



Commodity Intelligence Report

July 2, 2018

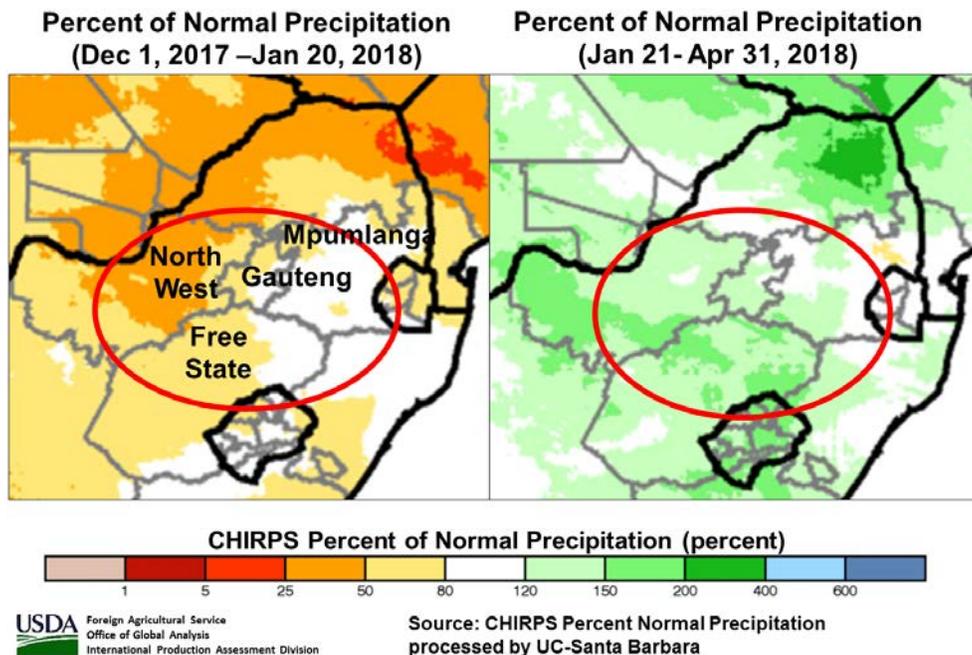
South Africa's 2017/18 Corn Yields Reach Second Highest on Record

South Africa's 2017/18 corn yield of 5.09 metric tons per hectare (t/ha) is the second highest on record, following last year's record yield of 5.86 t/ha. Total corn output for 2017/18 is estimated at 13.5 million metric tons (mmt), down 4.1 mmt from last year's record harvest of 17.6 mmt, but up 0.8 mmt from the 5-year average of 12.7 mmt. The favorable 2017/18 corn yield is due to abundant rainfall during the critical pollination and grain-filling stages from January 21 through the end of April and due to improved seed varieties that perform well under drier conditions and higher plant populations.

The 2017/18 growing season consisted of a dry spell from early December through mid-January, but abundant mid-season rains restored crop conditions and the second highest yield was achieved ([Figure 1](#)). The mid-season rainfall during the pollination and grain-filling stages was also the wettest season since 1981 for the eastern Free State ([Figure 2](#)). The plentiful mid-season rains helped to boost yields and provided a bumper harvest, illustrating how early drought-affected crops can recover with above-average yields if adequate rainfall is received during the critically important pollination and grain-filling stages.

Figure 1. January's Dry Spell Followed by Abundant Mid-Season Rains

Dry Planting Season and Wet Grain-filling Season



The North West province had the driest late-planting season (from early December through mid-January) since 1981, as shown in [Figure 2](#). Corn area was also reduced by 300,000 hectares due to poor germination and crop failure from the December through January dry spell. The 6-week dry spell in the North West province slowed down plant growth in January and satellite-derived Normalized Difference Vegetation Index (NDVI) values were at minimum levels by the end of January ([Figure 3](#)). But crop conditions quickly recovered because of abundant mid-season rains starting on January 21, 2018 and cropland NDVI values reached maximum levels by the end of March ([Figure 3](#)). The favorable cropland NDVI measurements for the growing season corresponded to the second highest corn yields for the North West province.

National crop yield estimates of 5.09 t/ha are the second highest on record and it is the second consecutive year for national corn yields to exceed 5 t/ha ([Figure 4](#)). Corn yields in all provinces have exceeded 5 t/ha for the past two years, except for the relatively dry North West province where yields have been slightly below 5 t/ha due to its drier climate and relatively low percentage of irrigated corn production ([Table 1](#)).

