United States Department of Agriculture

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

September 17, 2021

Commodity Intelligence Report

Mexico Wheat 2021/22: Harvested Area Below 5-Year Average Due to Low Water Availability

USDA estimates Mexico's marketing year 2021/22 wheat production at 3,100,000 metric tons (MT), up about 5 percent from last year's production. Though area has decreased slightly from last year, it is about 10 percent below the 5 year-average at an estimated 555,000 hectares (ha). The yield estimate is up about 5 percent from last year at 5.59 tons per hectare (t/ha) **(see Figure 1).**

With most of the crop being irrigated, approximately 95 percent of wheat in Mexico is planted in the winter from October through December and harvested from April through June. The remaining wheat is mostly rainfed and is planted in the spring from April through July and harvested in September through December. Sonora is the biggest producer during the winter cycle for wheat, followed by Guanajuato, Baja California, Michoacán, and Sinaloa. The largest producer for the spring wheat cycle is Tlaxcala **(see Figure 2).**

Winter weather was both harmful and beneficial for the wheat planted during this cycle. Farmers were discouraged from planting wheat in various parts of Sonora due to drought conditions throughout 2020. Although Mexico's wheat crop is mostly irrigated, precipitation before the season begins and temperatures and rainfall during the season have a large impact on area and yield. Below average precipitation in Sonora, during the rainy season from June to October 2020, resulted in low water availability overall for irrigation, especially in the Mayo Valley **(see Figure 3).** According to *Comisión Nacional del Agua* (CONAGUA), reservoir levels in the Adolfo Ruíz Cortínes dam in the Mayo Valley were below 30 percent at the end of December 2020, which decreased wheat planting intentions **(see Figure 4).** Furthermore, during the winter, wheat planting was delayed in Sonora due to below-average rainfall in December 2020. However, dams in the Yaqui Valley had sufficient water levels to support wheat plantings at the end of December 2020, according to data from CONAGUA.

In Nuevo León, frost damage to wheat occurred from the winter storms in mid-February 2021 **(see Figure 5)**. The Mexican government's *Servicio de Información Agroalimentaria y Pesquera* (SIAP) reported 5,101 ha of damaged area in Nuevo León as of August 31, 2021, which was about 74 percent of the planted area in the state.

However, as December 2020 ended, cool temperatures in Sonora delayed crop development and increased biomass prior to wheat flowering. This resulted in high wheat yields in Sonora **(see Figure 6).** In addition, average to above-average rainfall in mid-

January 2021 throughout major wheat producing areas in Sonora, Baja California, and Sinaloa helped to relive early season drought conditions **(see Figure 7).**

In major wheat producing areas in Sonora specifically, the satellite-derived Normalized Difference Vegetation Index (NDVI) depicted above-average vegetation conditions at the beginning of April 2021, after a slow start earlier in the season **(see Figures 8 and 9).** According to data from SIAP, wheat yields in Sonora as of August 31, 2021 were the highest in the country at 7.28 t/ha.

Harvest of the winter cycle wheat crop is over 98 percent complete. SIAP reported that 480,401 ha of the 486,830 ha wheat planted in the winter have been harvested with a production of 3,143,441 MT as of August 31, 2021. In the state of Sonora, SIAP has reported a production of 1,721,608 MT based on a harvested area of 236,467 ha for the winter planted wheat, slightly higher than last year but about 21,530 ha lower than the 5-year average. As of August 31, 2021, wheat production in Michoacán for this season is the highest compared to the most recent years at 245,082 MT **(see Figure 10).**

For wheat planted in the spring, SIAP is reporting 65,679 ha planted so far as of August 31, 2021, currently about 6,000 ha lower than last year during this time. Tlaxcala leads the planted area for this wheat cycle with 19,746 ha planted. Weather conditions have been favorable in Tlaxcala as cumulative rainfall has been above-average as of August 2021 to support crop development **(see Figure 11).**

Overall, though the early season drought and limited water availability led to decreased planted wheat area in the winter season, favorable weather conditions during the mid-late season helped to boost crop yields and increase production.

