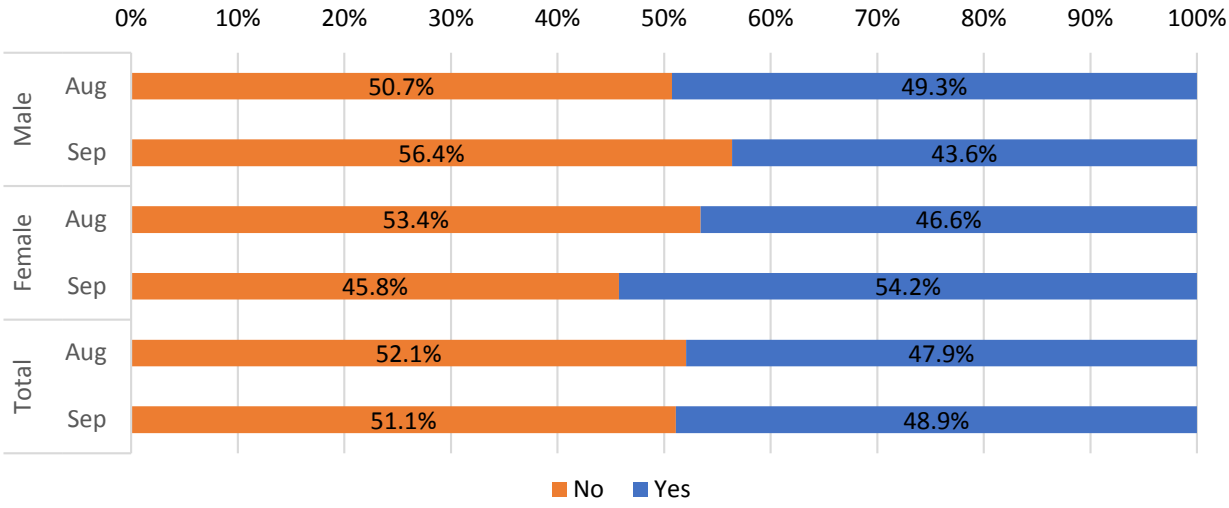


Source: CFSAM, 2020.

Half of the respondents during both August and September 2020 reported that there were times during the past 30 days when their household was not able to access the market or grocery stores. In terms of gender disaggregation of these results, the more visible difference was observed in September 2020 as reported by 54.2 percent female-headed households against the 43.6 percent male-headed households. On the other hand, in August there were more male-headed households who did not have access to market or grocery stores compared to females and this is a difference of 2.7 percentage points.

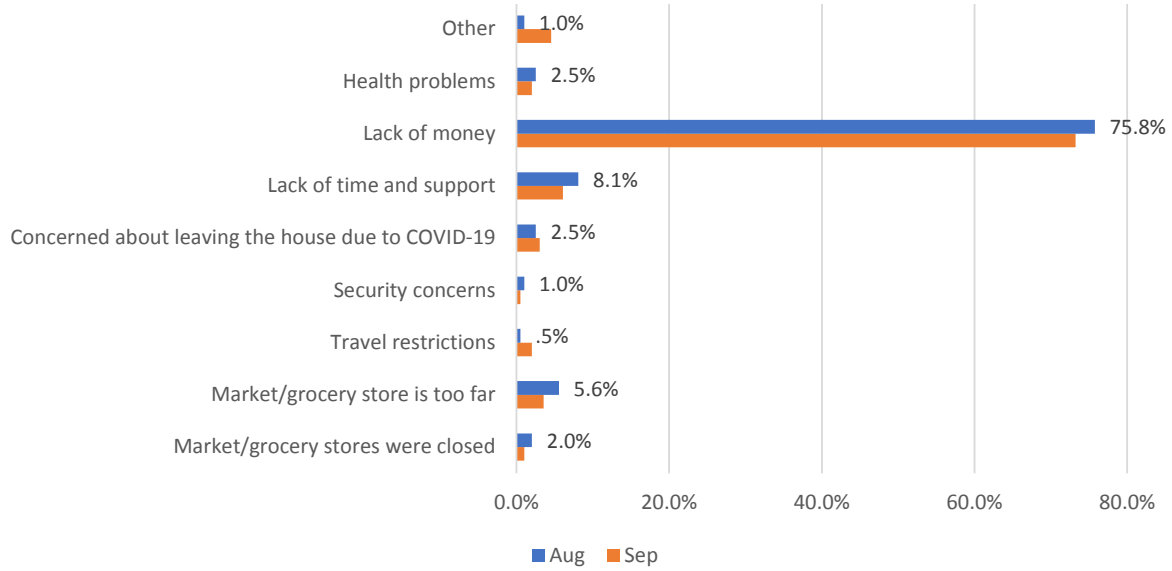
The reasons for not having access to the market or grocery stores were mostly reported as due to lack of money by a range of 73-75 percent of the households in August and September 2020, respectively, and from 6-7 percent households this was due to the lack of time and support from family members or relatives to purchase food at the market, while from 1-6 percent of the cases, the reason provided was due to health problems, the pandemic, travel restrictions, security concerns and that market/grocery stores were far or closed.

Figure 20: Tajikistan - Proportion of households that reported there were times in the past 30 days when they could not access market/grocery stores



Source: CFSAM, 2020.

Figure 21: Tajikistan - Main reasons households could not access market/grocery stores in past 30 days



Source: CFSAM, 2020.

Community coping strategies against food shortages

An increased reliance on coping strategies was confirmed across the KII to be heavily influenced by the increasing prices of commodities, especially during the movement restrictions imposed in May 2020. The lack of employment opportunities exacerbated households' susceptibility to shocks, with an immediate effect on food security levels. The increase in food prices led more households to reduce the quantities and diversity of purchased foods from the markets. Instead, households shifted to affordable essential foods such as wheat flour, vegetable oil, potatoes, milk and eggs, thus limiting the consumption of foods such as sweets, sausages, tomatoes, watermelon, grapes and other products. The vulnerable households shifted to cheaper options that included low quality and less diversified foods.

In some districts of Sughd Region, it was reported by KII that populations had reduced their daily food intake and were preparing one hot meal per day. In GBAO, the most vulnerable populations relied on the cheapest alternative, by reducing their food consumption to only milk and tea with bread and butter, three times per day. Furthermore, people started selling their livestock, fodder, valuable assets (like cars) and in two locations of Sughd Region, people bartered rice for oil or wheat flour to cope with their daily food needs and to try to diversify their diets.

According to respondents from Khatlon Region, before the introduction of the travel restrictions, people used to buy 50-60 kg sacks of potatoes and onions, but have now reduced to 10-15 kg. The same pattern of reduced consumption was observed with regards to watermelon and fruits. For some people, the common coping strategy was to use their food stocks from 2019 and after it was depleted, they bought food on credit. However, due to increased debts, store owners had to limit or stop their purchases of food on credit.

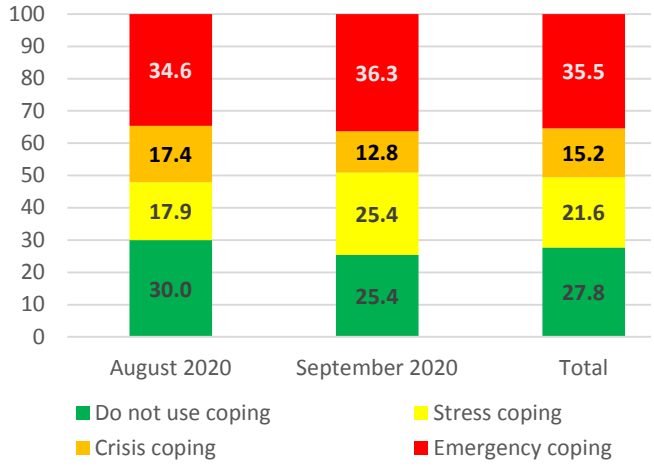
Given the change in employment opportunities and income sources, families had started to rely on diversifying their food sources. The average rural households owning but not using small land plots started cultivating with agricultural products. These families generally had other sources of income prior to the pandemic, such as remittances or skilled/unskilled labour and did not find labour-intensive work on a small plot of land to be an efficient source of income. The tendency to use these coping strategies were observed across most districts of the four regions covered within this study.

Livelihood Coping Strategies (LCS): The households reported continued reliance on LCS to stay afloat, with emergency coping strategies being used frequently, followed by stress coping strategies. Meanwhile, the proportions of households who did not rely on any livelihood coping had reduced by 4.5 percent compared to August 2020. Based on the data, the LCS changed slightly during the period from August to September 2020 and the use of emergency coping strategies increased by 1.7 percentage points, stress coping increased by 7.5 percentage points, while crisis coping decreased by 4.8 percentage points. This same pattern is observed with the disaggregation by male and female-headed households. Comparisons of gender disaggregated results showed a noticeable increase in the proportion of female-headed households relying on stress coping compared to male-headed households. However, crisis coping decreased by 4.8 percent among the households headed by females compared to both male-headed households and overtime.

On average, during the two months, the most frequently used emergency coping strategy was "resorting to help from others" which was reported by 26.4 percent of the households, followed by 10.9 percent of the households who sold their last female animal, 6.1 percent withdrew their children from school and 1.7 percent sold their house. The households that withdrew their children from school increased by 2.8 percentage points in September compared to August 2020. In terms of crisis coping strategies, the households that reported reducing their health expenses, increased by 33.8 percentage points, while those that sold productive assets decreased by 14.7 percentage points in September compared to August 2020. For stress coping strategies, the most commonly used strategy was selling households' assets (47.9 percent in August), however; this practice decreased significantly to 8.7 percent in September 2020. Spending savings is the second most commonly used stress coping strategy amongst the households and this practice increased by 7.4 percentage points in September 2020 compared to previous month.

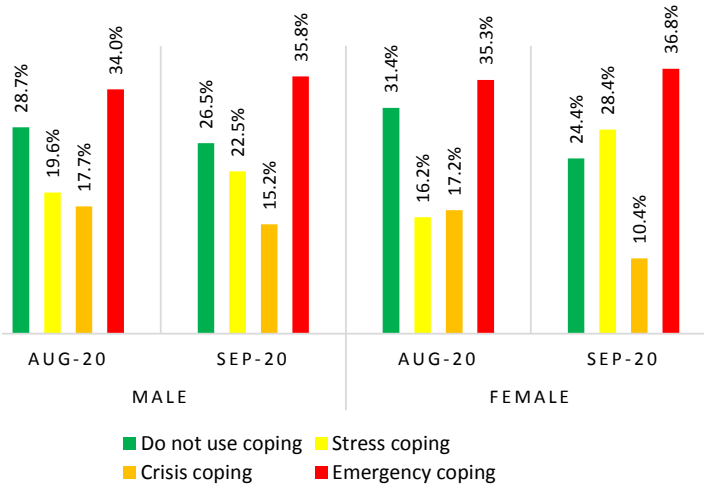
Reduced Coping Strategy Index (rCSI): The rCSI was calculated for the respondent households during the period covering August and September 2020. The overall rCSI during these two months consisted of 10.43 index points on average (out of the maximum score of 56 towards the negative direction). The rCSI has remained stable when comparing the two months.

Figure 22: Tajikistan - Households' application of livelihood coping strategies, by month



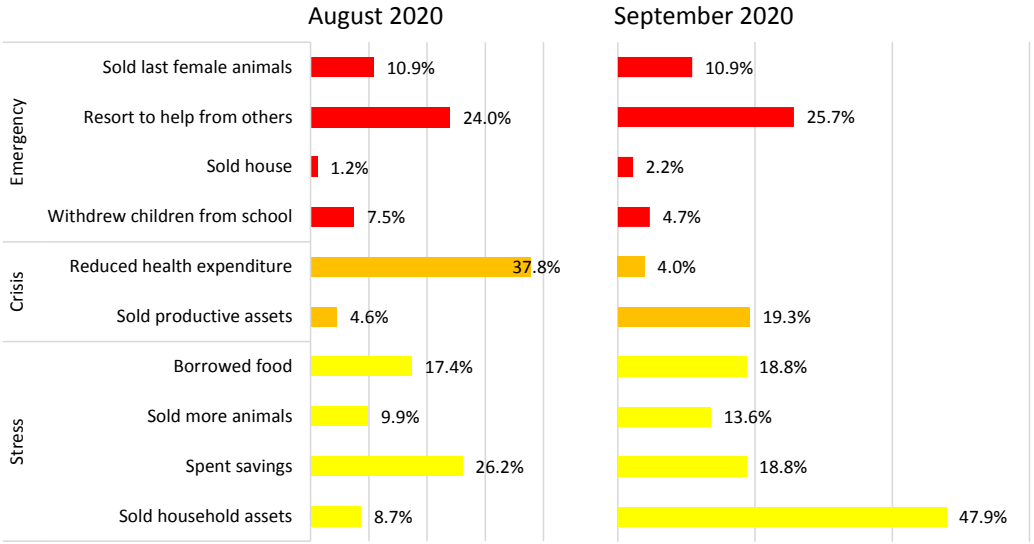
Source: CFSAM, 2020.

