

Commodity Intelligence Report

April 15, 2020

Bumper Corn Harvest Expected for South Africa

South Africa's 2019/20 corn production is forecasted at 16.0 million metric tons (mmt), up 4.2 mmt from last year and down 1.6 mmt from the 2016/17 record crop. Corn yield is forecasted at 5.3 metric tons per hectare (t/ha), up 17 percent from the 5-year average and down 9 percent from the 2016/17 record yield of 5.9 t/ha. This year's favorable corn yield forecast is due to the corn belt receiving average to above-average rains from December through March. These abundant rains also occurred during the critically important pollination and grain-filling crop stages which helped to boost yields for several major corn-producing districts in the west. Seasonal rainfall in the west was also ranked as the wettest 3-month growing period since 1981 and crop yields in some western districts are expected to exceed record levels (Figures 1-2).

Corn is planted in South Africa from October through early January with the actual planting date dependent on when rains arrive. Optimal corn planting in the east ranges from October 1 through November 30, while optimal planting in the west is from November 20 through December 31. Planting in the west may also be extended to mid-January if seasonal rains arrive late (Figure 3).

South Africa experienced a severe drought from October through mid-November 2019 and the early season drought delayed planting in the east. Abundant rains later arrived in late November which enabled farmers to plant through December and crop conditions recovered by the end of January 2020. The planted commercial corn area reported in late January by South Africa's Crop Estimates Committee (CEC) from the Department Agriculture, Forest and Fisheries (DAFF) is 2.6 million hectares (mha), up 16,000 hectares from October's planting intentions and the highest commercial corn area since 2016/17. USDA's harvested area forecast for both the commercial and developing sectors is 3.0 mha, up 0.4 mha from last year's reduced area caused by a severe drought.

Current crop conditions are excellent for all major corn-producing provinces and harvest of the rainfed crop will begin in late April. Satellite-derived Normalized Difference Vegetation Index (NDVI) values indicate above-average crop conditions for all provinces. The 2019/20 NDVI time series graph clearly illustrate how corn can fully recover from early-season droughts if adequate rainfall is received during the critically important pollination and grain-filling stages (Figure 4).

Monthly white and yellow corn production estimates are published from February through November by South Africa's CEC-DAFF. The latest production report from CEC-DAFF (March 25) estimated that South Africa will produce about 42 percent yellow corn and 58 percent white corn in 2019/20. Province production and yield estimates by CEC-DAFF indicate above-average yields for all provinces and all province yield estimates for 2019/20 are below 2016/17 record yields (Figure 5). Yields for yellow corn are estimated to exceed white corn by more than one ton per hectare, because white corn is mainly grown in dry western regions with lower yields while yellow corn is primarily grown in wet eastern regions with higher yields (Figures 6-8). White corn is primarily used for human consumption, while yellow corn is mostly used for animal feed production.

Commodity Intelligence Report

April 15, 2020

Annual reports titled “Trends in the Agricultural Sector” from DAFF summarize irrigated corn area for white and yellow corn. Total irrigated corn area was highest in 2016/17, when record output and yields were achieved. On average (2015-2019), South Africa plants more white corn area (1.34 mha) than yellow corn area (1.04 mha) and irrigates more yellow corn area (149,000 ha) than white corn area (86,000 ha). Also, irrigated white corn area is approximately 6.5 percent of white corn area and irrigated yellow corn area is about 14.5 percent of yellow corn area (Figure 9).

The Northern Cape province, where average annual rainfall is less than 400-mm per year, has the highest corn yields because corn area is 100 percent irrigated. Yields in Northern Cape have been remarkably greater than 14 t/ha for the past four years (Figure 5). Districts with corn yields greater than 10 t/ha are easily identified as districts where irrigated corn area exceeds dryland area (Figure 10). In summary, trend yields for irrigated corn in South Africa continues to increase due to improved seed genetics and hybrid seeds being produced in-country by major international seed companies. Pannar Seed, a DuPont-Pioneer partner, reported in 2018 that irrigated yields in South Africa are greater than 20 t/ha when ultra-early hybrids with high plant populations are planted (Pannar seed catalogue, 2018).

North West province has the lowest corn yields due to low annual precipitation (< 600-mm/year), low plant populations (24,000 plants per hectare) and wider row spacings (2.3 meters maximum) (Figures 6-8). Farmers in North West province also plant more white corn with multi-ear hybrids than yellow corn. White corn is primarily grown in dry western regions and the North West and Free State provinces account for about 75 percent of South Africa’s white corn production (Figure 8).

In summary, South Africa’s corn yield forecast for both the developing and commercial sector is 5.3 t/ha; the second highest yield on record and the second time for national yields to exceed 5 t/ha (Figure 2). Corn yields for all provinces have record yields exceeding 5.0 t/ha except for North West province where the record corn yield is 4.9 t/ha (Figure 5). Final 2019/20 production estimates from CEC-DAFF will be released in early 2021, after all harvested corn is delivered to the silos from March through December 2020. Harvest of irrigated crops begins in late March, while harvest of rainfed crops begins in late April and continues through August (Figure 11).