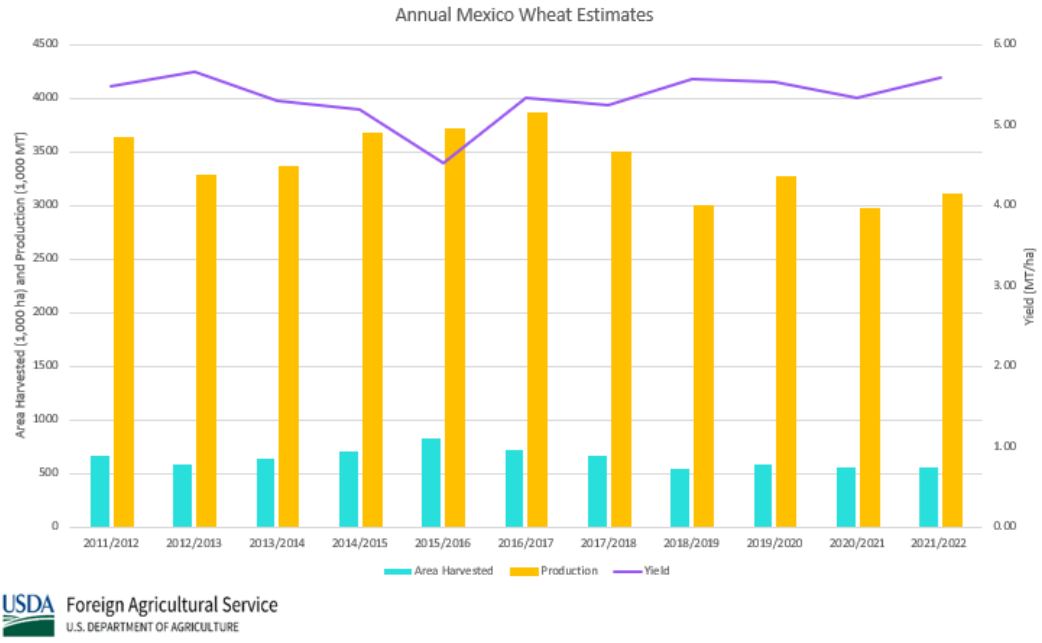

Figure 1. Annual Mexico Wheat Area, Yield, and Production Estimates from 2011-2021. Source: USDA PSD Online.

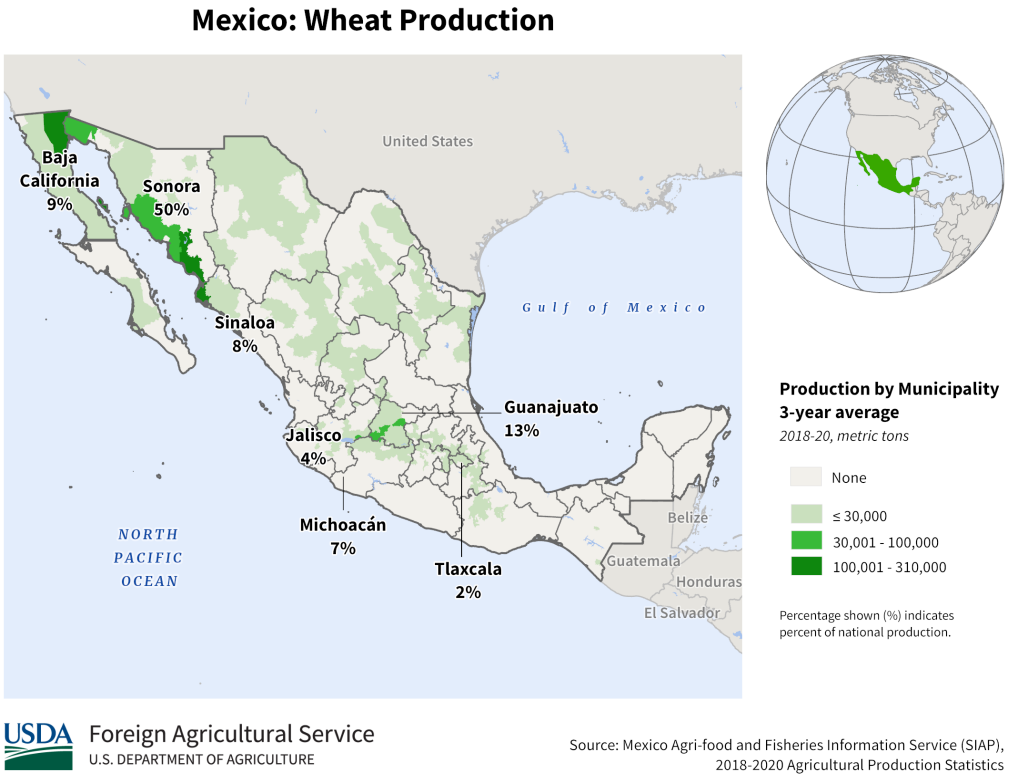

Figure 2. Map of Average Mexico Wheat Production, 2018-2020. Source: SIAP.