Figure 23: Tajikistan - Households' application of livelihood coping strategies, by gender



Source: CFSAM, 2020.

Figure 24: Tajikistan - Households' application of livelihood coping strategies disaggregated by month

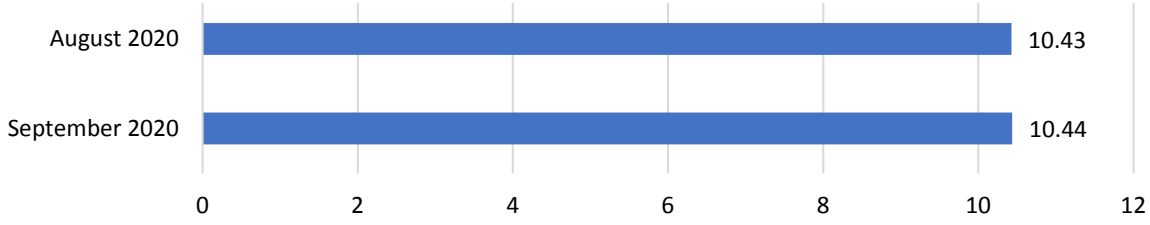


Source: CFSAM, 2020.

The analysis of the individual strategies within the rCSI showed that the respondent households used various consumption strategies to deal with their food needs. The households that reported relying on less preferred and less expensive food comprised 57 percent in August 2020 but decreased by 9 percentage points in September 2020.

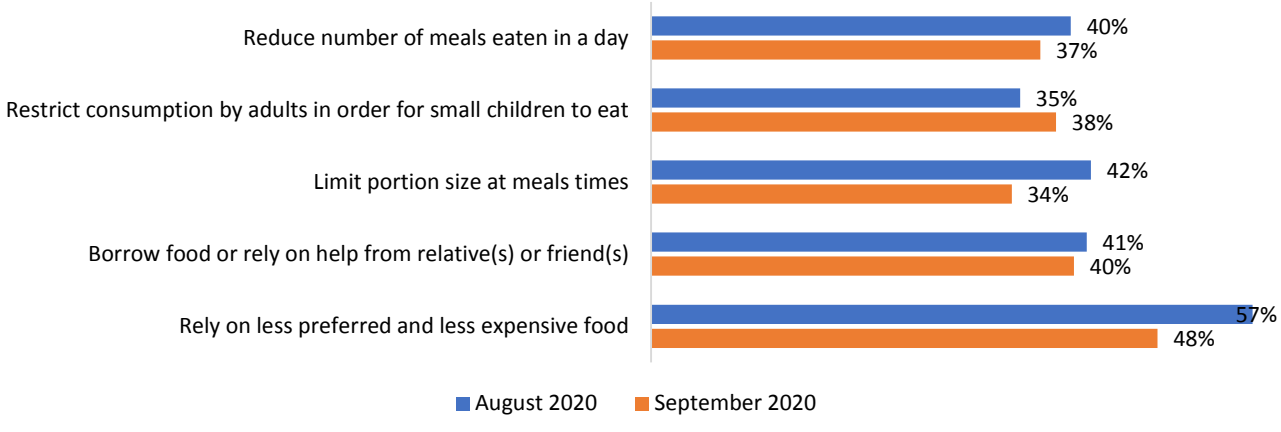
The next most frequent used coping strategy was borrowing food or relying on help from relatives or friends, which was mentioned by an average of 40.5 percent of the households during September and August 2020. For other rCSI strategies, the averages of the two months, as reported by the respondent households, included limiting portion sizes at mealtimes (38 percent), restricting consumption by adults in order for small children to eat (36.5 percent) and reducing the number of meals per day (38.5 percent).

Figure 25: Tajikistan - Reduced Coping Strategy Index (rCSI)



Source: CFSAM, 2020.

Figure 26: Tajikistan - Application of consumption based on coping strategies



Source: CFSAM, 2020.

Income and employment

At the start of the COVID-19 pandemic, the Government of Tajikistan introduced containment measures to help reduce the infection rate curve. This affected all sources of income. The imposed movement restrictions between March and May 2020 resulted in decreased opportunities for seasonal workers, delayed salary payments for public employees and pensioners, reduced income for farmers due to bans on food exports, and closure of the tourism industry. Most respondents across the country reported that their income levels had reduced by more than half compared to 2019.

With the lifting of the movement restrictions, some job opportunities started to open in the construction and agricultural sectors, and seasonal workers from rural areas resumed migration to urban areas for work. Anecdotal information indicates that these migrants were able to find jobs, but this information was not confirmed during this exercise. According to a WFP market analysis, the average wage rate per day for unskilled labour decreased by TJS 5 when comparing July 2020 (TJS 50) to July 2019 (TJS 55).

Access to credit: Access to credit for populations changed since the start of the COVID-19 pandemic and banks reduced the amount of credit provided due to increasing demand and uncertainties about whether these credits could be repaid in the face of the changing economic situation. Credits that were available from the bank, support small and medium businesses, construction, study and agricultural activities. These credits are provided by private and Government-owned banks, with amounts varying from TJS 1 000 to TJS 5 000. Before the COVID-19 pandemic, people could take interest-free credit from neighbours and entrepreneurs, thereby avoiding banks, but due to the socio-economic effects of the pandemic, these types of credits were not always available. In the case of credits from banks, respondents have commented that the interest rates were very high and not everyone could afford it. In addition, these credits were provided only on the condition that recipients had some sort of income or collateral in the form of hard assets, which was more supportive of economically-privileged groups; it is, therefore, challenging for the vulnerable populations without stable incomes to access credit.

The timeline below provides an overall summary of how the situation has been changing and the effect it has on households' food security and general wellbeing.

JANUARY-FEBRUARY

- Labour migrants freely travel to the Russian Federation and other countries.
- Travel restrictions and border closure with China introduced due to the spread of the COVID-19 pandemic.
- Prices of staple food commodities show slow but gradual increase.

MARCH-APRIL

- Increasing anxiety and panic amongst the population.
- Due to uncertainties and panic, households purchased and stocked more food.
- Cost of staple food commodities increased due to high demand.
- Lack of medication and absence of right conditions for proper treatment and medical care.
- COVID-19 pandemic rising in the Russian Federation and general lockdown introduced.
- Migrant workers remain without jobs and remittances reduced by more than half compared to pre-pandemic period.

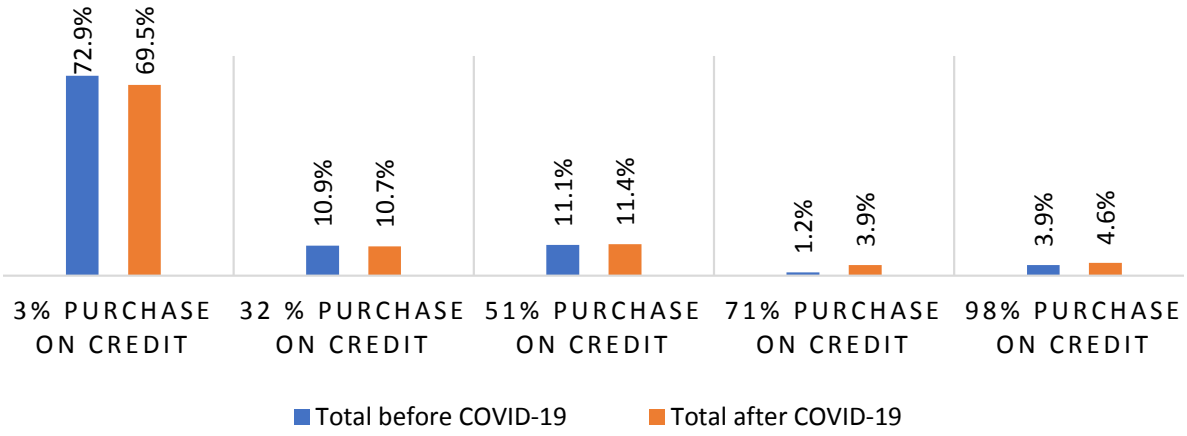
MAY-JUNE

- Increasing anxiety and panic amongst the population.
- Increased purchases and stocking of food.
- High demand caused increased staple food costs.
- Lack of medication and absence of right conditions for proper treatment and medical care.
- COVID-19 pandemic increased in the Russian Federation and lockdown was introduced.
- Migrant workers remain without jobs and remittances reduced by more than half compared to pre-pandemic period.
- Delays in pension payments and wages to public employees.
- Access to credit from the banks is restricted.

JULY-SEPTEMBER

- Movement restrictions in the Russian Federation and Tajikistan lifted.
- Staple food prices gradually stabilized in the markets.
- Labour migrants unable to return to the Russian Federation and remain unemployed.
- Rural populations spend less on non-food items, purchase low-quality food products and many borrow food products from local food stores.
- Charter flights started operating with the Russian Federation and other countries.
- Borders opened for cargo transport with neighbouring countries.

Figure 27: Tajikistan - Households' food purchases on credit

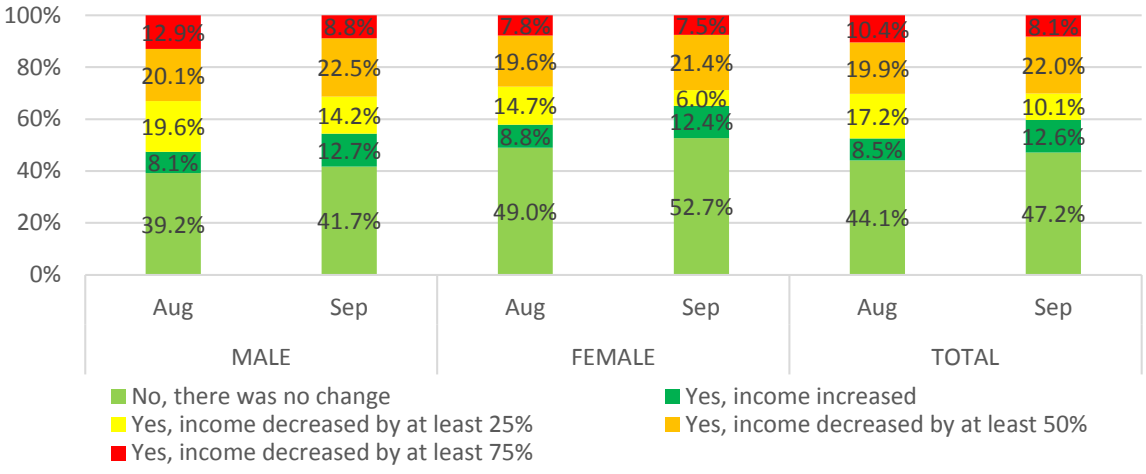


Source: CFSAM, 2020.

Food purchases on credit: On average, over the two months, four-fifths of the household respondents reported that 3 percent of their food was purchased on credit before and after the COVID-19 pandemic. For one-tenth of the respondents' transactions on credit took place in 32 percent of the cases and with no significant differences before and after the COVID-19 pandemic. Meanwhile, for an average of 3.4 percent of the households, their food purchases on credit was done in the range of 71-98 percent of the cases and the proportion of the households in this group increased their use of credit by 2.7 percentage points after the COVID-19 pandemic.

