

Foreign Agricultural Service Global Market Analysis International Production Assessment Division Web: <u>https://ipad.fas.usda.gov</u>

September 17, 2020

Commodity Intelligence Report

Turkey MY2020/2021 near-record wheat yield

USDA estimates Turkey wheat production for MY 2020/21 at 18.5 million metric tons (mmt), up 1 mmt or 6 percent from last year. The area is estimated at 7.1 million hectares (mha), up 0.1 mha or 1 percent from last year. The yield estimate of 2.61 tons per hectare is at a near-record level (Figure 1).

General Overview

Turkey is one of the leading wheat-producing countries. It is currently ranked 11th in the world with an estimated 18.5 mmt of production for MY 2020/2021 (Figure 2). Winter wheat is grown mostly in the Central Anatolian plateau and in Southeast Anatolia, followed by Thrace (the European portion of Turkey, part of the Marmara region) and Çukurova (part of the Mediterranean region). The top two regions, Central Anatolia and Southeast Anatolia, contribute about 50 percent to total wheat production and harvested area in Turkey (Figure 3). Crops are planted in October through November and are typically harvested in July with some harvesting occurring in August. Wheat yields show high temporal and spatial variability. Crop development and yield potential are highly susceptible to precipitation during the months of April through June. Precipitation amounts over Southeast Anatolia are generally higher and somewhat more favorable compared to the precipitation conditions over Central Anatolia (Figure 4).

Weather and vegetation conditions during the 2019/2020 growing season (MY2020/21)

Generally, drought during the early growing season is not expected to have a major impact on the winter wheat growth as plant development normally depends more on spring weather. Specifically, winter grains (i.e., wheat and barley) are highly susceptible to the amount of available soil moisture during the months of April and May when crops reach flowering.

Early on during the 2019/2020 growing season, precipitation was substantially lower than average over most of the country (Figure 5). Precipitation in October 2019 over Central Anatolia and Southeast Anatolia was 47 percent and 20 percent, respectively below average, and 56 percent and 58 percent lower than last year, (based on CHIRPS data). USDA's Agricultural Affairs Office in Turkey reported in an April 2020 <u>GAIN</u> report (Grain and Feed Annual) that average country-wide rainfall was 291.8 millimeters for the October 2019 to February 2020 time period, which was the lowest compared to the same period during the last three years. In some parts of Central Anatolia, the dry

weather negatively affected the sowing activities resulting in the need for some replanting in the region. The impact of low soil moisture conditions due to the winter drought was still evident in the vegetation conditions over Central Anatolia in early spring (Figure 6, plot [A]).

By mid- to late-winter, wet weather expanded over the entire region and continued into the spring. Precipitation and temperature conditions during late-winter and the spring months were favorable and provided sufficient rainfall for plant emergence and proper early-stage crop development. An abundance of soil moisture and favorable temperatures during the April to May period allowed crops to reach flowering on time in Southeast Anatolia by mid-April and slightly later (early-May) in the cooler northern region of the Central Anatolian plateau. Therefore, despite dryness concerns during autumn/early-winter, the spring wet to very wet conditions boosted yield prospects for winter wheat.

Late-season heat in some regions, including Central Anatolia, raised concerns for wheat and barley yields and grain quality. In mid-May, temperatures spiked to over 40°C in the Aegean region and reached over 35°C in the Anatolian plateau. Heat developed later in the growing season which could have adversely impacted yields. However, at that time, winter crops were at filling or past the filling stage, which prevented widespread heatrelated damage. By late-May temperatures declined and were followed by prevalent, but highly variable showers in early-June resulting in overall excellent crop conditions throughout Turkey (Figure 6, plot [B]). Warmth and dryness during the second half of June and July aided the on-time harvest of winter wheat in Turkey.

The Normalized Difference Vegetation Index (NDVI) data shown in Figure 7 demonstrates that crop development was above average for most of the season over the two major wheat producing regions in Turkey, Central Anatolia and Southeast Anatolia. In addition, this season's NDVI exceeded last year's, which aligns with better yield prospects for MY 2020/21.



Figure 1. Long-term variability in Turkey wheat yield. Source: USDA PS&D



Figure 2. Wheat, percent of world production. Source: USDA PS&D



Figure 3. Turkey percent of total wheat production by agricultural region. Source: USDA-FAS Turkey



Figure 4. Average annual precipitation over Turkey. Source: WorldClim Project



Figure 5. The spatial map shows monthly precipitation anomalies for the month of October 2019 derived using CHIRPS. Pink/red and blue colors indicate below and above average conditions, respectively. The two time series graphs demonstrate the monthly precipitation variability for the two major wheat producing regions, Central Anatolia and the Southeast Anatolia for the last three wheat growing seasons (i.e. 2017/18, 2018/19 and 2019/20). Source: University of California, Sana Barbara



Figure 6. Spatial variability in Percent Average Seasonal Greenness (PASG) over Turkey in early spring and summer of 2020. [A] The below-average autumn/winter precipitation was evident in the vegetation conditions over Central Anatolia. [B] Vegetation conditions had recovered by early summer. Source: NASA-USDA

Figure 7. Normalized Vegetation Difference Index (NDVI) time series observations derived using MODIS Terra data for the current and previous year over the two major wheat producing areas in Turkey, Central Anatolia and Southeast Anatolia. Source: NASA-USDA

Author contact information:

lliana Mladenova iliana.mladenova@usda.gov

For more information and to access FAS databases and reports please visit:

Current World Agricultural Production Reports <u>https://www.fas.usda.gov/data/world-agricultural-production</u>

Production, Supply and Distribution Database (PSD Online) https://apps.fas.usda.gov/psdonline/app/index.html#/app/home

Global Agricultural Information Network (Agricultural Attaché Reports) https://www.fas.usda.gov/databases/global-agricultural-information-network-gain

Crop Explorer https://ipad.fas.usda.gov/cropexplorer/

Global Agricultural Monitoring System (GLAM) <u>https://glam1.gsfc.nasa.gov/</u>

Global Agricultural and Disaster Assessment System (GADAS) <u>https://geo.fas.usda.gov/GADAS/index.html</u>