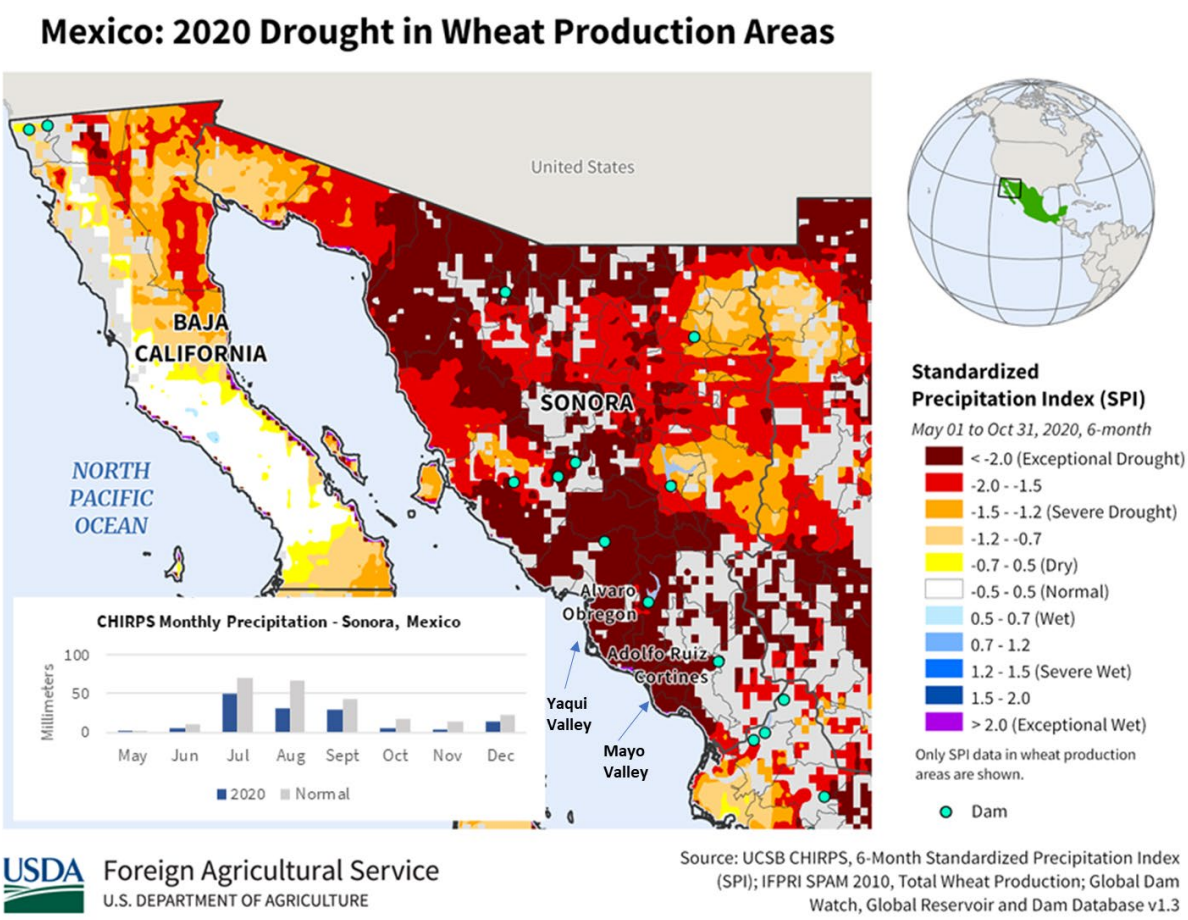

Figure 3. Drought Conditions During 6 months (May 2020 – October 2020) in Mayo Valley and Yaqui Valley in Sonora for Supplementing Water Levels for Wheat Irrigation. Bar Chart of Total Monthly Rainfall for May – December 2020 in Sonora. Source: UC Santa Barbara Climate Research Group

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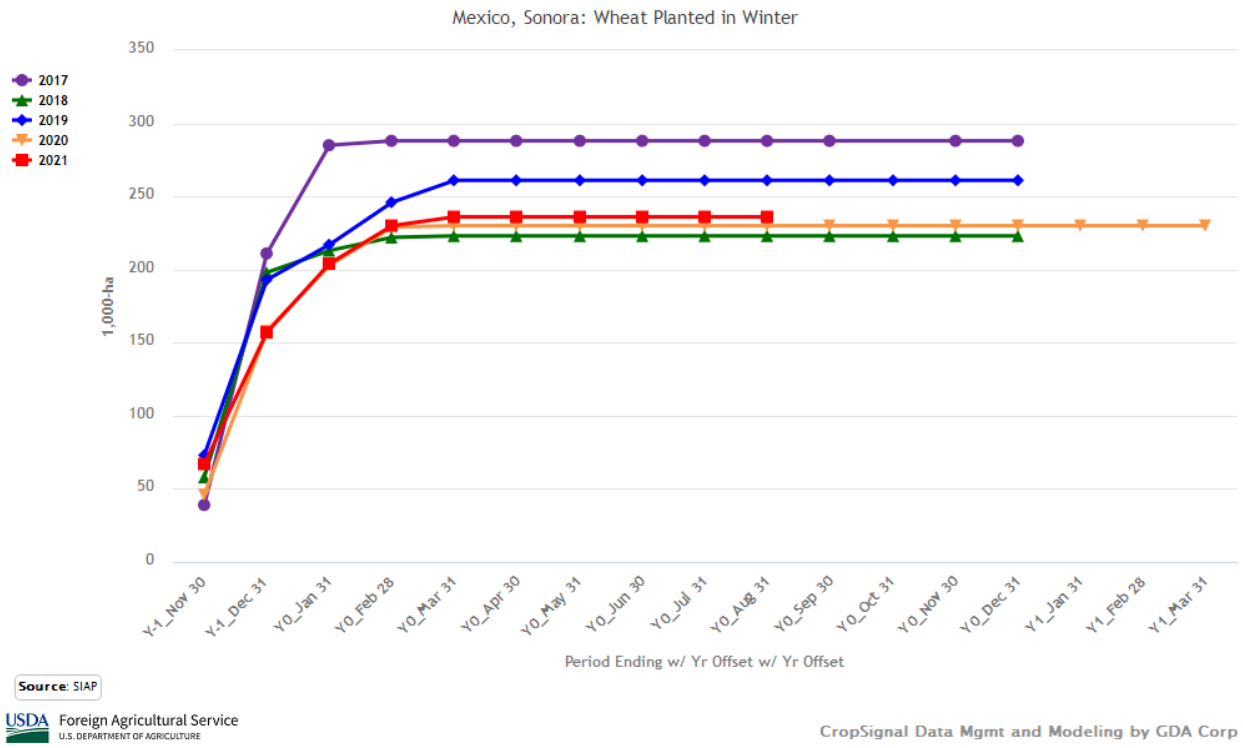