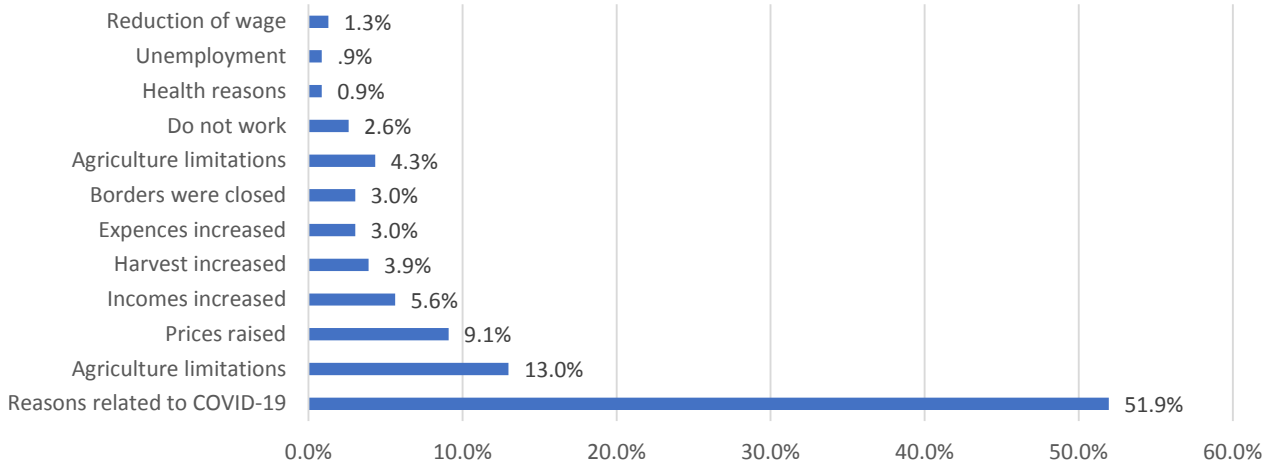
Income status: To assess the income situation of the households due to the COVID-19 pandemic and related containment measures, respondents were asked whether their income had changed since March 2020 and compared to the same period last year. Nearly one-quarter of the households (21 percent) reported that their income had decreased in half, while 14 percent reported a decrease of 25 percent in their income. Lastly, those households that reported a decrease in income by 75 percent comprised of an average of 9.3 percent of the households over the period of two months. The same pattern in income composition of the households was observed in the analysis of this data disaggregated

Figure 28: Tajikistan - Effects of COVID-19 pandemic on households' income in March 2020 compared to the same season in March 2019



Source: CFSAM, 2020.

Figure 29: Tajikistan - Reasons for change in households' income



Source: CFSAM, 2020.

by gender of the head of the household. Meanwhile, 45.7 percent of the respondents over the period of two months reported there was no effect on their incomes, while 10.5 percent reported an increase in their income this year compared to the previous year.

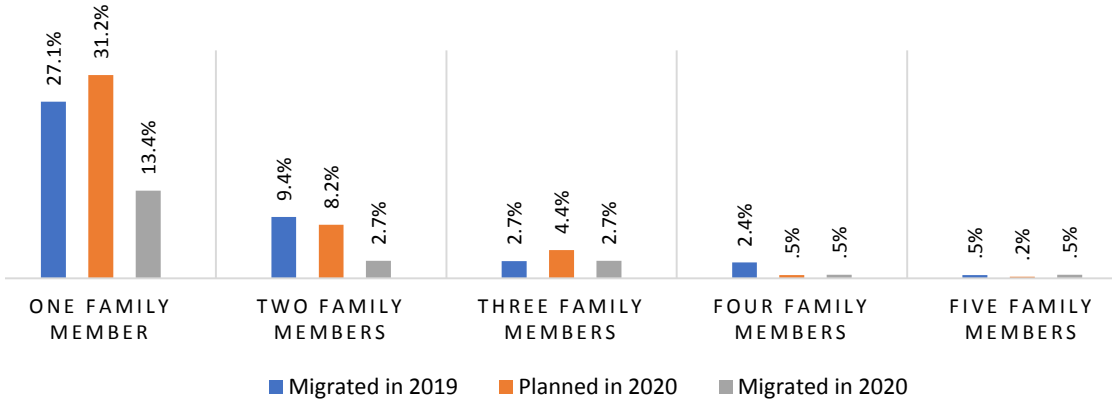
The reason for these changes in income were also reported by respondent households and were associated to different factors, with the most significant one mentioned being COVID-19 and related containment measures (52 percent of the respondents). The second highest, although much less in proportion compared to the COVID-19-related, was unemployment by 13 percent of the respondents and in the third place is 9.1 percent of respondents who reported they did not know the reason. The remaining other factors were mentioned in less percent of the cases with the numbers varying by the range of 0.4-6 percent of the respondent households.

Migration and remittances: Tajikistan remains reliant on external labour migration and remittances that provide significant portions of income for the population. There are several countries where Tajik migrants travel for work including the Russian Federation, Kazakhstan, Kyrgyzstan, Turkey, the Republic of Korea, Ukraine and China. Most of the labour migrants travel to the Russian Federation, which has been historically connected to Tajikistan; there are more job opportunities available in the Russian Federation and its immigration policies are more receptive to Central Asian countries.

During the second quarter of 2020, the COVID-19 pandemic worsened in the Russian Federation causing the introduction of a general lockdown that left migrant workers without jobs. The impact from this lockdown on remittances for Tajikistan was significant, as most of the money transfers originates from the Russian Federation; KII with Government personnel confirmed transfers reduced by more than half during this period.

As the movement restrictions in the Russian Federation and Tajikistan were gradually lifted from June 2020, the situation improved and some migrant workers began to send remittances, albeit in much smaller amounts than pre-pandemic. As one respondent in Sughd Region mentioned, "Before, 10 000 Roubles were received per month but for the last months only RUB 3 000-RUB 4 000 were received." A Government respondent from Ghonchi District in Sughd Region, indicated that remittances transferred to Amonatbank in 2019 amounted to TJS 63.3 million, while during the same period in 2020, transfers were about TJS 30 million. Most respondents in the districts of Mastchoh, B Ghafurov and Kanibadam, Sughd regions, reported that most rural families did not receive remittances for the past few months and only a small number of families received remittances in July 2020. In a case of "reverse-remittances" households in these districts reportedly sold their livestock and borrowed money to send to their migrant family members in the Russian Federation to cover the expenses related to food and rent.

Figure 30: Tajikistan - Immediate family members (parent, partner, children, siblings) migrated outside to work



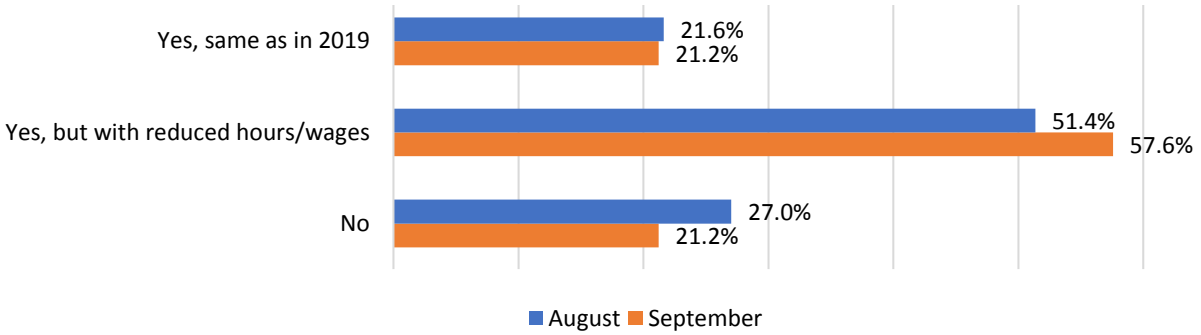
Source: CFSAM, 2020.

Travel restrictions to other countries had not been lifted at the time of data collection. Many labour migrants remain in Tajikistan without employment but are hopeful for the removal of flight restrictions with the Russian Federation. While those migrant workers who departed to the Russian Federation at the end of 2019 or early 2020 were more able to find jobs during the pre-pandemic period, the movement restrictions have limited their resources. Migrant workers usually engage in construction services or other casual labour, which have been some of the hardest hit sectors during the movement restrictions. Nevertheless, the majority did not wish to return to Tajikistan, as they felt that the prospect of finding well-paid jobs was low. Based on reports from interviewed respondents, the daily labour rate in Tajikistan has been decreasing compared to 2019 due to the high supply of labour, as seasonal migrant workers remained in the country and the demand for labour dropped due to the changing economic situation. In this regard, the households were also asked about their family members who migrated outside the country for labour. Although this survey was conducted during the third quarter of 2020 and does not cover the full year, if compared with 2019, the proportion of migrants decreased by two folds. According to the survey data, 27.1 percent of the households reported that one member of their family migrated in 2019. While 31.2 percent of the respondents indicated at least one member of their family planned to migrate in 2020, 13.4 percent actually had a household member who migrated. The households that had two family members in migration was 9.4 percent in 2019 and 2.7 percent in 2020 against the planned 8.2 percent. This same migration pattern is observed with families who had three or more family members in labour migration in 2019 and 2020, though in smaller percentages compared to the families who had one and two members in migration.

For the households that had family members abroad in 2020, on average over the two months, 21.4 percent reported that their family members were able to find employment in their country of destination the same way as it was in the previous year, with no significant differences between August and September 2020. The households that mentioned that their family members found employment but with reduced hours/wages was at 54.5 percent, with a decrease by 6.2 percentage points in September compared to August 2020. The remaining households (24.1 percent) stated their family members did not find employment in their country of destination, with a decrease by 5.8 percentage points in September compared to August 2020.

Of the respondents who had a family member in migration with reduced hours/wages, 30.8 percent in September 2020 indicated their family member tried to return to Tajikistan; however, of this, 32.7 percent (average of the two months) stated their family member could not afford to return. The households who reported their family member in migration could not afford to return was 3.7 percentage points higher in August compared to September 2020. The households whose family member in migration could not return due to travel restrictions comprised 34.5 percent in

Figure 31: Tajikistan - Availability of employment in the country of destination, 2020



Source: CFSAM, 2020.

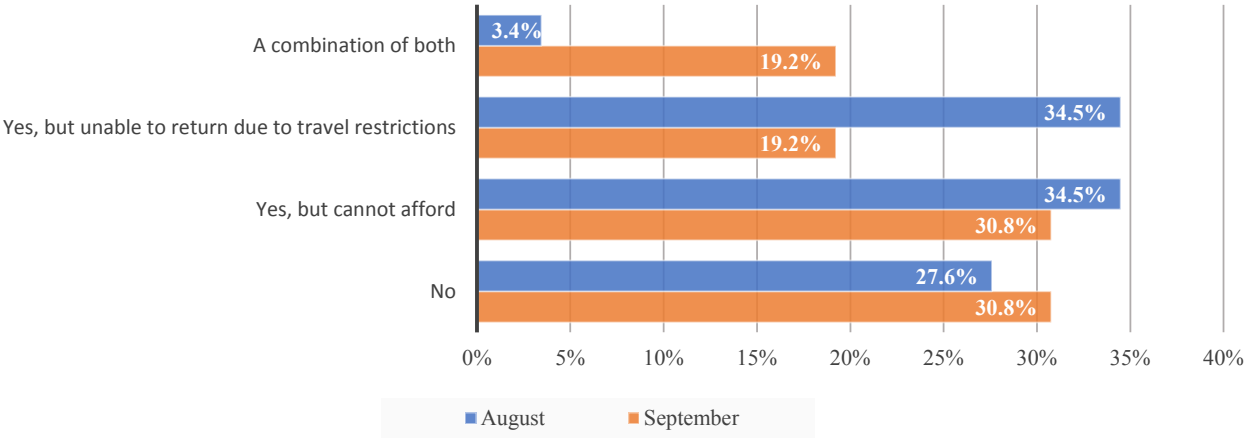
August and 19.2 percent in September. The households that reported their family member in migration could not return due to both reasons were 3.4 percent in August and 19.2 percent in September 2020.

Remittances: To understand the change in remittances received, possibly due to the effects of the COVID-19 pandemic, questions referring to 2019 were asked. On average over the two months, 44.15 percent of the households who had a family member working abroad received remittances in 2019. One-third of the respondents said that they did not have a family member working abroad and another one-quarter of the respondents mentioned that they did not receive any remittances in 2019, even though they had a family member in migration.

According to the respondents, the remittances received from migrant workers in 2019 were used towards various social needs, including food (98.4 percent), agricultural inputs (59.6 percent), education (37.7 percent), medical treatment (21.3 percent), social and household renovation/construction (9.8 percent) and other needs in smaller cases.

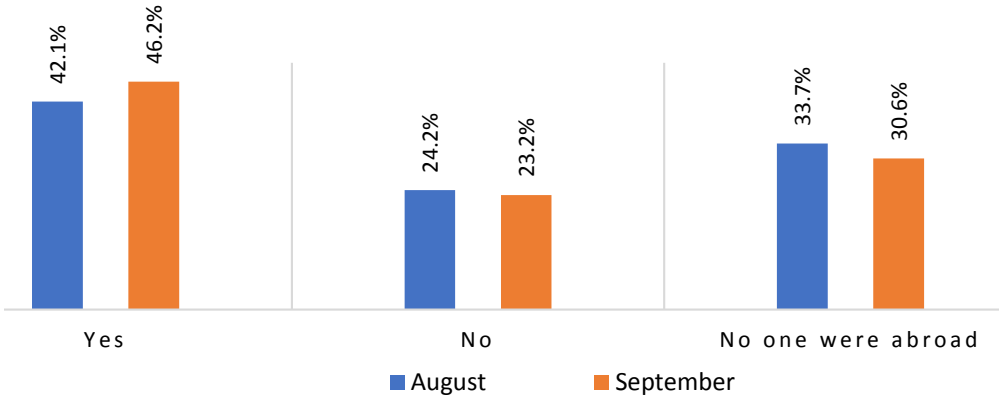
The respondents were also asked about remittance flow from migrant family members to their households back at home starting from March 2020 and an average of 23.7 percent (August-September 2020) reported that they received remittances but in reduced amounts compared to the previous year, while an average of 7.6 percent mentioned receiving the same amount as in 2019.