Table 1. Corn Yields Below 5 t/ha in North West Province

South Africa Corn Yields (tons/ha)

Province	2016/17			Percent Irrigated Production (%)*	Percent of Total 2018 Production (%)**
	(Record)	2017/18	5-Year Avg.		
North West	4.98	4.42	3.25	16	16
Free State	6.32	5.22	4.36	12	43
Mpumalanga	7.00	6.00	5.76	7	22
Gauteng	6.65	5.97	5.17	15	5
Kwazulu/Natal	7.35	7.18	6.40	36	5
Total	5.86	5.09	4.37	20	

* Data from South Africa's Crop Estimates Committee (CEC), June 25, 2013

** Data from South Africa's CEC, May 29, 2018

South Africa's record corn yields have increased by 35 percent in less than 10 years ([Figure 4](#)). These recent yield improvements can be largely attributed to better management practices and improved seed varieties with increased plant populations. Seed varieties have seen rapid improvements in genetics that increase yields under drier conditions, shorter growing seasons and higher plant populations. Average yields for irrigated corn fields in South Africa ([Figure 5](#)) are approximately 11 t/ha and higher irrigation yields in recent years demonstrate how short season varieties (less than 120 days) with high plant populations (55,000 to 100,000 plants per hectare) increase corn yields with the greatest economic returns. In addition, the latest advances in GPS planter technology has enabled South African farmers to plant

crops with greater precision, higher plant populations, more uniform depths, and at faster driving speeds in the fields, thus reducing planting time.

South Africa's corn crop is planted from October through early January and the harvest of rain-fed corn begins in late April and continues through August. The harvest of irrigated corn typically starts in March, with two-thirds of the crop delivered to South Africa's grain silos by the end of June and the final third delivered from July through September ([Figure 6](#)). The final 2017/18 production estimate ([Figure 7](#)) will account for all corn delivered to the silos by the end of 2018, and South Africa's Crop Estimates Liaison Committee will submit a final 2017/18 production estimate by early 2019.

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Current area and production estimates for grains and other agricultural commodities are available from the Production, Supply and Distribution Database (PSD Online) at:

<http://apps.fas.usda.gov/psdonline/psdHome.aspx>

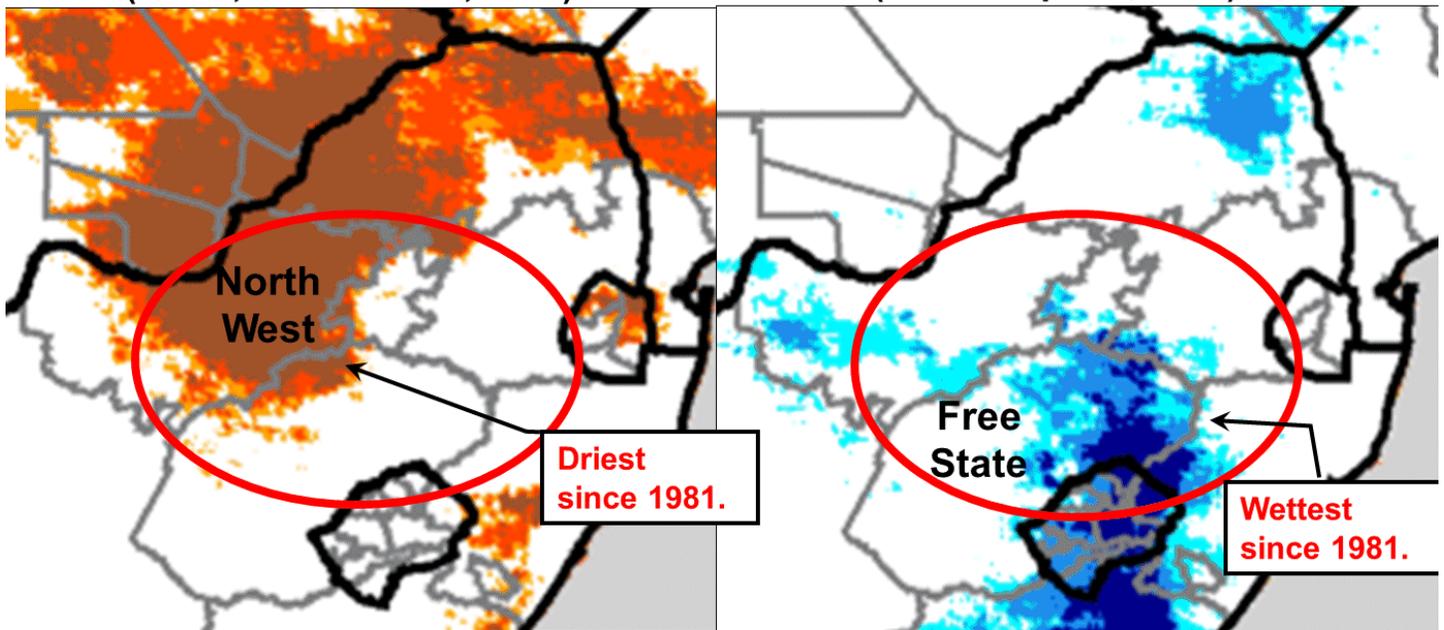
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Figure 2. Driest Late Planting Season in North West Province and Wettest Grain-filling Season in Eastern Free State.