Figure 4. Area for Wheat Planted in Winter in Sonora for 2017-2021. Source: SIAP.

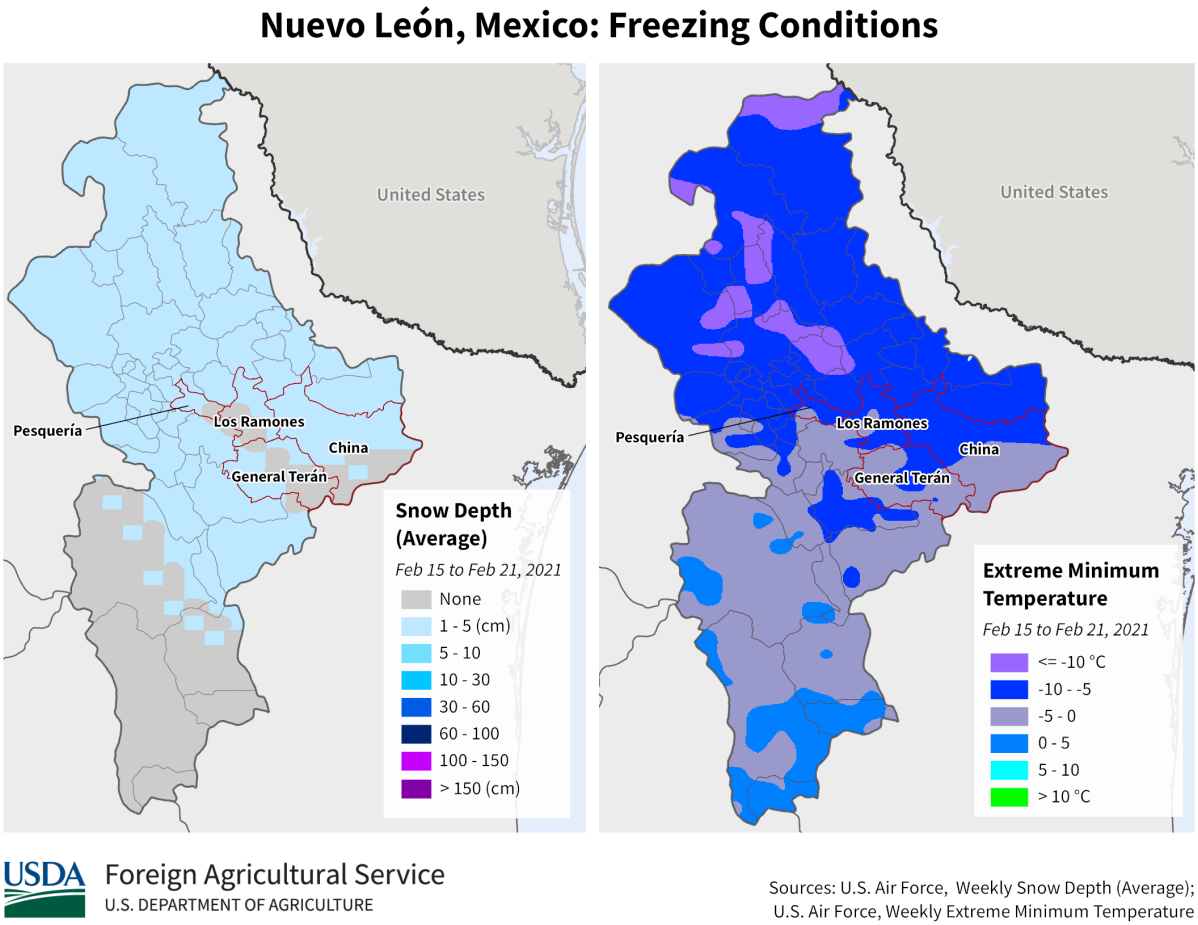

Figure 5. Frost Damage in Nuevo León with Major Damaged Wheat Areas Labelled. Snow Depth Average – February 15 – 21, 2021. Extreme Minimum Temperature – February 15 – 21, 2021. Source: U.S. Air Force.