Figure 32: Tajikistan - Migrants who tried to return due to lack of employment/reduced wages



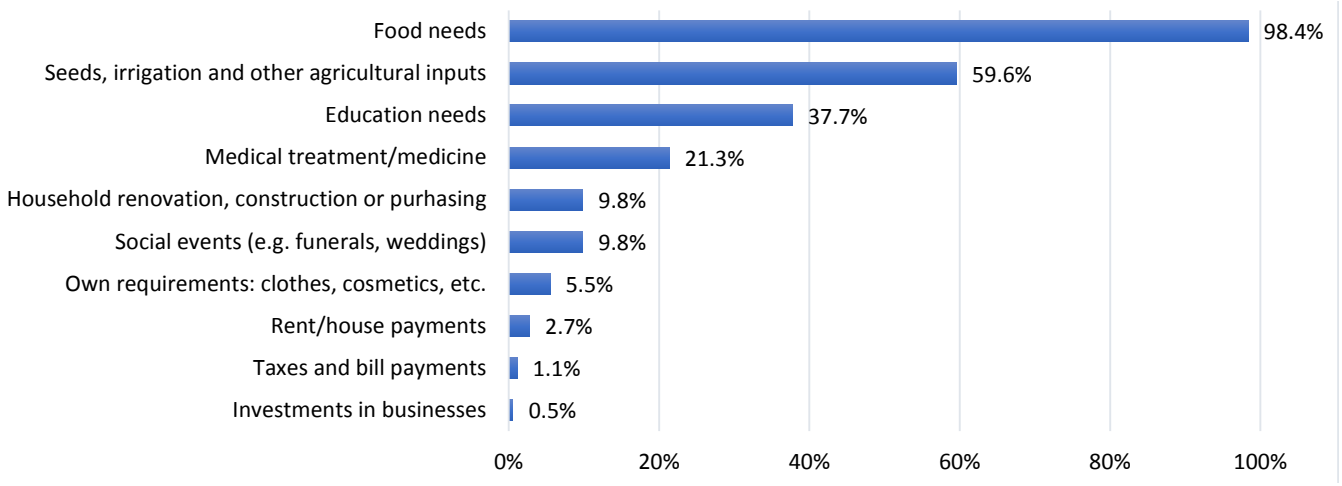
Source: CFSAM, 2020.

Figure 33: Tajikistan - Households receiving remittances from family members working abroad, 2019



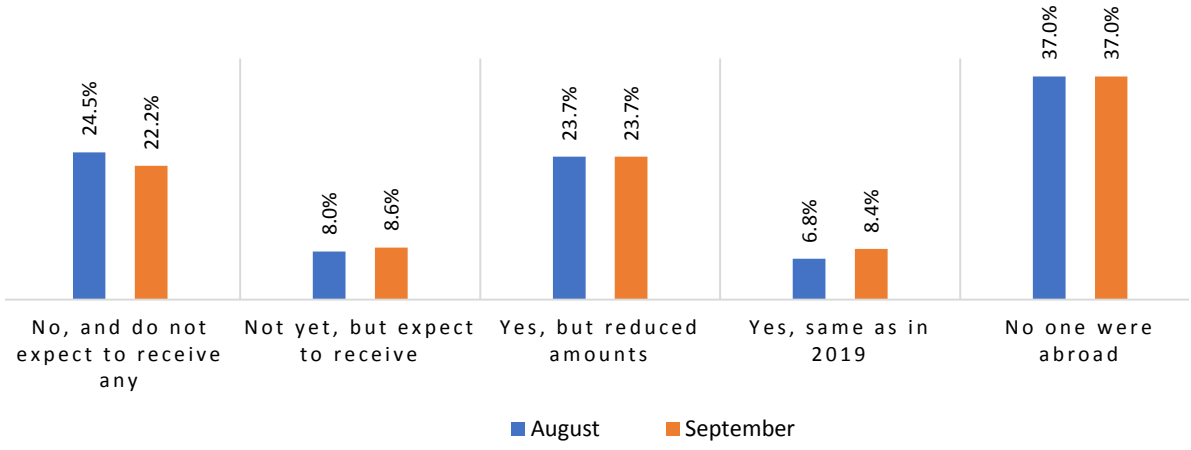
Source: CFSAM, 2020.

Figure 34: Tajikistan - Expenses covered by remittances from labour migrants from abroad



Source: CFSAM, 2020.

Figure 35: Tajikistan - Remittances received, 2020



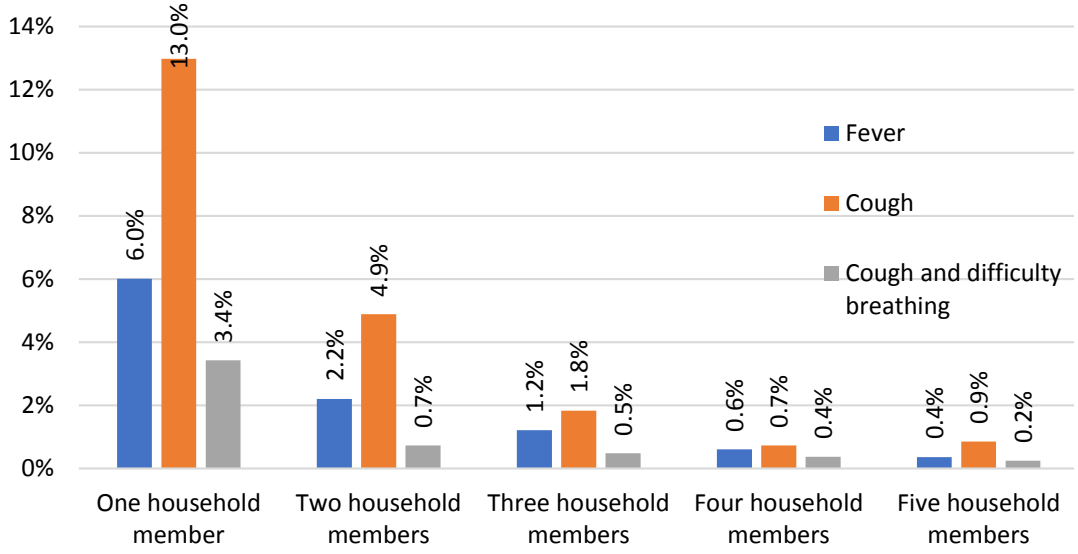
Source: CFSAM, 2020.

Health status and access to health services

For the health status assessment, the respondents were asked whether they had any family members with symptoms of cough, fever or breathing difficulty during the past 14 days and if they did, whether they sought medical assistance and where. Based on survey data, the households that reported they had one to two family members with symptoms of fever comprised of 2-6 percent, cough (5-13 percent) and from 0.7-3.4 percent had cough and difficulty breathing symptoms.

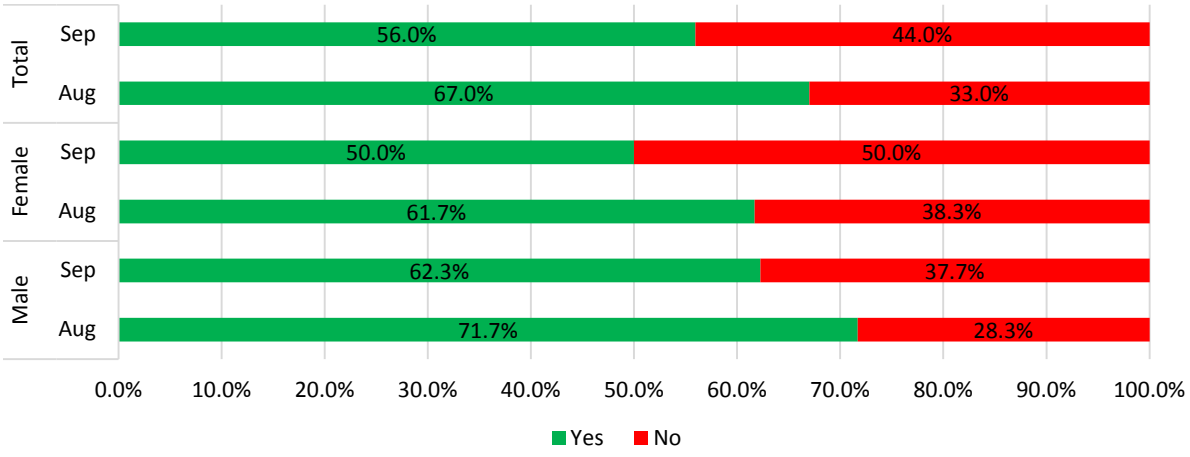
From those households that had a family member with any symptoms, 44 percent said that they did not seek medical care when surveyed in August 2020. During the September 2020 survey, the proportion of respondents that did not seek medical care decreased to 33 percent. The analysis of this data disaggregated by head of household's gender shows male-headed households were more inclined to seeking medical care versus female-headed households. This is a difference of 10 percentage points in August and 12.3 percentage points in September 2020.

Figure 36: Tajikistan - Number of household members showing symptoms of fever, cough and difficulty breathing in past 14 days



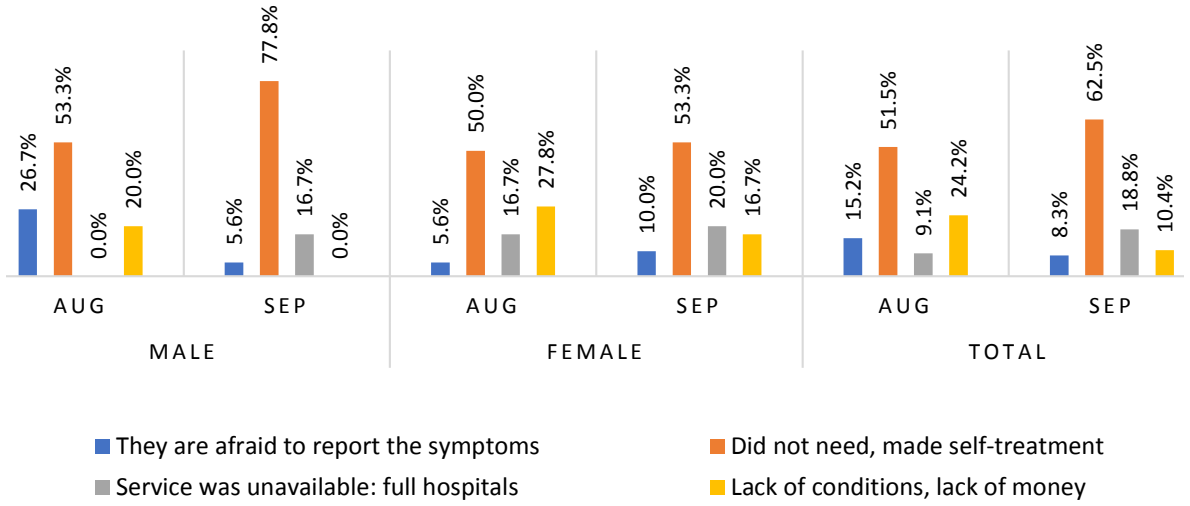
Source: CFSAM, 2020.

Figure 37: Tajikistan - Household members with symptoms seeking medical care either at home or in hospital/health centres in past 14 days



Source: CFSAM, 2020.

Figure 38: Tajikistan - Reasons for not seeking medical care either at home or in hospital/health centres by household family member

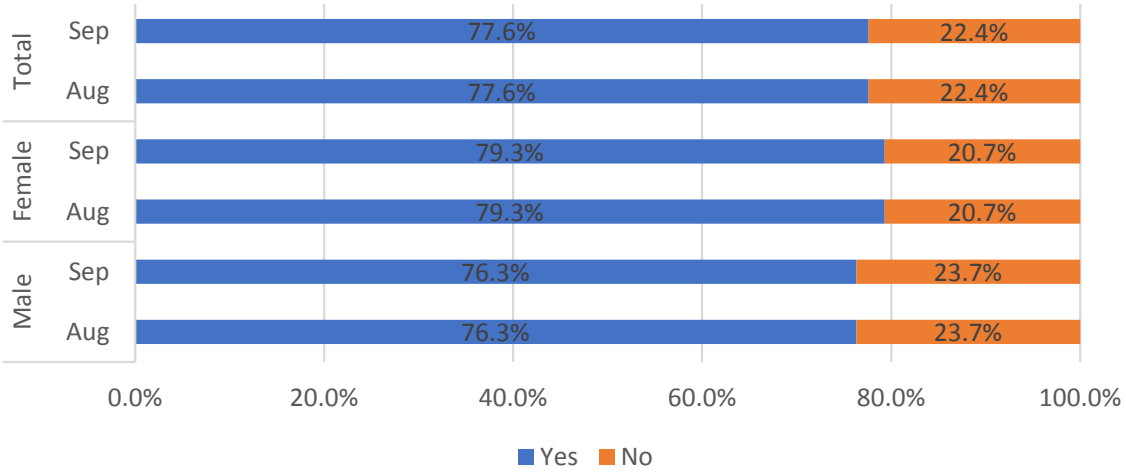


Source: CFSAM, 2020.