Current area and production estimates for grains and other agricultural commodities are available from:

[Production, Supply and Distribution Database \(PSD Online\)](#)

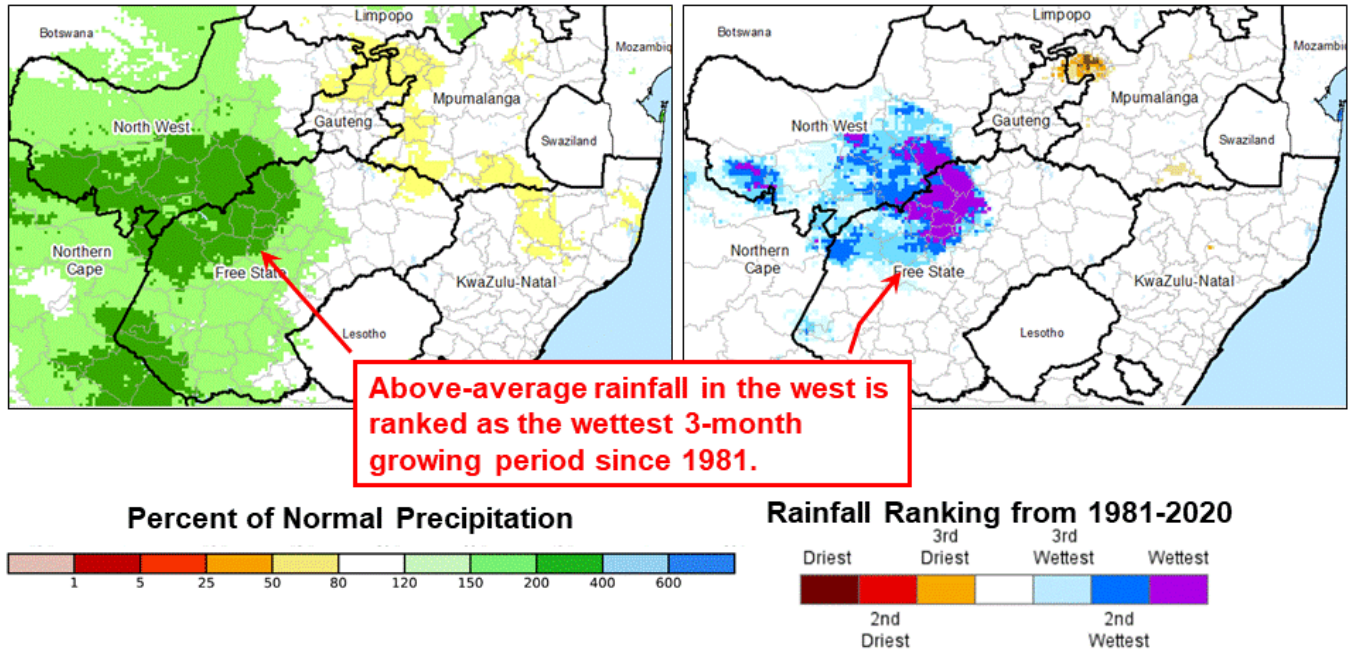
[International Production Assessment Division \(IPAD\) Home - USDA/FAS/OGA](#)

For additional information, please contact Curt Reynolds at Curt.Reynolds@usda.gov

U.S. Department of Agriculture
Foreign Agricultural Service; Global Market Analysis
International Production Assessment Division
USDA South Building, Ag Box 1051
Washington, DC 20250-1051

Percent of Normal Precipitation (Dec. 21, 2019-Mar. 20, 2020)

Rainfall Ranking from 1981-2020 (Dec. 21, 2019-Mar. 20, 2020)



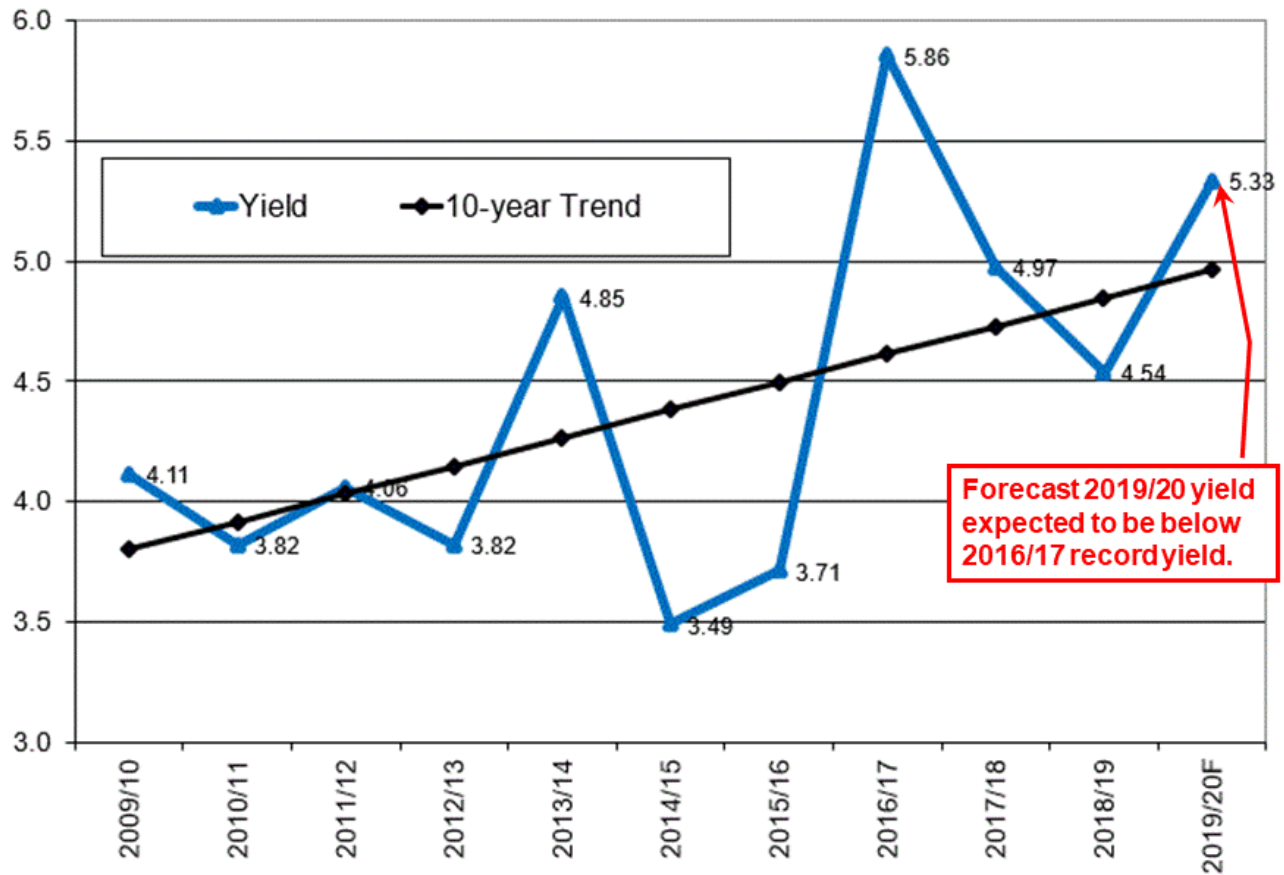
Foreign Agricultural Service
Global Market Analysis
International Production Assessment Division

Source: CHIRPS Percent of Normal Precipitation and Rainfall Rankings from University of California-Santa Barbara.