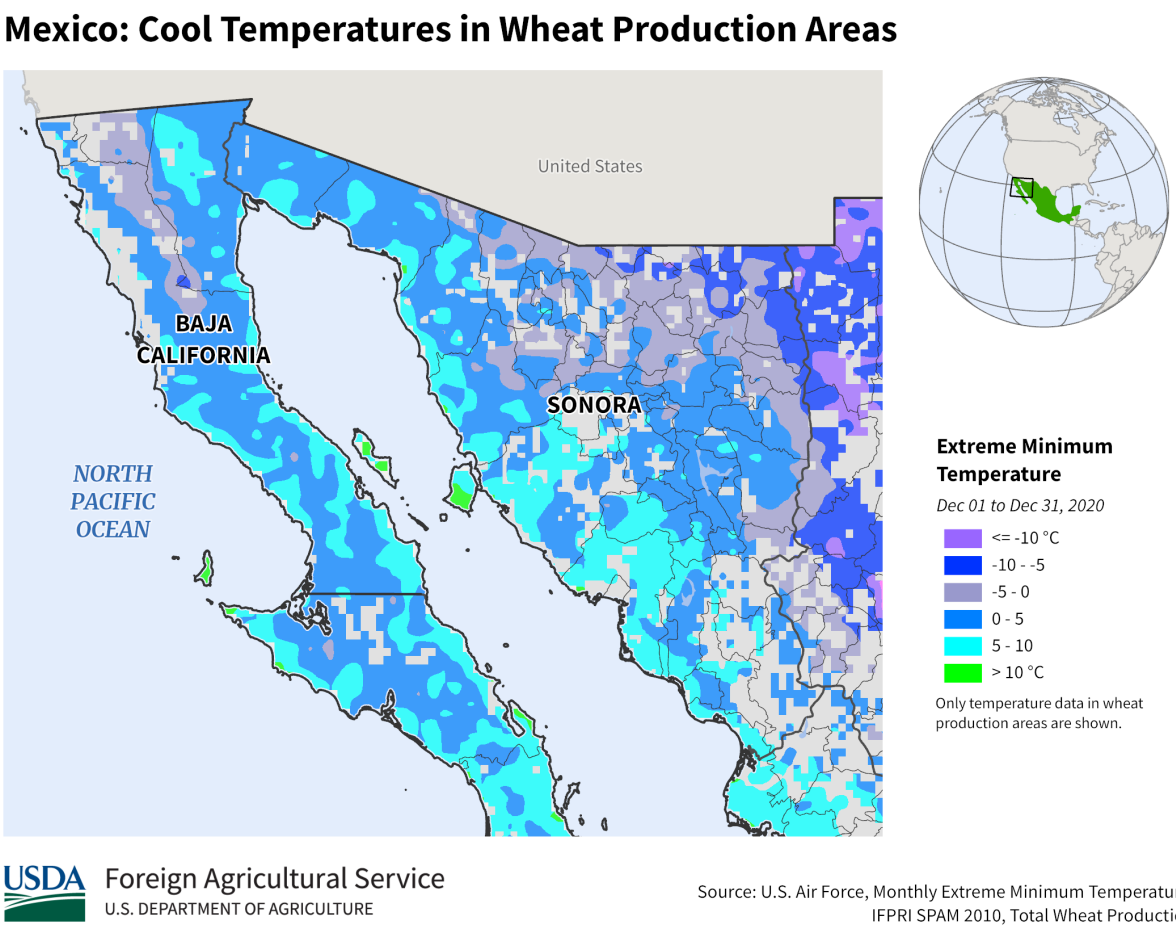

Figure 6. Cool Temperatures in Sonora in December 2020 Supported Higher Yields. Map of Extreme Minimum Temperature in Major Wheat Areas in December 2020. Souce: U.S. Air Force.