The main reason for not seeking medical care despite family members having symptoms of cough, fever and difficulty breathing, was being afraid to report the symptoms (15 percent of the respondents in August versus 8.3 percent in September 2020). The households who preferred self-treatment comprised 51.5 percent in August and 62.5 percent in September 2020. The respondents that mentioned not having the services available or referred to the overwhelmed capacity of hospitals, were 9.1 percent in August versus 18.8 percent in September 2020. Lastly, the respondents that did not seek medical care due to lack of money were 24.2 percent in August, decreasing to 10.4 percent in September 2020.

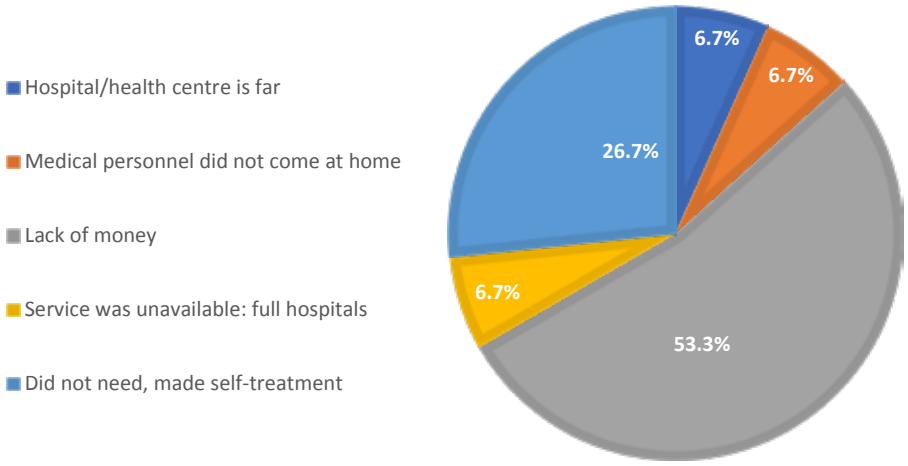
The respondents who reported seeking medical care when their family member had symptoms of cough, fever and difficulty breathing in the past 14 days, were asked whether their sick family members were able to receive medical care. As a result, 77.6 percent mentioned they were able to receive medical care at home or in the hospital/health centres both in August and September 2020. The female-headed households reported being able to access medical care by higher proportion compared to the male-headed households which is a difference of 3 percentage points.

Figure 39: Tajikistan - Members of the household that were able to receive medical care either at home or in hospital/health centres in past 14 days



Source: CFSAM, 2020.

Figure 40: Tajikistan - Main reasons why household members could not receive medical care either at home or in hospital/health centres

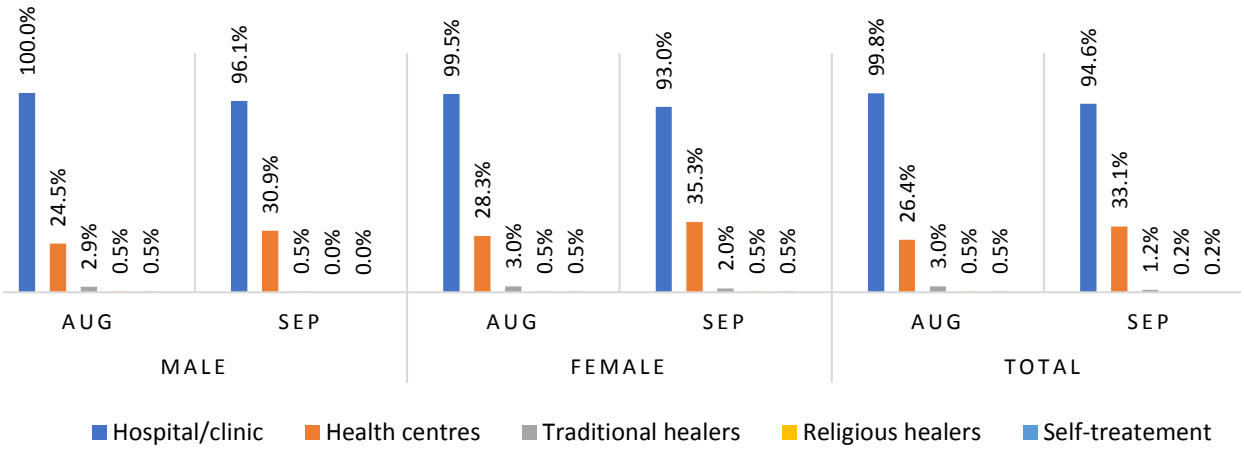


Source: CFSAM, 2020.

The respondents who stated that they were not able to receive medical care either at home or in the hospital/health centres were from 22.4 percent of the households. Reasons for not being able to do so included not having money to pay for the services (53.3 percent), self-treatment (26.7 percent), not having available services in their area or the medical personnel did not visit them at home (6.7 percent). Another 6.7 percent of the respondents reported that hospital or health care centres were far from their home.

The most frequent places that the respondents mentioned they usually went to when the household member got sick were hospitals and health care centres and, in a small number of cases, some of the households also reported referring to traditional healers, religious leaders or self-treatment. Based on August and September 2020 survey results, from 94-99 percent of the households reported going to a hospital when family member got sick, 26-33 percent went to health centres and in 1-3 percent of the households also went to traditional healers, religious leader or did self-treatment.

Figure 41: Tajikistan - Health care services most frequently accessed by households' members when feeling sick



Source: CFSAM, 2020.

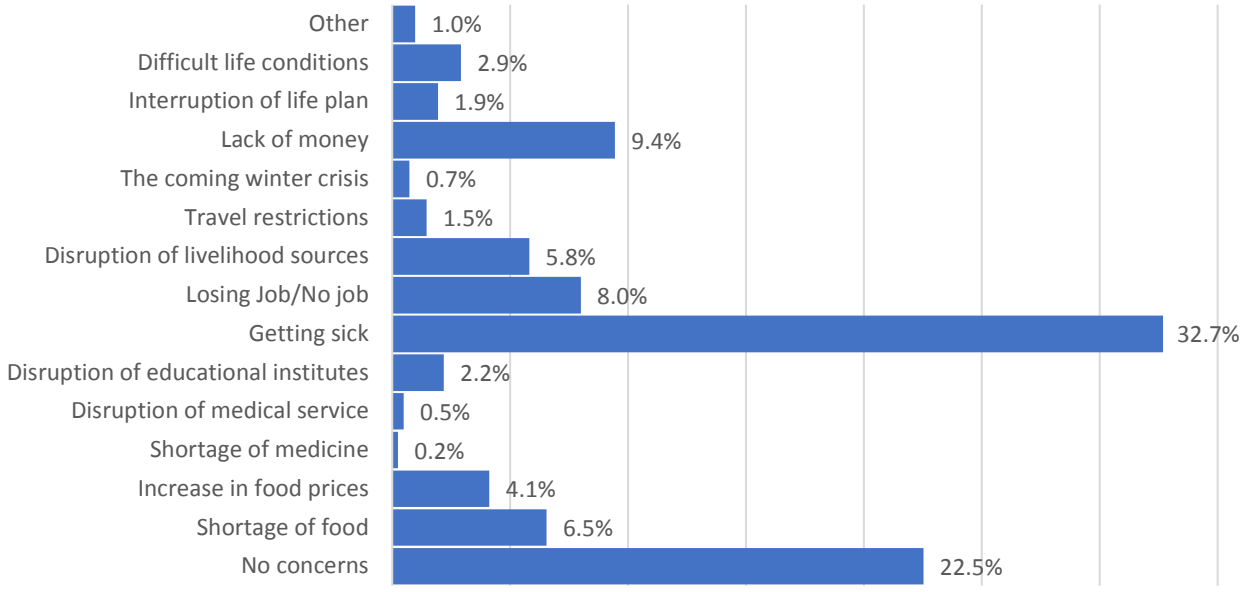
General concerns on food security

The general concerns and challenges mentioned by KII respondents due to the COVID-19 pandemic were as follows:

- Movement restrictions were costing some people their jobs and have led to loss of income.
- Loss of income and lack of funding prevented vulnerable families from receiving appropriate treatment and consumption of nutritious foods.
- Lack of medications and absence of right conditions for proper treatment and medical care.
- Rising costs of staple food commodities and loss of harvest in some regions
- Anxiety and fear amongst the population about the spread of the infection led to more stress and depression and was associated with other diseases such as hypertension and diabetes.

In addition, based on a quantitative survey of households' respondents, the average results over August and November 2020 showed that 32.7 percent of the respondents were concerned about getting sick, 0.5 percent were concerned about disruption of medical services and 0.2 percent mentioned a shortage of medicine. The lack of money was the second most cited issue (9.4 percent of the respondents), followed by 8 percent who feared losing their jobs or having no job, 6.5 percent were concerned about the shortage of food and 4.1 percent mentioned increases in food prices. Other concerns were mentioned with comparatively less proportion, while 22.5 percent of the households mentioned having no concerns at all under the current circumstances.

Figure 42: Tajikistan - Households' most important concerns under current circumstances as a result of the COVID-19 pandemic



Source: CFSAM, 2020.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RECOMMENDATIONS

Agriculture and livestock

- Promote crop diversification and introduce crop rotation, especially in rainfed areas that are mostly characterized by mono-culture of wheat and other cereals.
- Increase the use of local crop varieties that are more resistant to adverse weather and are adapted to local soil and climatic conditions.
- Increase food production by sowing second season crops, especially in areas with irrigation, or growing two or more crops in the same field. The use of greenhouses during the autumn-winter season is an option.
- Improve the national seed production system in order to provide an adequate and timely supply of seeds for planting crops during both seasons. Promote the use of quality seeds, free of weed seeds and with obligatory protectant treatment.
- Conduct an inventory of imported pesticides and analyze if they have a negative impact on the environment.
- Strengthen mechanized service points by the MoA and improve the supply of machinery and provide financial support to farmers to purchase small machinery.
- Establish demonstration plots to inform farmers about new crop varieties and cultivation technologies.
- Establish outlets (agro-shops) of high quality products: seeds, fertilizers and pesticides in regional centres.

- Establish wholesale (seasonal) markets for agricultural and livestock products in far districts, encouraging mechanisms to increase farmers' capacity to receive better prices, to increase sales and to lower transaction costs.
- Establish small enterprises for processing agricultural products (dried fruits, canned food and juices) with the aim to increase farm incomes, reduce crop losses and create jobs.
- Increase planting of grain and leguminous crops through the introduction of new technologies, the application of organic and mineral fertilizers and the use of integrated protection systems of agricultural crops.
- Promote the adoption of energy and water saving technologies (no-tillage technology).
- Strengthen the organization and the efficiency of WUAs, directly involving the

Agency for Irrigation and Land Reclamation. Main activities to be carried out: cleaning, repairing and rehabilitating the existing irrigation and drainage infrastructure, building new irrigation facilities and adopt pumping stations with modern engines.

- The MoA, together with other ministries, could consider the possibility to produce mineral fertilizers in the country.

- Strengthen the MoA capacity to establish extension centres to provide farmers with the necessary information and knowledge on crop and livestock production. The *jamoat* agricultural offices should be provided with posters and visual aids on land preparation, seed production, selection and treatment, irrigation, pest control and post-harvest management of agricultural products. With support of the Academy of Agriculture Sciences of the Republic of Tajikistan and the Tajik Agrarian University, organize periodical field visits to provide consultation and recommendations on farmers' specific problems and technical issues.

- Select high yielding livestock breeds and poultry for each specific region; strengthen the capacity, quality and outreach of veterinary services; improve measures of prevention and control of diseases; promote the adoption of advanced animal feeding technologies, development of scientifically grounded animal nutrition, etc.

- Improve the availability of, and access to, pastures and water for livestock as well as increase the production of fodder and the number of domestic facilities for the production of combined feed. Prepare in advance the necessary amount of animal feed for the winter period.

- Build a slaughter house that meets sanitary and environmental standards.

Household food access

- Preposition adequate food stocks in mountainous areas, especially where roads are closed in the winter.