Dry Planting Season and Wet Grain-filling Season

Seasonal Rainfall Ranking since 1981
(Dec 1, 2017–Jan 20, 2018)

Seasonal Rainfall Ranking since 1981
(Jan 21- Apr 31, 2018)



CHIRPS Seasonal Rainfall Rankings since 1981

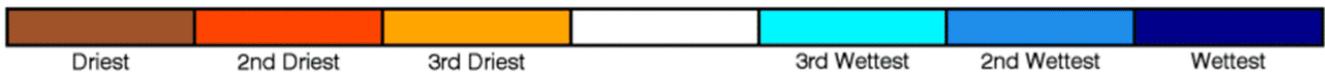
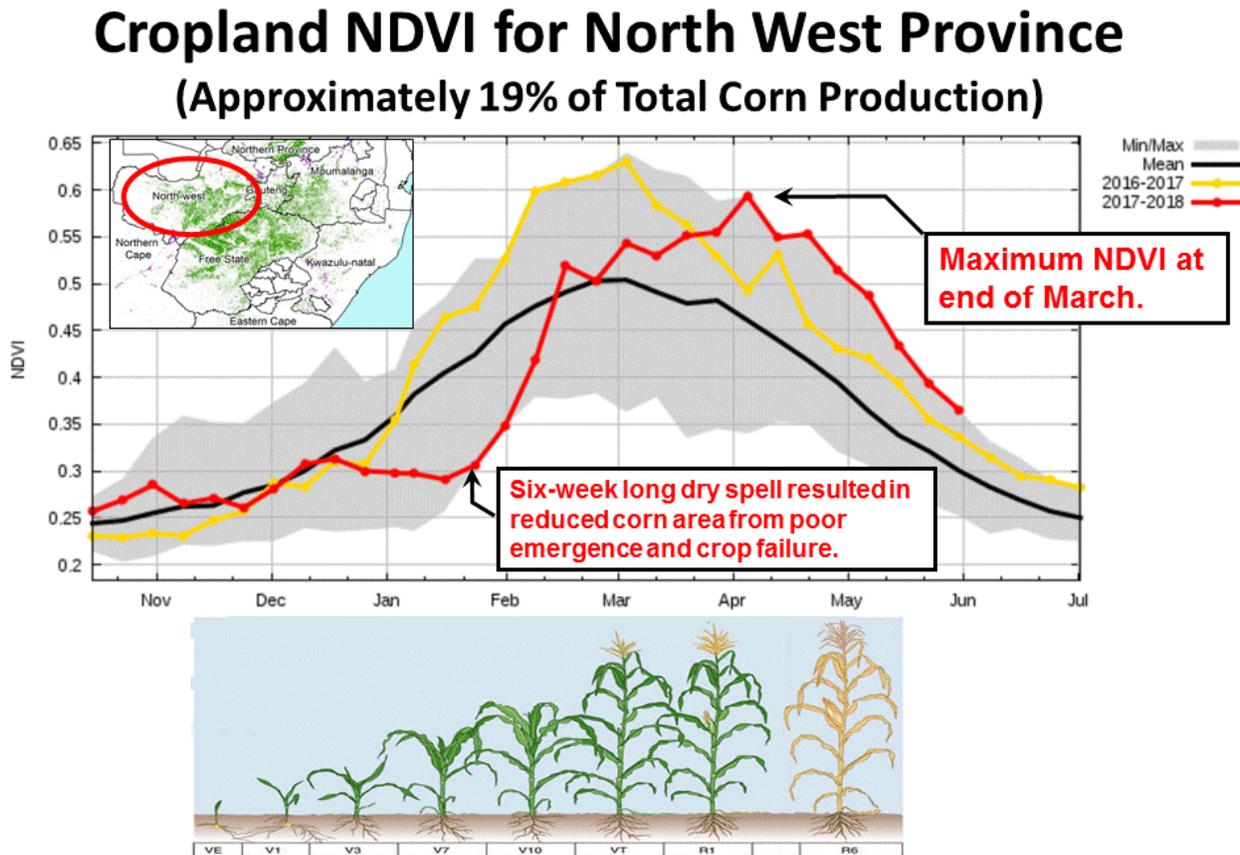