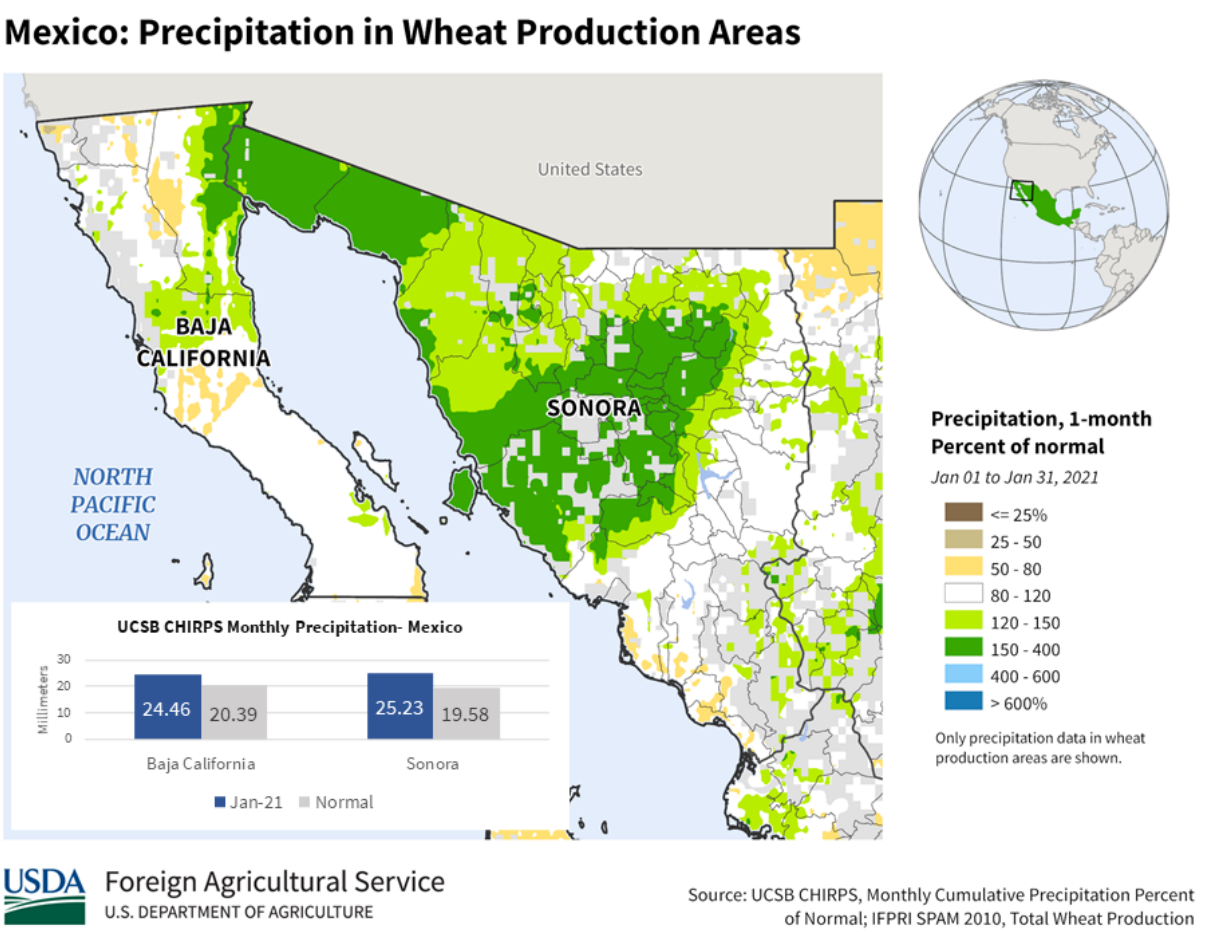

Figure 7. Mid-January 2021 Rains Relieved Dry Conditions in Wheat in Sonora and Baja California, and Sinaola. Map of Percent Normal Precipitation for Month of January 2021. Bar Chart of Monthly Precipitation in Baja California and Sonora. Source: UC Santa Barbara Climate Research Group.