- Provide food assistance for the most affected/vulnerable households throughout 2021.It should primarily target the households severely affected by the COVID-19 pandemic. The mechanism for delivery should be agreed upon among the communities, development partners and relevant government agencies.

- Support farmers in better managing the risks posed by weather and climate-related hazards through improved access to real-time information and development of weather index-based insurance solutions that can be piloted and scaled across the country.

- In line with Government priorities, scale up nutrition responses all over the country through programmes such as social behaviour change communication and, for the short term, the provision of specialized nutritious commodities or cash to purchase nutritious commodities. These efforts should be supplemented by longer-term solutions such as development of public and private partnerships to ensure a nutritious supply chain within the country, including through fortification.

- Support the Government in strengthening the targeted social assistance system to ensure national coverage and identification of vulnerable households.

- Seek opportunities to engage in

multi-sectorial interventions to build resilience of the vulnerable households, with specific targeting of labour-migrant people.

- Expand the use of Cash-Based Transfers (CBTs) in the areas where markets are functioning to encourage crop production and improve market supply stability through demand-side incentives.

Food security monitoring capacity

- Provide support and capacity building to the Government to conduct periodic assessments of the food security and nutrition situation of the population at national and subnational levels to provide anticipatory responses to natural and economic shocks.
- Continuously monitor the impact of the COVID-19 pandemic and its containment measures on food security and nutrition conditions to periodically fine-tune the country's response.
- Improve and ensure the long-term utilization of remote sensing data and predictive analytics to assess the risk of weather hazards on cereal production.
- Strengthen early warning systems by improving the monitoring, reporting and dissemination of rainfall, market prices, access to land and cropping conditions along the season, including through the promotion of Sentinel-2 data to country scale crop type mapping. This should involve: i) monitoring rainfall performance through remote sensing and GIS techniques in order to improve the quality of crop forecasting and thus the reliability of assessments; and ii) exploring the availability of high resolution satellites imagery, which can be used to estimate the area planted, yield and production.
- Strengthen existing price and market monitoring tools by expanding the number of monitored commodities and improving the monitoring of cross-border markets and trade.
- Monitor the affordability of the food basket with particular attention to nutritious food commodities, linking households' food security and the evolution of market prices.


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ANNEX 1

Terms of Reference of the CFSAM

The CFSAM was designed, planned and implemented by the two agencies independent of external involvement and responsibility for the conclusions and recommendations of the Mission and the presentation of the same, rests with the core team members assigned or contracted by FAO and WFP and remains free from any political or institutional influence. Under remote guidance by FAO and WFP staff abroad, the core team members will prepare the draft report that is then jointly reviewed, cleared and approved by FAO and WFP, at the headquarters and regional levels, respectively.

FAO duties and responsibilities during the Mission were as follows:

- Consult with Government officials, donor representatives, international humanitarian agencies, NGOs and traders on the 2020 food crop production prospects and the current food supply situation in the country.
- Collect and analyze available information concerning planted areas, yields and production forecasts for 2020 main staple crops and on the various factors that affected yields throughout the season. Satellite imagery will be used to describe the evolution of the season and its impact on the condition of standing crops.
- Travel to main cropping areas and appraise the state of current main season crops.
- Use the collected information to estimate the output of the current main season and to forecast the next secondary season crops production.
- Review the prevailing macro-economic environment, collect information on factors affecting the food production and agriculture situation. These include, but are not limited to, relative prices of agricultural inputs and outputs, exchange rates, real interest rates, foreign exchange reserves and commercial import capacity for food.
- Collect and analyze available information on commercial food imports and exports, and food price trends.
- Estimate available food stocks held by Government agencies, traders and farm households.
- Assess the food situation in the country and prepare a supply/demand balance sheet of staple foods for the2021 marketing year (January/December), including anticipated commercial imports and food assistance needs, if any, at country level.


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WFP duties and responsibilities during the Mission were as follows:

- Critically review all available information on the food security situation at household level.
- Review relevant information related to contextual factors of food and nutrition security.
- Examine available market data and the implications for households' food security among vulnerable population groups and the degree of dependence of socio-economic groups on the food markets.
- Examine available information on the structure and functioning of the domestic markets.
- Review available data on nutrition and related factors, such as access to safe food, water, sanitation and hygiene; identify the nature and distribution of reported nutritional problems and examine the probable linkages with the food security situation and other factors.
- Review information on social support systems and assistance for food insecure people.

ANNEX 2

Assessment methodology

Crop assessment

The crop assessment was conducted in two rounds: in July 2020 for the assessment of first season crops and in September 2020 for the assessment of second season crops.

Due to the spread of the COVID-19 pandemic, there were difficulties with movements and meetings with farmers, but precaution measures were taken during the interviews, social distance, masks, gloves and disinfecting materials were used during the field work:

- Four working groups comprising of four members in each group started working in July (ten days). These groups assessed four agricultural zones in three regions: Sughd, DRS, Khatlon-Kulob (zone), Khatlon-Bokhtar (zone) for the first season. In September (ten days), these groups assessed five agricultural zones in four regions: Sughd, DRS, Khatlon-Kulob (zone), Khatlon-Bokhtar (zone) and GBAO for the second harvesting season.
    - Assessments were conducted in 26 out of the 57 agriculture districts of the country. The assessments included:
    - Collecting information about areas planted with all crops during the first and second cropping seasons in *dehkan* farms and households' plots.
    - Interviewing of 372 farms of all the above-mentioned categories located on the territory of 53 administrative/territorial formation of districts subordination (*jamoat*).
    - During the farms surveys, to ensure the quality of the crop assessment of all crops, a special CFSAM checklist was used (Annex 3).
    - The data from each interview entered into an cxcel spreadsheet and thus created the Mission's database. Qualitative indicators were calculated as a percentage of the number of respondents who answered this or that question. If in different zones there were different percentages, then the report shows the values from minimum to maximum in percentages.
    - Data on the area and harvests of crops on *dehkan* farms and households' plots were obtained from farmers during the face-to-face interviews.
    - To calculate production for selected districts, the data on cultivated areas provided by the districts' departments of agriculture were supported with average yield data collected by the Mission for the ready-to-harvest crops (cereals) based on the total yield data calculated for each district. Data collection mechanisms correspond to the common and, as it was mentioned, a multi-stage approach.

The National Consultant on food security analysis (Agriculture Economist) conducted desk study analyses of the obtained data from the Mission members through the completion of forms, meetings and phone calls:

- For comparison purposes, the data on cultivated areas and agricultural production by year were obtained from the AoS and MoA.

Upon returning to the capital, Dushanbe, all FAO, the Ministry of Agriculture and AoS working teams, who participated in the assessment at the national level, responded in detail to the questions on the districts and regions they had visited. Questions were asked for each area separately. The interview format was in accordance with the recommendations of the technical notes included in the latest edition of the FAO/WFP Guidelines for CFSAMs. All production estimates were carefully verified, yield calculations were corrected taking into consideration the type of seeds, sowing timelines, timelines for fertilizers application and

amount of applied fertilizers, spread of seasonal pests and diseases, such crops productivity in neighbouring areas, historical data, after which the data was compared with that of other independent assessments conducted in the same locations. The results of the discussions were formalized and the information obtained by the working groups was in details, that allowed to conduct a quantitative analysis of the factors influencing the cultivation areas and yields.

Key Informant Interviews

For the qualitative data collection, semi-structured questionnaires were designed for key informants' interviews to help assess the food security situation for the households and two other questionnaires were also designed for the interviews with wholesale traders and millers. These questionnaires focused on different aspects of food security such as:

- Staple food access, availability and affordability in the region.
- Income, employment and migration.
- Nutrition.
- General questions on COVID-19.

These tools were reviewed by the WFP team (including inputs from regional and headquarters levels) and were tested in the field before the actual field work commenced. FAO supported with translations into Tajik. Before conducting data collection, the WFP Mission team went through training on the use of the tools and received an introduction session on conducting qualitative interviewing. Upon completion of the field data collection, the KII notes were entered into a centralized structured table, analyzed for common themes and patterns, and summarized into a brief narrative report by the technical team. A table reflecting locations and interviews is provided in the annexes.

In addition, a WFP-RAM team conducted a desk review through remote sensing analysis to select high priority areas for CFSA-KII Mission in GBAO Province. This exercise helped identify the districts and villages where the field team eventually conducted the data collection in this specific region. More details about this exercise are provided in Annex 5.

Limitations: This aspect of the study used qualitative approaches to the food security situation in the targeted locations and provided insights from individual key informants' points of view and, therefore, does not provide a generalizable view of the population's condition. While the reports from key informants provide valuable and in-depth insights, the findings should be supplemented by the spatial and quantitative data collected at the same time. In addition, the sample of respondents covered under this study does not include wider geographic coverage due to time and budget limitation of this exercise.

Households' Food Security Survey

Data collection: The quantitative data collection for households' food security situation was to be implemented by an out-sourced company that was sub-contracted by WFP. This data was collected through a telephone survey (CATI method - Computer Assisted Telephone Interviewing) with households' respondents from the four regions of the country including Sughd, GBAO, Khatlon and DRS. The survey duration consisted of 20-30 minutes with each respondent, beginning with a request for consent from the respondents. To ensure quality during the data collection, a database specialist verified all completed and uploaded questionnaires against the audio recordings.

Questionnaire: WFP food security experts developed a household survey tool to be administered remotely and in the context of COVID-19 for use by the service providing agency. In addition, training was conducted by WFP food security experts. The tool was translated into Tajik and Russian and was pre-tested by M-Vector enumerators with any final feedback integrated to the questionnaire through an agreement with WFP. The questionnaire was programmed into an electronic version using proprietary M-Vector software. The questions covered by the survey included:

- Change in frequency and portion size of a meal eaten per day per household.
- Migration and remittances.
- Food consumption and access to food markets.

- Coping strategies.
- Credit and income.
- Health status and access to health services.
- General concerns.

Sample of respondents: The household survey was conducted in two rounds across the four regions of the country. During the first round of data collection, 413 respondent households were interviewed with 50 percent comprising of female-headed households. In the second round of household interviews, 405 respondents covered and again covering equal proportion of male and female respondents. Initially designed as a panel survey, attempts to reach the same household during the second round were made. Due to a combination of non-response and some respondents declining to be interviewed, 268 repeat respondents were reached and 137 new respondents were interviewed. The majority of respondents were aged between 30-50 with the second largest group being between 50-70 years of age. A detailed table of respondent's sample size and disaggregation by sex is provided in Annex 9.

Limitations: There are certain limitations that should be considered when reviewing the findings of this survey:

- The overall number of respondents in this survey is statistically representative nationally, but not at regional level and should be considered as indicative of the situation only.
- Respondents to the telephone surveys may not be as confident to provide candid responses for fear that the enumerator may not be trustworthy.
- The enumerator could not assess vital body cues during the conversation.
- Respondent fatigue during the phone-based surveys limited the ability to probe or ask follow-up questions.
- A bias against those who do not own or have access to a telephone exists.

ANNEX 3

Sample of checklist for use in crop assessments

- Location
- Rainfall: amount, distribution (average, 2019 and 2020).
- Irrigation: type, source, irrigated area.
- Main crops grown.
- Planting date; delays; re-seeding.
- Harvesting date, delays.
- Changes in cropping pattern (change to different crops; reasons for change).
- Areas of main crops (any change? why?)
  - 2020 main season crops:
    - Planted area (hectare).
    - Harvested area (hectare).
  - 2020 secondary season crops:
    - Expectations to plant (hectares).
- Land:
  - Farm size (any change?).
  - Land tenure system (any change?).
- Inputs: availability and cost (any change?):
  - Seeds:
    - Variety.
    - Source (own, market, FAO, other).
    - Seed rate (kg/hectare).
    - Price.
  - Fertilizers:
    - Type.
    - Type of application.
    - Quantity (kg/hectare).
    - Price.
  - Other: pesticides, herbicides.
- Mechanization: availability and cost (any change?):
  - Tractor.
  - Harvester.
  - Seeding machine.
  - Other.
- Farm labour: availability and cost (any change?):
  - Source (family, hired workers).
  - Daily salary.
- Crop problems (compared with previous year):
  - Pests: main pests, provinces affected, losses.
  - Diseases: main diseases, provinces affected, losses.
  - Insecurity
  - Marketing:
- Whom they sell, how much.
- Stocks.
- Yield expectations (tonne/hectare):
  - Comparison with previous year and with long term average.
- Roots and tubers: status compared with previous year.
- Vegetables: status compared with previous year.
- Tree crops: status compared with previous year.
- Livestock (compared with previous year):
  - Species (cattle, sheep, goats, poultry, aquaculture, etc.).
  - Size of herds (current and compared with previous year).
  - Major disease outbreaks.
  - Body conditions.
  - Veterinary support (vaccinations, etc.).
  - Feed availability and cost.
  - Pasture conditions and availability.
  - Availability of drinking water.
  - Sales, market prices and price trends.