Figure 1. Percent of Normal Precipitation and Rainfall Ranking from Dec. 21, 2019 – Mar. 20, 2020



South Africa Corn Yields



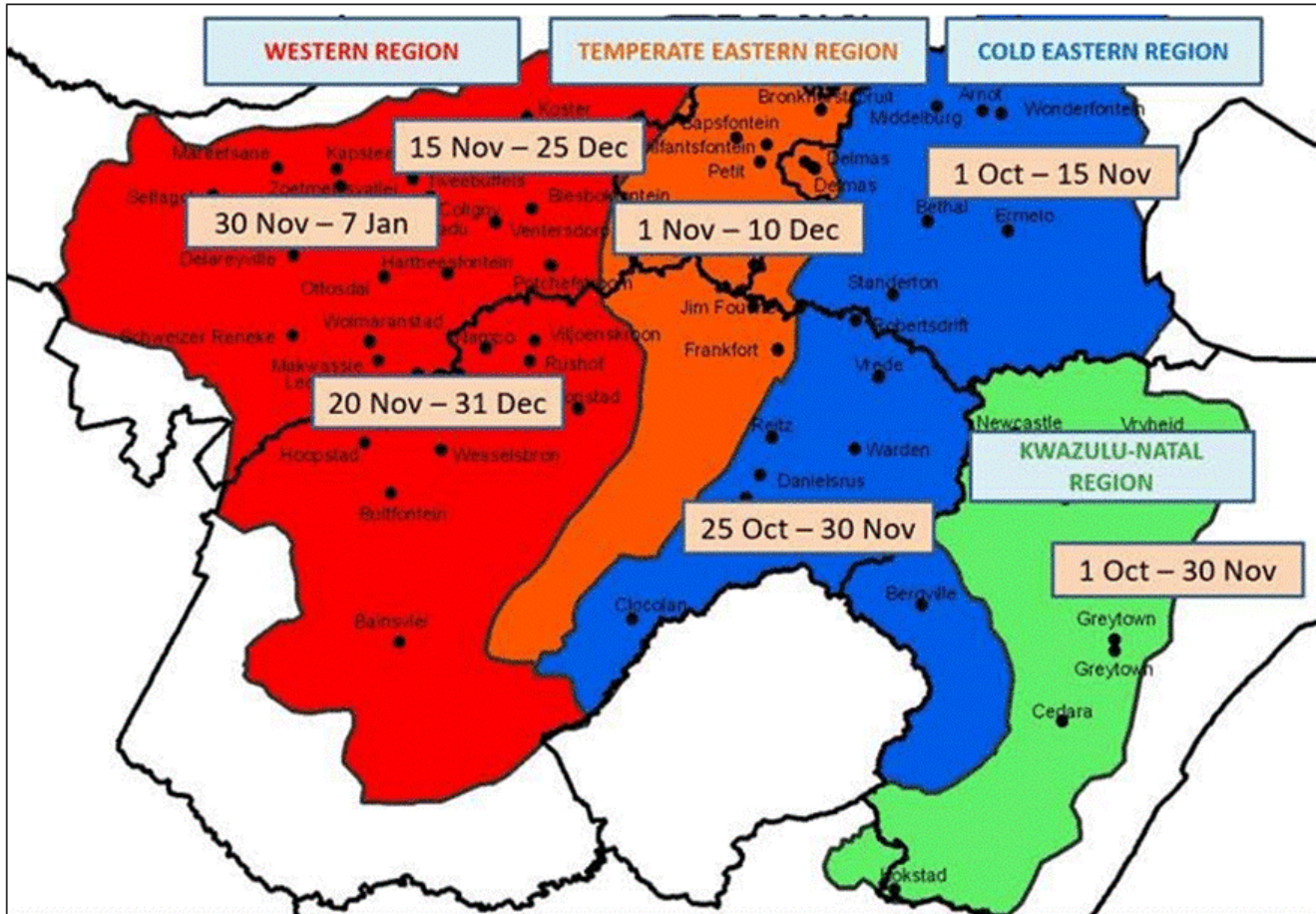
Forecast 2019/20 yield expected to be below 2016/17 record yield.



Source: USDA/FAS PSD Online: <https://apps.fas.usda.gov/psdonline/app/index.html>

Figure 2. South Africa Corn Yields (Commercial and Developing Sectors) from 2009/10-2019/20