Figure 3. Minimum NDVI during Planting Season and Maximum NDVI during Grain-Filling Stages



USDA Foreign Agricultural Service
Office of Global Analysis
International Production Assessment Division

Source: USDA/NASA GLAM (Global Agriculture Monitoring) Project
using 250-m NDVI-MODIS imagery- <http://glam1.gsfc.nasa.gov/>



Figure 4. Record Corn Yields Increase by 35 Percent in Less than Ten Years.

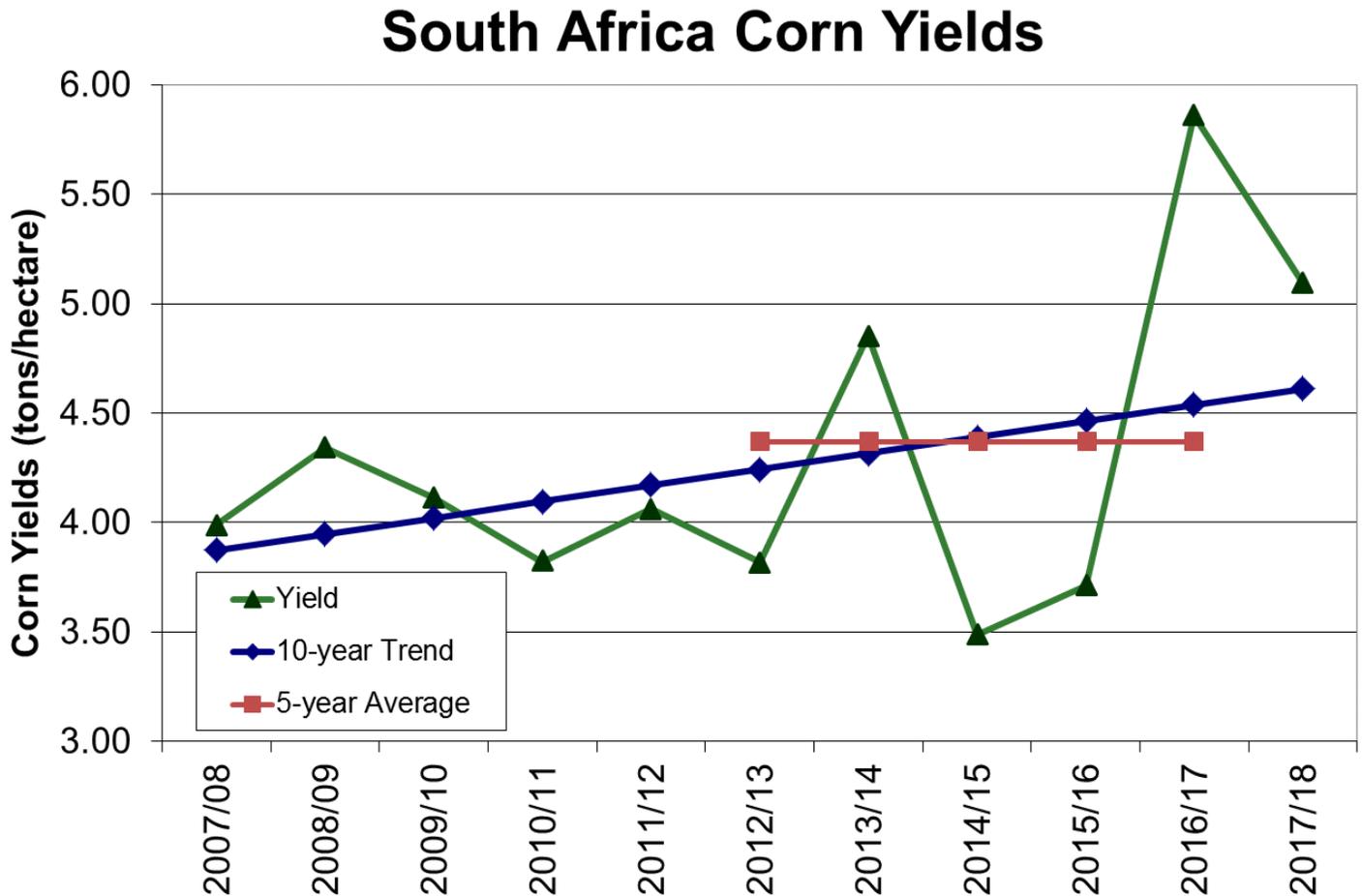


Figure 5. Irrigation Areas of South Africa

(from Grains SA; “Reducing the risk of Fusarium head blight disease for irrigated wheat”
<http://www.grainsa.co.za/reducing-the-risk-of-fusarium-head-blight-disease-for-irrigated-wheat>)