ANNEX 4

Cereal production in 2020 by region/zone

Khatlon Region

Khatlon Region occupies the southwestern part of Tajikistan, from the Hissor ridge in the south to the Pamir in the west. The wide river valleys of the region (rivers Nizhniy Kofarnikhon, Vakhsh, Kyzylsu) are divided by mountain ranges diverging in the southwest direction from the mountain mass located in the north. Mainly grain, cotton, grapes and flax are grown in Khatlon Region. The region is the leader in the production of livestock products (milk and meat). The western part of Khatlon: Kurgan-Tyube has the warmest climate in the country. Cotton and other sub-tropical crops are cultivated on large irrigated areas in the valleys of the Nizhniy Kofarnikhon and Vakhsh, in the west of the Khatlon Region. The east of the region (Kulyab) is mainly mountainous. Valleys, which are relatively small in area, are located along the Yakhsu and Kyzylsu rivers in the area of Kulyab City. The main direction of agriculture here is cotton growing. The main sectors of agricultural production, by order of their importance are cotton, grain, livestock and horticulture. Such a structure is typical for both Khatlon: Kulyab and Khatlon: Kurgan-Tyube.

Wheat is the main grain and food crop. In the past two years, both collective and private *dehkan* farms have noticeably increased wheat planting on irrigated areas where cotton was previously cultivated. At the same time, water is supplied to the fields no more than one or two times per season. Wheat is grown in household plots, where it is expected to partially replace barley. Wheat production covers no more than half of the country's bread demand. The missing grain is imported, mainly from Kazakhstan. Wheat in 2020 occupied 86 percent, legumes occupied 3 percent and barley occupied 7.2 percent of the total area of cereals and legumes.

Data on the production of cereals and legumes are shown in Table A4.

Sughd Region

Sughd Region occupies the northern part of the country. Its territory includes:

- Northern Tajikistan, covering the southwestern part of the Fergana Valley of the Syrdarya River. The eastern part of the valley is located on the territory of Uzbekistan. The valley is bordered by two mountain ranges stretching from east to west, Kuramin in the north and Turkestan in the south. The rich flooding soil and natural conditions of the valley are extremely suitable for the cultivation of cotton and Mediterranean crops such as grapes, apricots and peaches.

- Zarafshan Valley, crosses the southern part of Sughd Region from east to west, along the Zarafshan river bed. From the north, the valley is bordered by the Turkestan ridge, from the south by the Zarafshan. Sughd Region takes the leading place in the production of rice, tobacco and fruits. All tobacco in Tajikistan is grown in Zarafshan Valley. The main sectors of agricultural production by order of their importance are north of the region, growing cotton, cereals, livestock, gardening; Zarafshan Valley, growing tobacco, grain, animal husbandry and gardening.

Agriculture is one of the largest sectors of the economy of Sughd Region. The agricultural sector employs about 70 percent of the economically active population.

Arable farming is concentrated mainly in river valleys, where about 50 percent of the land usually requires irrigation.

Households in Sughd Region mainly grow vegetables, including tomatoes, cucumbers, eggplants and potatoes, both for their own consumption and for sale. In 2020, wheat accounted for 69 percent and barley, as a grain fodder crop, occupied 18 percent of the total area of cereals and legumes.

Table A4: Tajikistan - Production of cereals and legumes by zone

Region	Total cereals			Including wheat		
	Planted area (hectares)	Production (tonnes/hectare)	Gross collection (tonnes)	Planted area (hectares)	Production (tonnes/hectare)	Gross collection (tonnes)
Sughd	188 273	4.38	824 079	161 652	3.62	585 679
DRS	124 073	2.31	286 207	50 077	2.74	137 265
Khatlon	72 397	2.28	165 337	54 155	2.21	119 573
GBAO	4 798	1.04	5 004	2 486	1.21	2 995

Source: CFSAM, 2020.

DRS

DRS (districts of republican subordination) are districts that were previously part of Karategin Region. the districts stretch in a long strip from east to west between the Hissor and Zarafshan ridges in the north, the Vakhsh and Darvaz ridges in the south and the western spurs of the Pamir (the Academy of Sciences ridge) in the east. Mountains form a natural barrier between the low-lying Khatlon in the south and the Zarafshan and Ferghana valleys in the north (Sughd Region). The natural landscape of central Tajikistan is the most diverse, from semi-deserts with appropriate vegetation to alpine meadows and mountain pastures. From the west (Hissor) to the east (the Hissor-Alay ridge in the eastern part of Rasht), the altitude increases rapidly. Agricultural crops are grown mainly in the Hissor Valley, which stretches from Dushanbe to the Uzbek border (Tursunzade). Most of the agricultural products of the DRS, both crop and livestock, are produced in the east, in Hissor Valley, in the vicinity of Dushanbe. A significant amount of flax, grapes and vegetables are grown in Hissor Valley. Rice and cotton are also produced there, although in much smaller volumes than in Khatlon and Sughd regions. In Rasht, agriculture is confined to the long, narrow valley of the Surkhob River, flowing from east to west. To the southwest, already on the territory of Khatlon Region, Surkhob flows into the Vakhsh. The only crop grown by Rasht's households in significant quantities, both for their own consumption and for sale, is potatoes. The main sectors of agriculture are cotton growing, animal husbandry and horticulture in Hissor Valley, livestock, grain growing, potato growing and horticulture in Rasht Zone. In 2020, wheat crops occupied 75 percent of the total area of cereals and legumes.

GBAO

GBAO (Gorno-Badakhshan Autonomous Oblast) is located in the Pamir mountains, which occupy half of the country's territory in the east. The main factors limiting the development of agriculture in the oblast are the lack of suitable land and high altitudes. If in the western Pamirs, there are narrow river valleys that allow for farming at altitudes of 3 700-4 200 metres, then the climate of the eastern Pamirs is the driest and coldest in the entire territory of Tajikistan. It is a cold, high mountainous desert, without a single tree and practically without any vegetation. During the short summer season, it is only suitable for grazing on pastures with coarse grass.

After the land reform, namely since 1997, the following categories of farms are represented in the structure of the country's agricultural production in GBAO: agricultural enterprises, *dehkan* farms and household farms that appeared as a result of the land reform.

Most of the households in the districts gained access to small plots of land (0.05 hectares), usually right next to their houses. Households' plots, orchards and vegetable gardens are the "fixed assets" of the households, they play an important role in ensuring food security and they serve as a source of food and income. some of the products grown on the households' plots are sold in the local markets.

Wheat is the main grain and food crop. Wheat occupies 52 percent, legumes 34 percent and barley 27 percent of the total area of grain and leguminous crops. This year, due to a decrease in the planting area of the grain crops in the region, the area planted to potatoes and vegetables has increased.

The population plants grain crops mainly on the President's plots and vegetables, potatoes and legumes are cultivated on households' plots. Wheat production covers no more than half of the valley's grain needs.

ANNEX 5

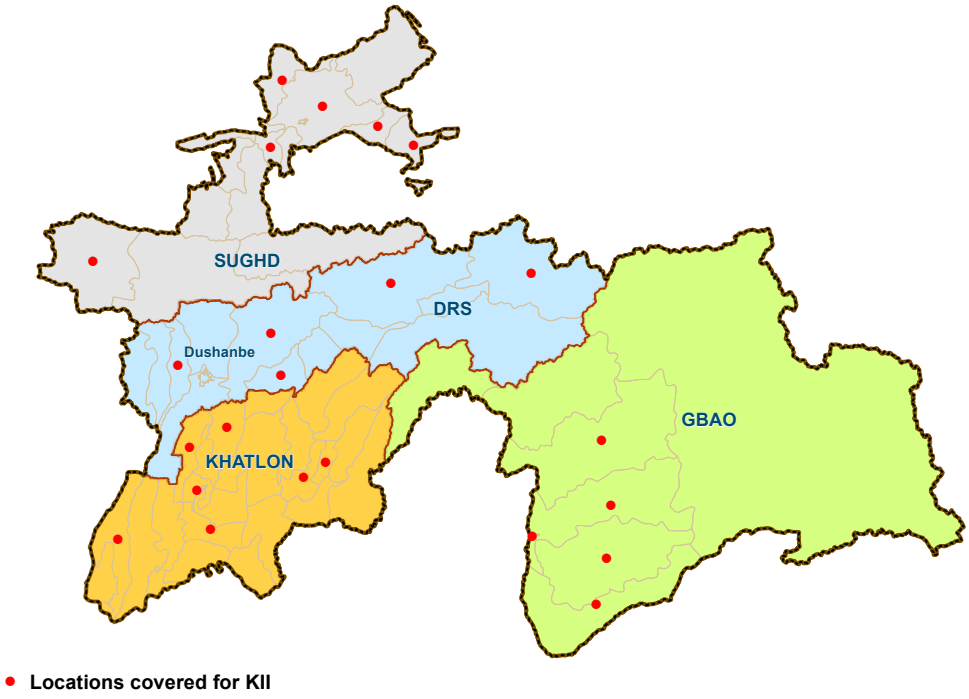
Table A5: Tajikistan - Number of administrative units visited and interviewed farmers by region (Crop assessment)

Region	Districts	*Jamoats*	Villages	First Mission	Second Mission	Total
Sughd	7	14	25	58	53	**111**
Khatlon	7	14	32	55	52	**107**
DRS	7	14	29	56	54	**110**
GBAO	5	11	17	0	44	**44**
Total	**26**	**53**	**103**	**169**	**203**	**372**

Source: CFSAM, 2020.

ANNEX 6

Map A6: Tajikistan - CFSAM qualitative assessment coverage and number of Key Informants Interviewed (KII)



Coverage: GBAO, Khatlon, DRS and Sughd

Data Collection: July 2020

Number of Key Informants Interviewed (KII):

1.	Heads of *jamoats*	7
2.	Deputy heads of *jamoats*	17
3.	Traders	33
4.	Millers	16
5.	Community specialists	10
6.	Agricultural specialists	3
7.	Heads of villages	3
8.	Farmers	2

Table A6: Tajikistan - Key Informants Interviewed (KII), by region

Region	Districts	*Jamoats*	Key informants
DRS	5	20	20
GBAO	5	12	13
Khatlon	7	43	33
Sughd	6	25	25
TOTAL			**91**

Source: CFSAM, 2020.

ANNEX 7

Table A7: Tajikistan - Key informants reached under CFSAM qualitative assessment

District	Key informant	Number of interviews
DRS		**20**
Dekhqonobod		**1**
	Traders	1
Fayzobod		**6**
	Heads of *jamoat*	1
	Millers	2
	Secretaries	1
	Traders	2
Hissor		**3**
	Deputy Heads of *jamoat*	1
	Heads of *jamoat*	1
	Traders	1
Lakhsh		**2**
	Deputy Heads of *jamoat*	1
	Traders	1
Rasht		**4**
	Deputy Heads of *jamoat*	1
	First Deputy Heads of *jamoat*	1
	Traders	2
Vahdat		**4**
	Deputy Heads of *jamoat*	1
	Heads of District Government	1
	Millers	1
	Traders	1
GBAO		**13**
Ishkoshim		2
	Deputy Heads of *jamoat*	2
Khorog		**1**
	Traders	1
Roshtqala		**3**
	Deputy Heads of *jamoat*	2
	Traders	1

District	Key informant	Number of interviews
Rushon		**3**
	Deputy Heads of *jamoat*	2
	Traders	1
Shugnan		**4**
	Deputy Heads of *jamoat*	2
	Millers	1
	Traders	1
KHATLON		**33**
Balkhi		**2**
	Millers	1
	Traders	1
Hiloli		**1**
	Agricultural Specialists	1
Khuroson		**3**
	Millers	1
	Traders	2
Kulob		**5**
	Heads of Village Organization	1
	Millers	2
	Traders	2
Kushoniyon		**4**
	Acting Heads of *jamoat*	1
	Heads of *jamoat*	1
	Traders	2
Shahritus		**5**
	Heads of *jamoat*	1
	Heads of village	1
	Millers	1
	Traders	2
Uzun		**2**
	Agricultural Specialists	1
	Statisticians	1
Vose		**5**
	Main farmers of the village	1
	Millers	2
	Traders	2

District	Key informant	Number of interviews
Yovon		**6**
	Farmers	1
	Heads of Village Organization	1
	Millers	2
	Traders	2
SUGHD		**25**
B Ghafurov		**3**
	Traders	1
	Community Specialists	2
Ghonchi		**4**
	Agricultural Specialists	1
	Representatives of *jamoat*	1
	Millers	1
	Traders	1
Isfara		**5**
	Community and Statistics Specialists	2
	Millers	1
	Traders	2
Konibodom		**3**
	Community Specialists	1
	Secretaries	1
	Traders	1
Mastchoh		**3**
	Community Specialists	1
	Representatives of *jamoat*	1
	Traders	1
Panjakent		**4**
	Community Gender Specialists	1
	Heads of *jamoat*	1
	Millers	1
	Traders	1
Spitamen		**3**
	Community Specialists	2
	Traders	1
TOTAL		**91**

Source: CFSAM, 2020.