Optimal Corn Planting Dates

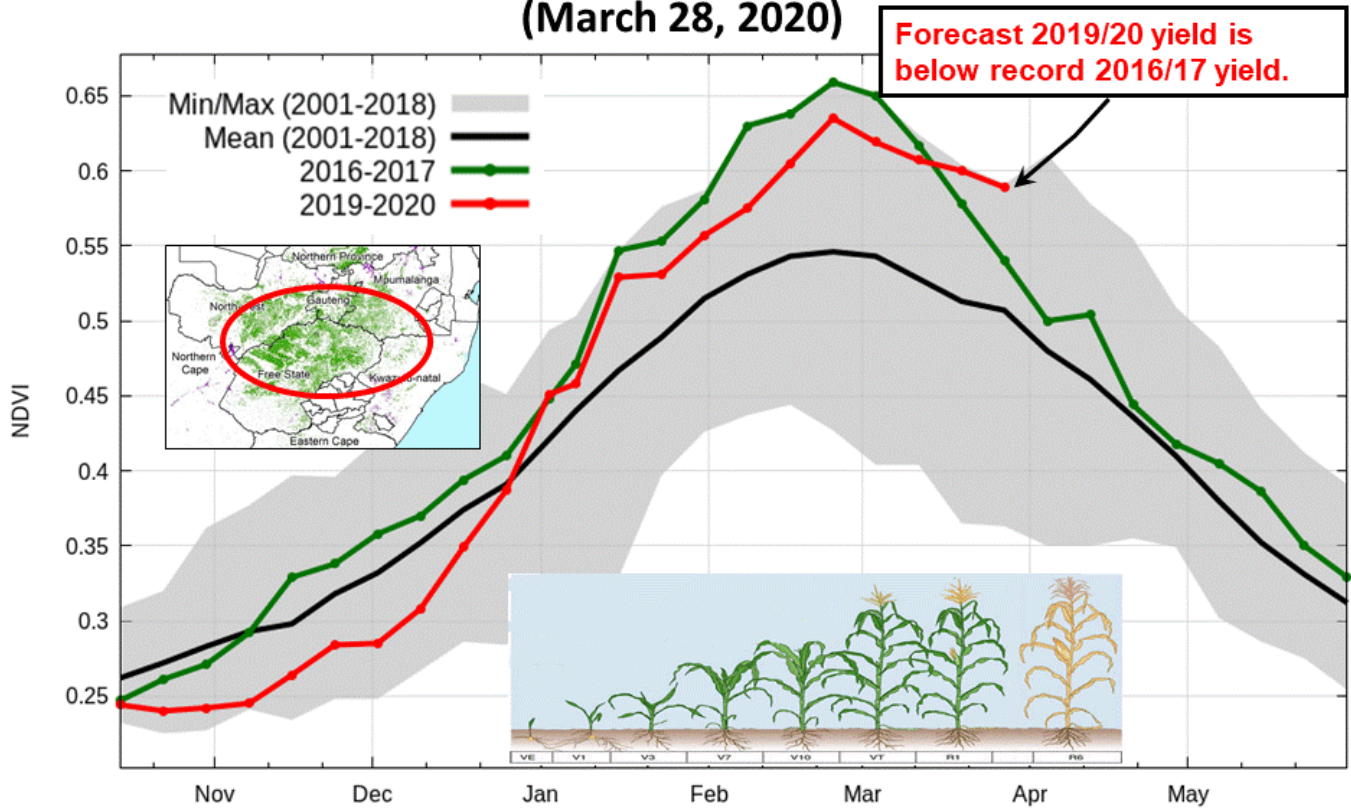


USDA Foreign Agricultural Service
Global Market Analysis
International Production Assessment Division

Source: Optimal Corn Planting Dates:
<https://twitter.com/WandileSihlobo/status/940142945075912705>

Figure 3. Optimal Planting Dates for Corn in South Africa

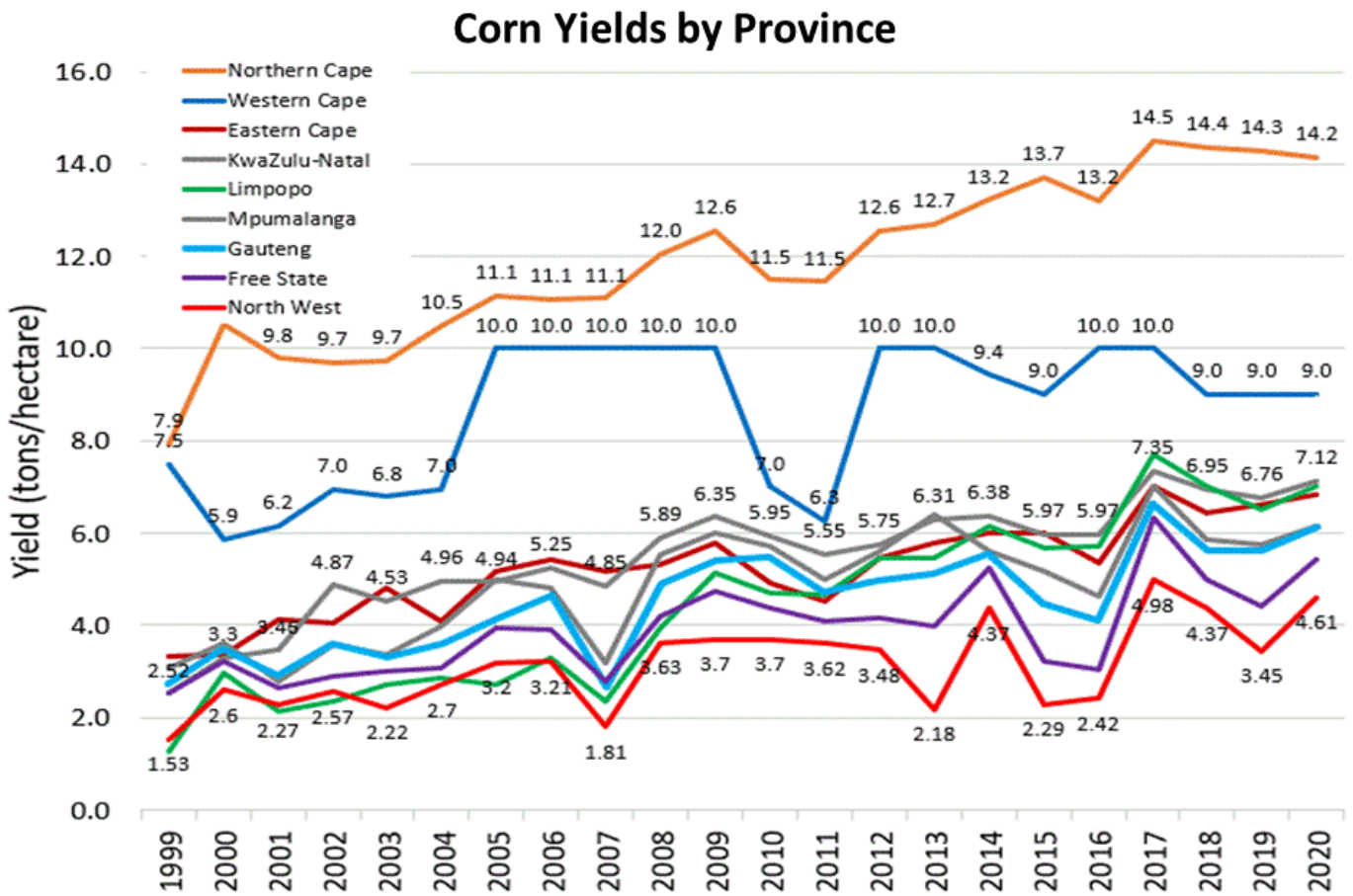
Cropland NDVI for Approximately 90 Percent of Total Corn Production (March 28, 2020)