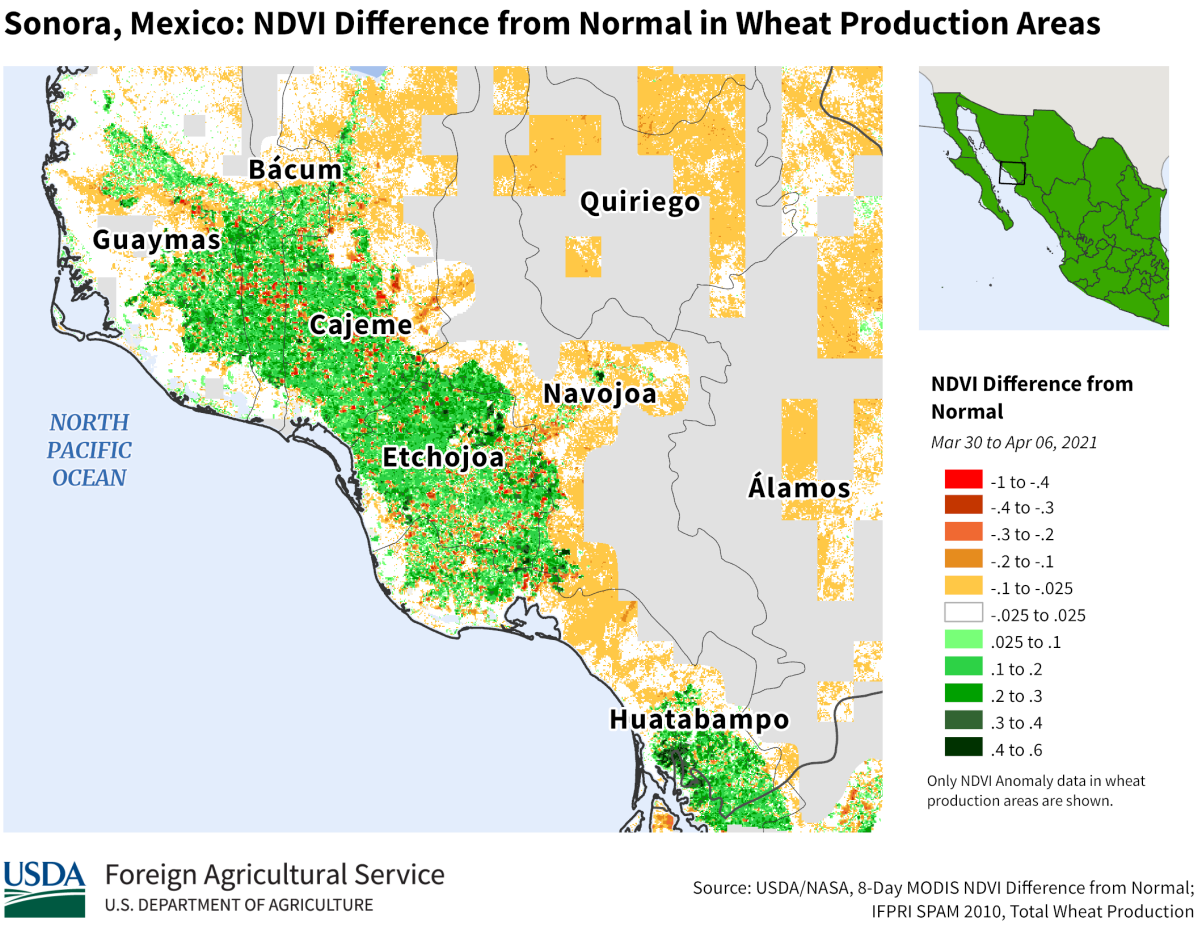

Figure 8. NDVI Map Depicting Vegetation Conditions of Wheat Area in southern Sonora, Mexico during Week of March 30 – April 6, 2021. Source: USDA/NASA NDVI Anomaly, Global Agricultural Monitoring (GLAM) System.

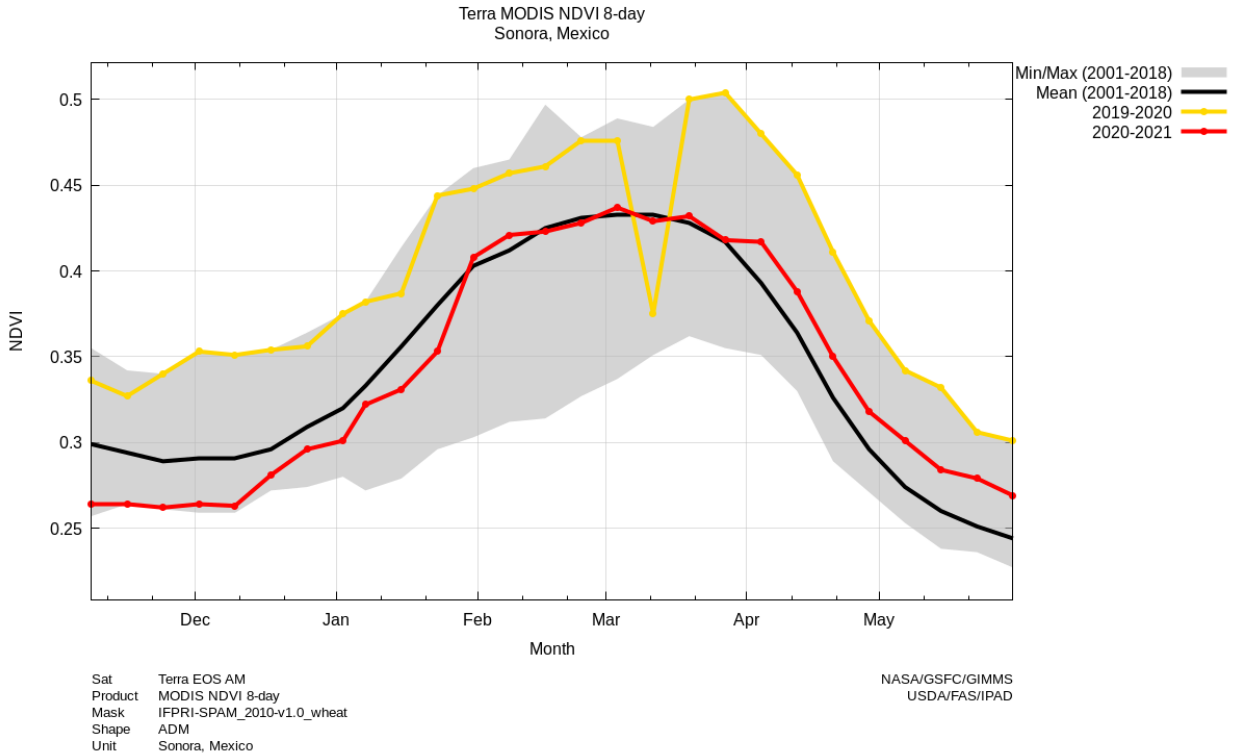

Figure 9. NDVI Chart of Wheat Growing Areas in Sonora, Mexico comparing 2019-2020 and 2020-2021 Conditions to Average Conditions. Source: USDA/NASA GLAM, MODIS 8-day NDVI.