ANNEX 8

Map A8: Tajikistan - Food basket inflation by region, 2019-2020

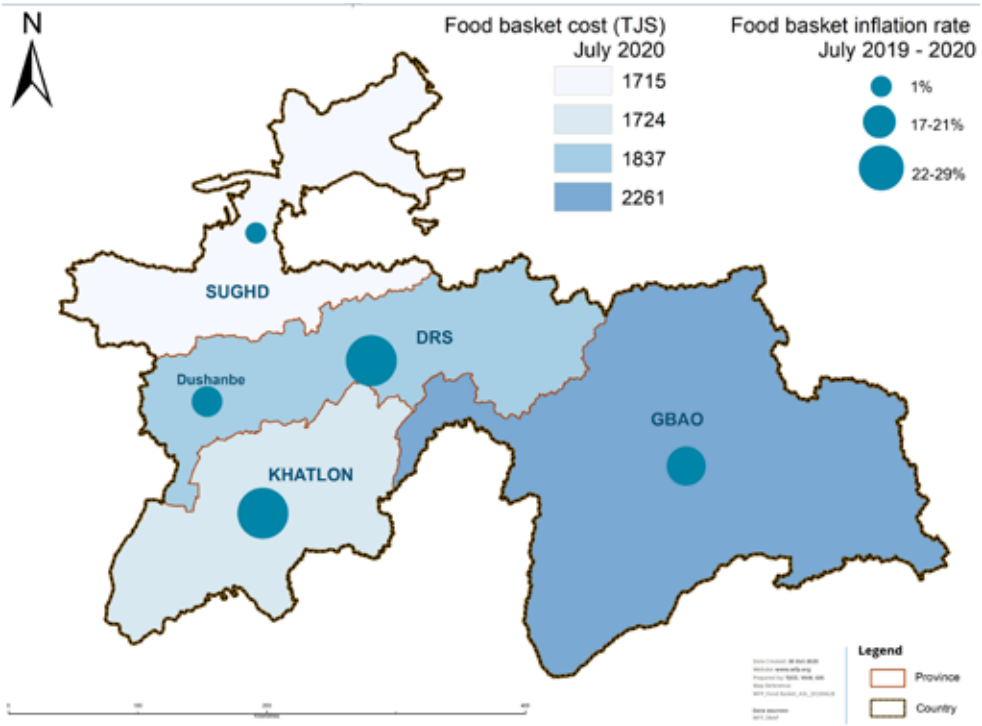


Table A8: Tajikistan - Food basket commodities

Rice	**Mutton**	**Cabbage**
Bread	**Beef**	**Peas (green, dry)**
Wheat flour (first grade)	**Chicken (frozen)**	**Beans (haricot)**
Milk	**Potatoes**	**Vegetable oil**
Eggs	**Carrots**	**Salt**
Tea (green)	**Onions**	**Sugar**

Source: CFSAM, 2020.

ANNEX 9

Table A9: Tajikistan - Food security situation survey, households' sample disaggregated by age and sex

Age group	Male		Female		Total by age	
	August	September	August	September	August	September
up to 18 years	0	4	0	4	8	0
18-30 years	45	44	42	46	90	87
30-50 years	102	106	101	102	208	203
50-70 years	53	50	57	51	101	110
70 years and older	4	5	1	1	6	5
Total	**204**	**209**	**201**	**204**	**413**	**405**

Source: CFSAM, 2020.

ANNEX 10

Use of remote sensing data

The use of remote sensing data for the selection of potential areas in GBAO for CFSAM visits.

The following images show NDVI differences between 2020 and 2019 obtained with Sentinel-2 high resolution data with the use of Google Earth Engine application.

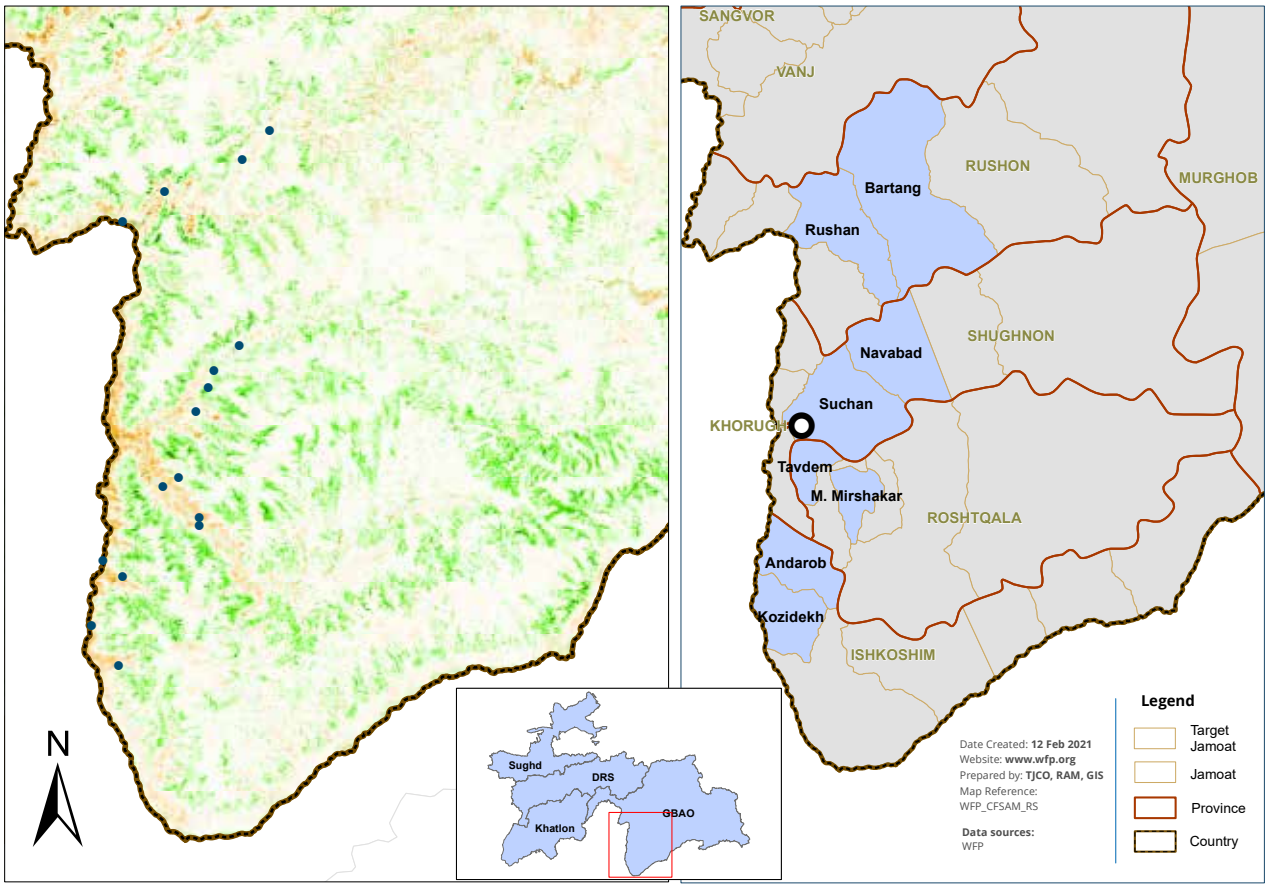
The map compares the vegetation level in June 2020 to the same period in June 2019 for the whole country as well as a zoom-in to western areas of GBAO:

- For the whole country, we mostly see a picture of higher vegetation levels (green) in June 2020 compared to June 2019. This is also true in GBAO. In the highlands, this is attributed to earlier snowmelt and higher temperatures favouring vegetation growth. In principle, this will also translate into enhanced pasture resources.

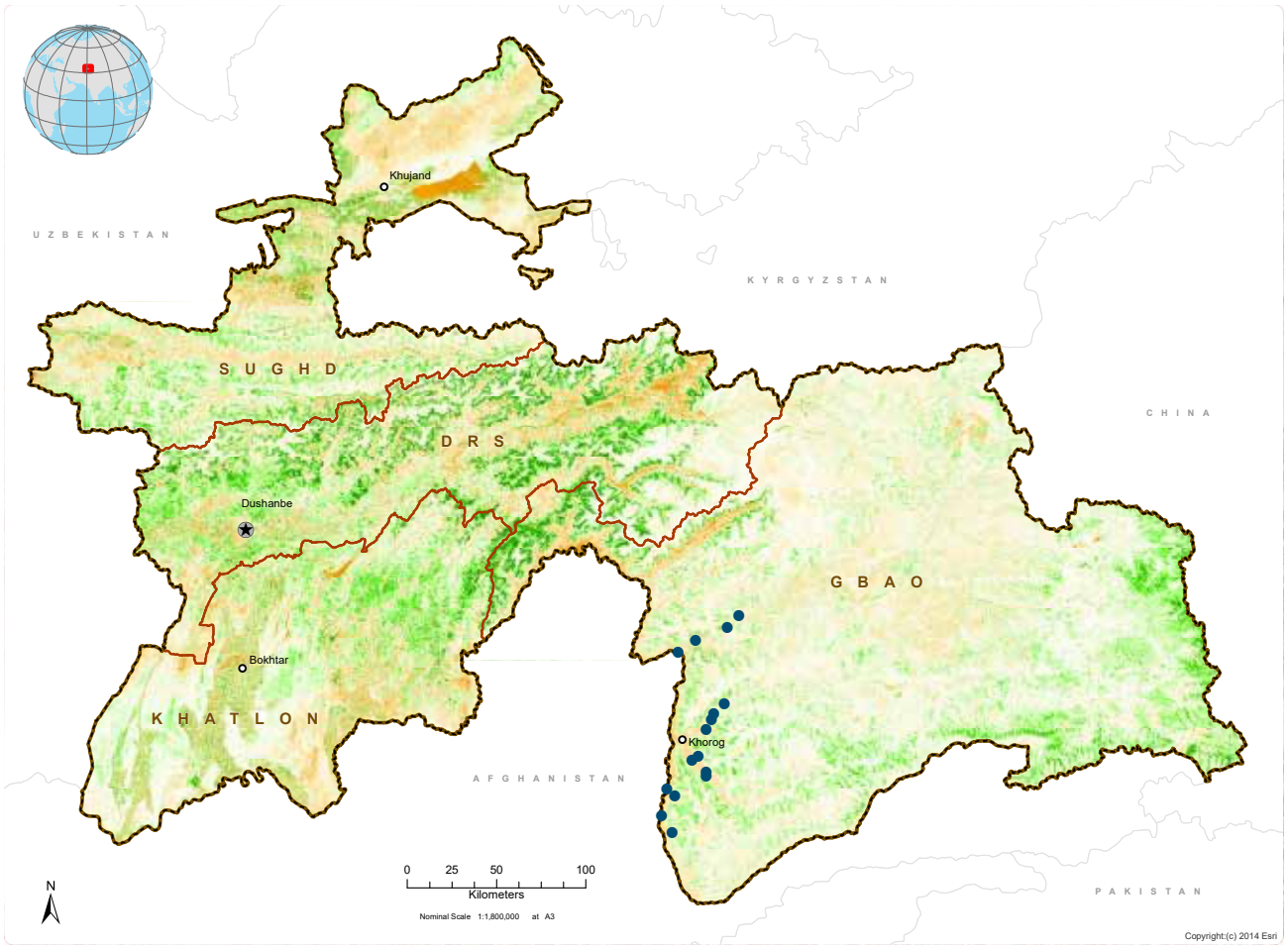
- Though sparsely distributed, the orange tones depict areas of reduced vegetation cover. These areas become especially clear when the map scale is increased to district/*jamoat* levels.

Focusing on the four districts (Shugnan, Rushan, Ishkashim and Roshtqala), two *jamoats* were selected for each district. Additionally, two villages for each *jamoat* were been identified and selected for further deliberations. The selected villages were all found within areas or reduced vegetation performance. Ease of access was also factored into villages selection and GPS coordinates provided.

Map A10a: Tajikistan - NDVI differences between 2020 and 2019 obtained with Sentinel-2 high resolution data with the use of Google Earth Engine application



Map A10b: Tajikistan - NDVI differences between 2020 and 2019 obtained with Sentinel-2 high resolution data with the use of Google Earth Engine application



Source: CFSAM, 2020.

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