Foreign Agricultural Service
Global Market Analysis
International Production Assessment Division

Source: USDA/NASA GLAM (Global Agriculture Monitoring) Project
<http://glam1.gsfc.nasa.gov/>

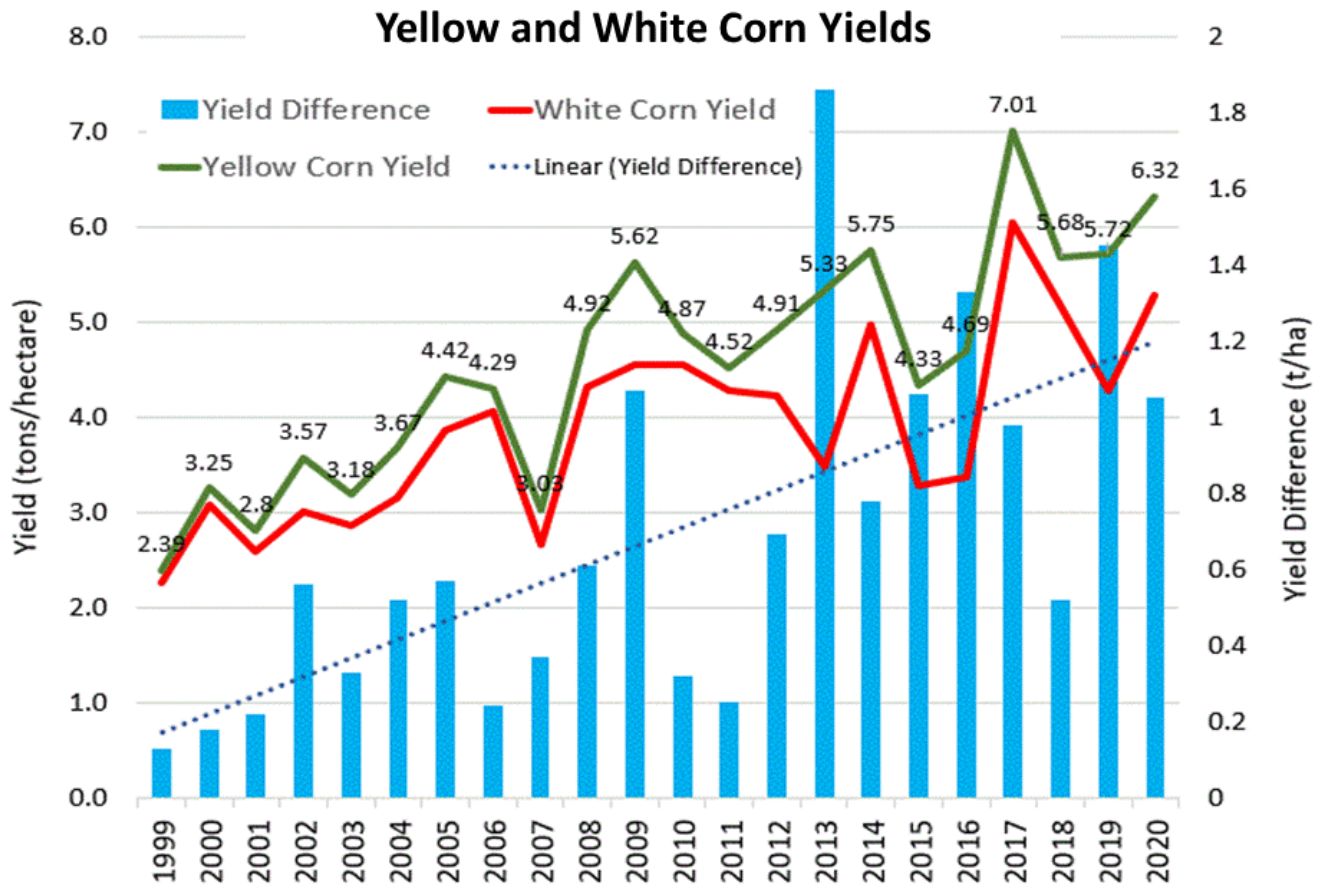
Figure 4. Cropland NDVI for Approximately 90 Percent of Total Corn Production



Source: Province corn yield data (1999-2020) from Department Agriculture, Forest and Fisheries (DAFF), Crop Estimates Committee (CEC); <https://www.sagis.org.za/cec.html>.

USDA Foreign Agricultural Service
Global Market Analysis
International Production Assessment Division

Figure 5. Historical Corn Yields by Province



Source: Yellow and white corn yield data (1999-2020) from Department of Agriculture, Forest and Fisheries (DAFF), Crop Estimates Committee (CEC); <https://www.sagis.org.za/cec.html>.