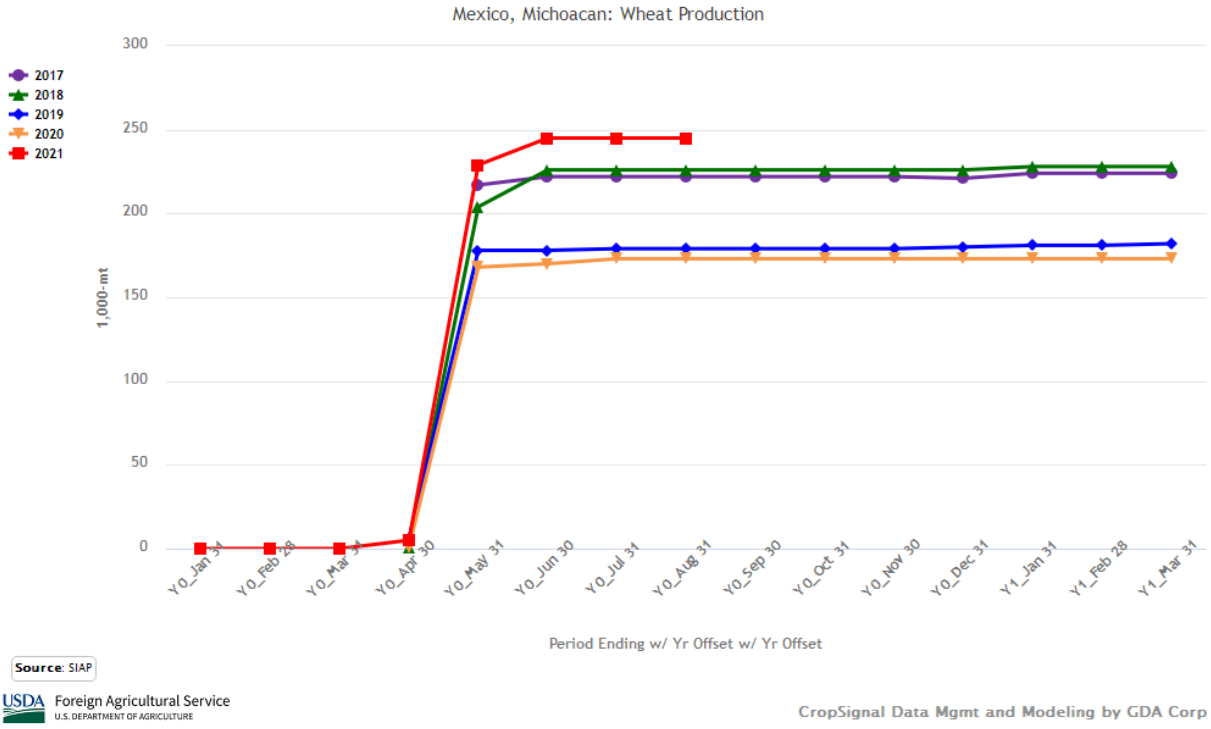

Figure 10. Annual Wheat Production in Michoacán for 2017-2021. Source: SIAP.

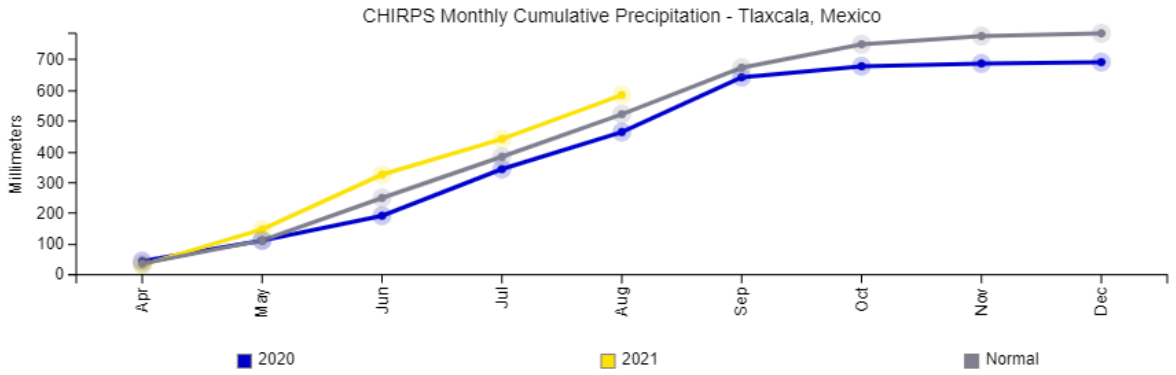

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Figure 11. Line Chart of Cumulative Rainfall Conditions in Tlaxcala during Summer 2020 and 2021 Compared to Normal. Source: UC Santa Barbara Climate Research Group.

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