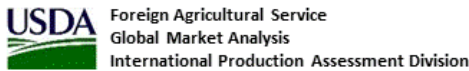
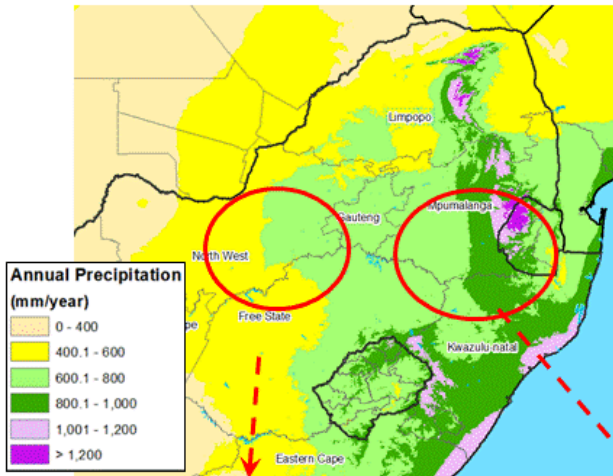
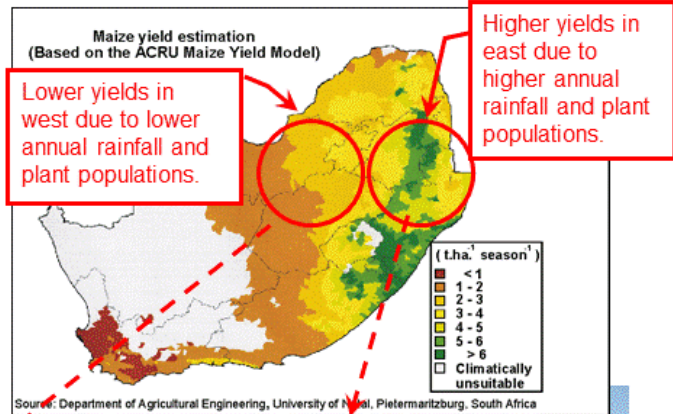


Figure 6. Yellow and White Corn Yields

Average Annual Precipitation



Potential Yields Vary by Different Agro-climates



Wide row spacings (2.3 m) in the West

Narrow row spacings (0.45 m) in the East

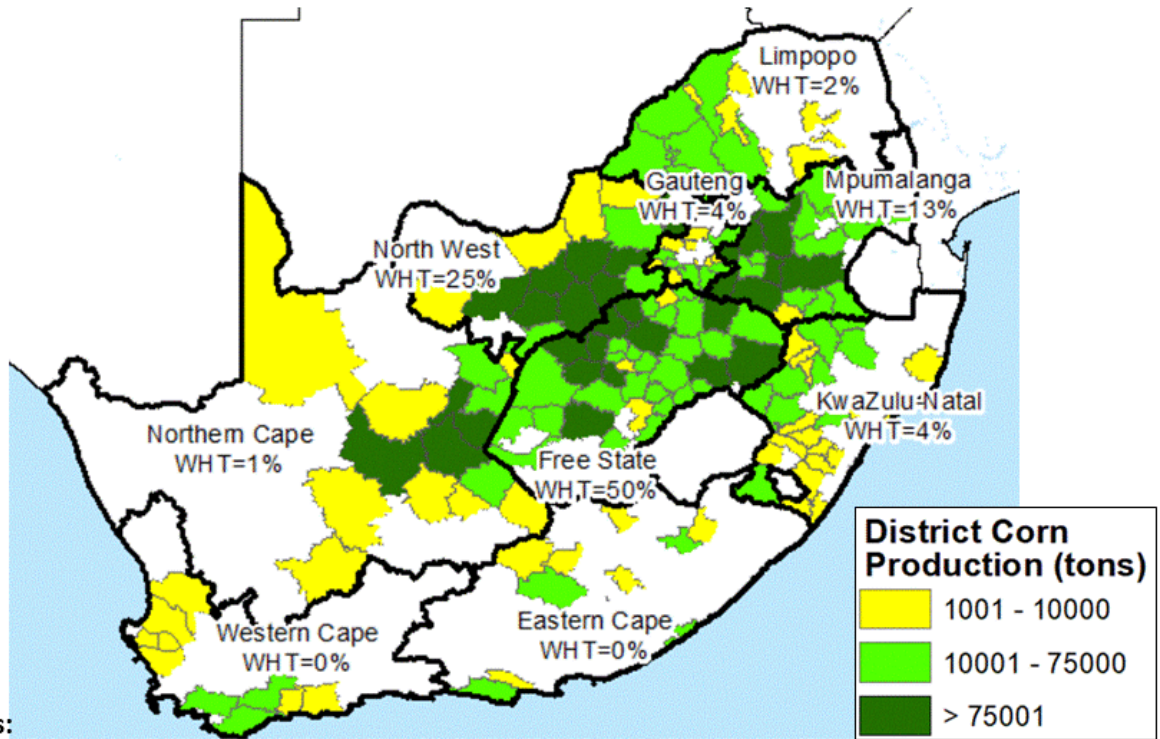


USDA Foreign Agricultural Service
Global Market Analysis
International Production Assessment Division

Source: Average Annual Precipitation from CHIRPS precipitation data (1981-2016) from University of California-Santa Barbara.

Figure 7. Average Annual Precipitation and Potential Yields between East and West

Percent of Total White Corn Production



Sources:

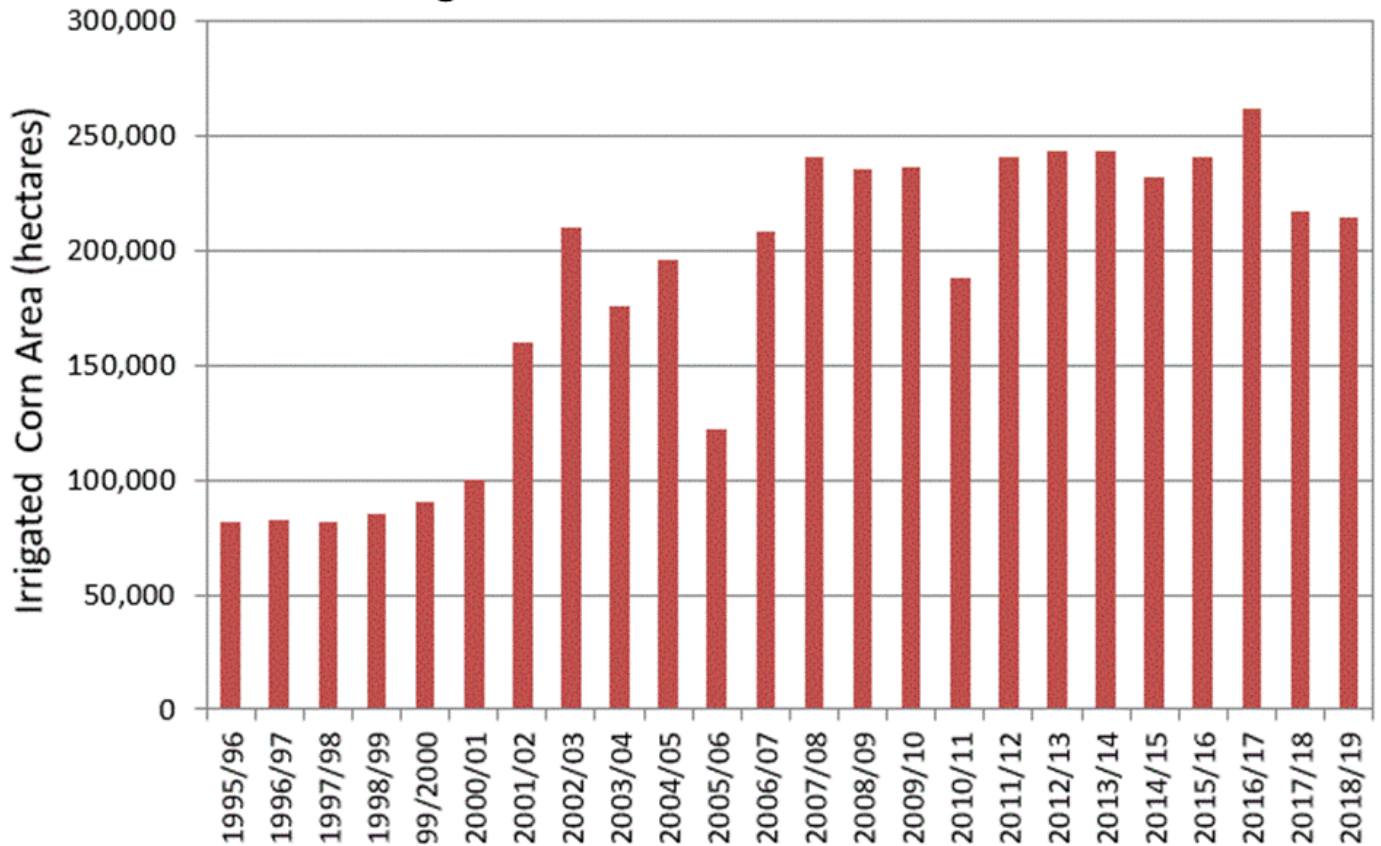
- 1. Average (2015-2019) percent of total white corn production by province from Crop Estimates Committee (CEC), Department of Agriculture, Forestry and Fisheries (DAFF).
- 2. District corn production from 2007 Census of Commercial Agriculture, Statistics South Africa.

Foreign Agricultural Service
Global Market Analysis
International Production Assessment Division

Figure 8. Percent of Total White Corn Production



Irrigated Corn Area in South Africa



Source: South Africa Department of Agriculture, Forestry and Fisheries; Trends in the Agricultural Sector.

Note: On average (2015-2019), irrigated white corn area is 6.5% of white corn area and irrigated yellow corn area is 14.5% of yellow corn area.

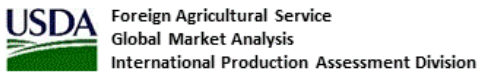
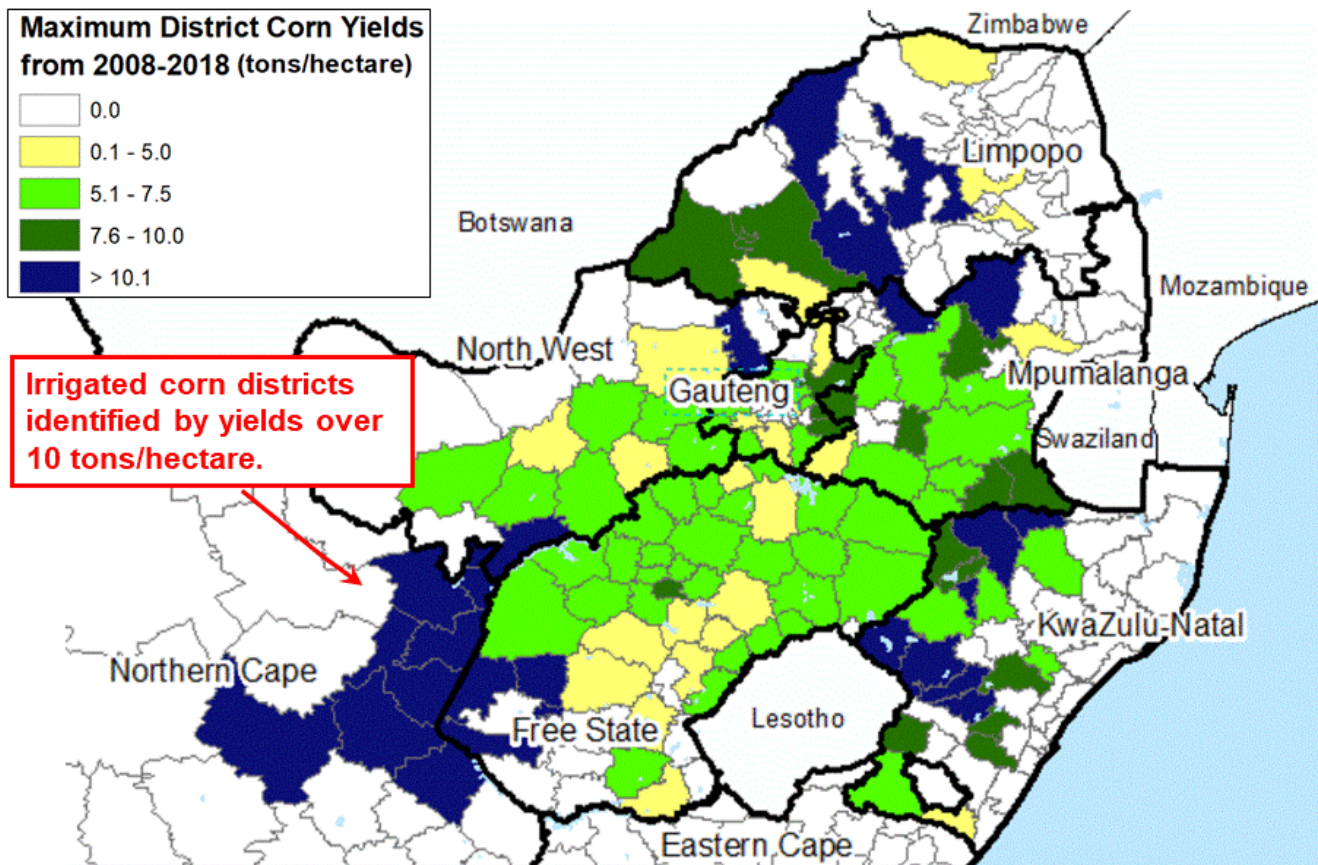


Figure 9. Irrigated Corn Area in South Africa

Commercial Corn Yields by District



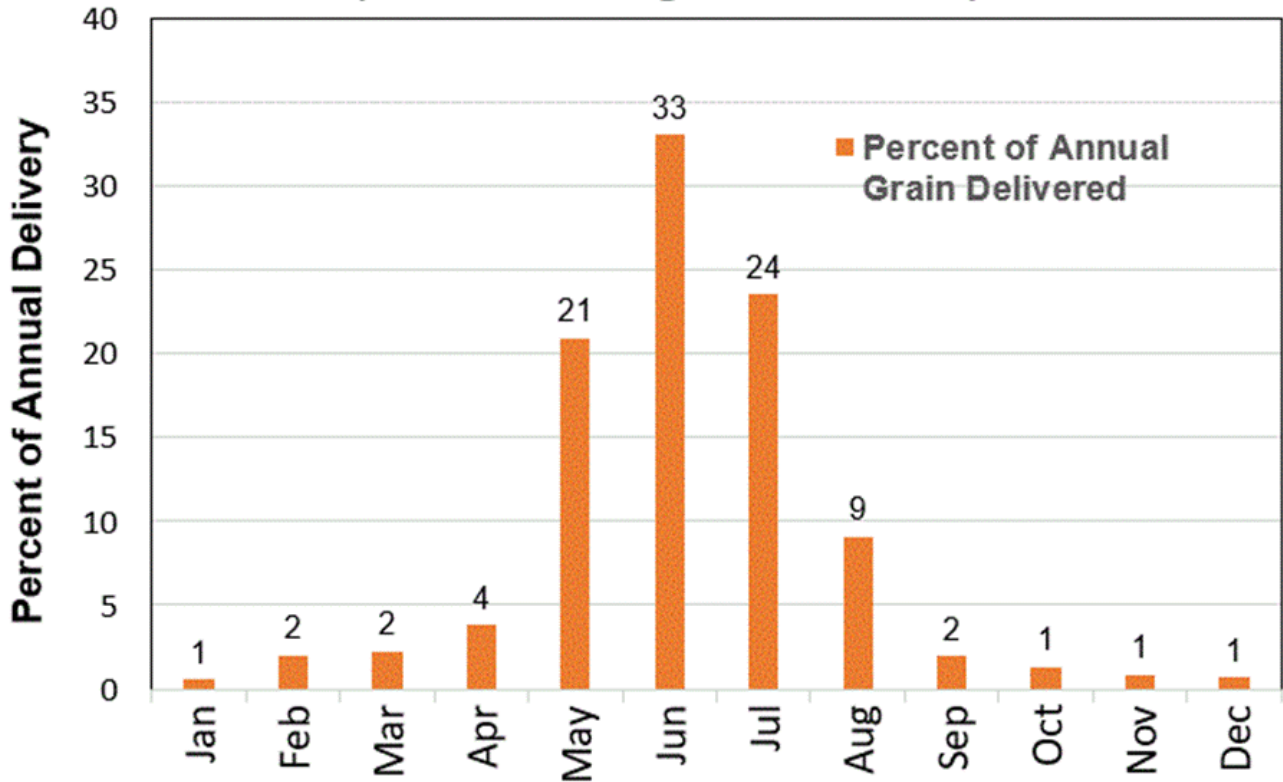
USDA Foreign Agricultural Service
Global Market Analysis
International Production Assessment Division

Source: District corn yield data (2008-2018) from Department Agriculture, Forest and Fisheries (DAFF)

Figure 10. Commercial Corn Yields by District



Average Monthly Corn Deliveries to Silos (5-year Average: 2012-2016)



USDA Foreign Agricultural Service
Global Market Analysis
International Production Assessment Division

Source: SAGIS (South African Grain Information System)
<http://www.sagis.org.za/index.html>

Figure 11. Average Monthly Corn Deliveries to Silos