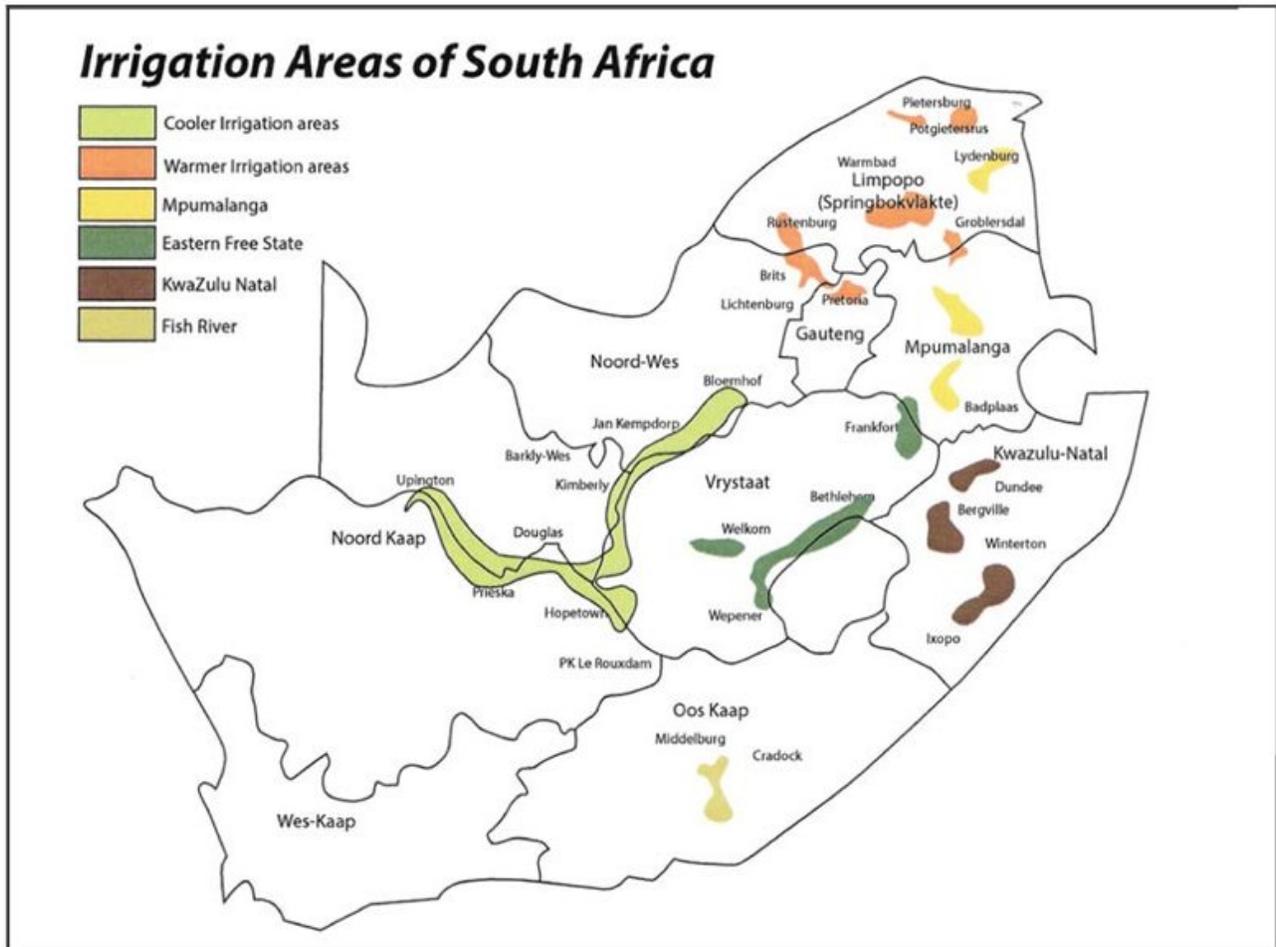
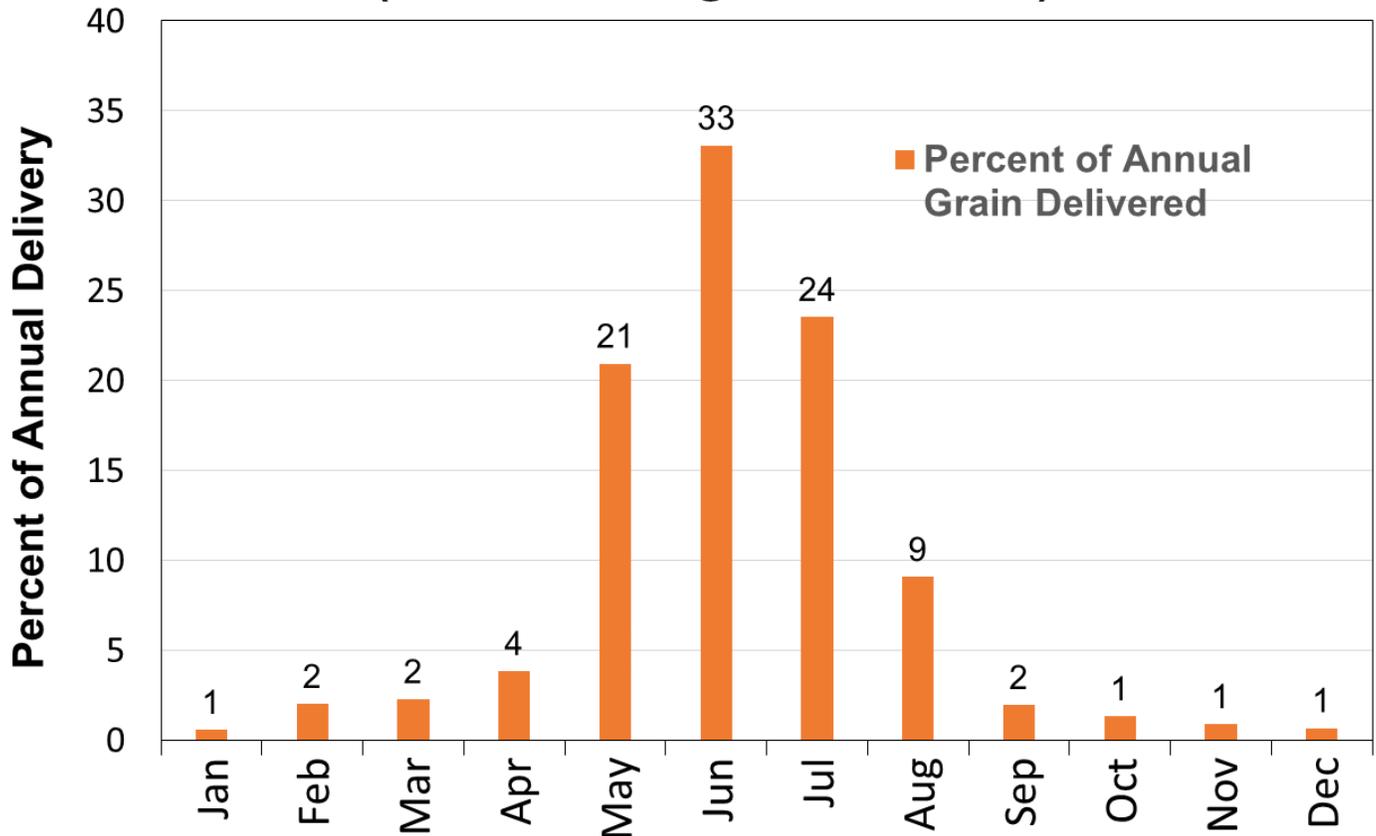




Figure 6. Average Corn Deliveries to Silos

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

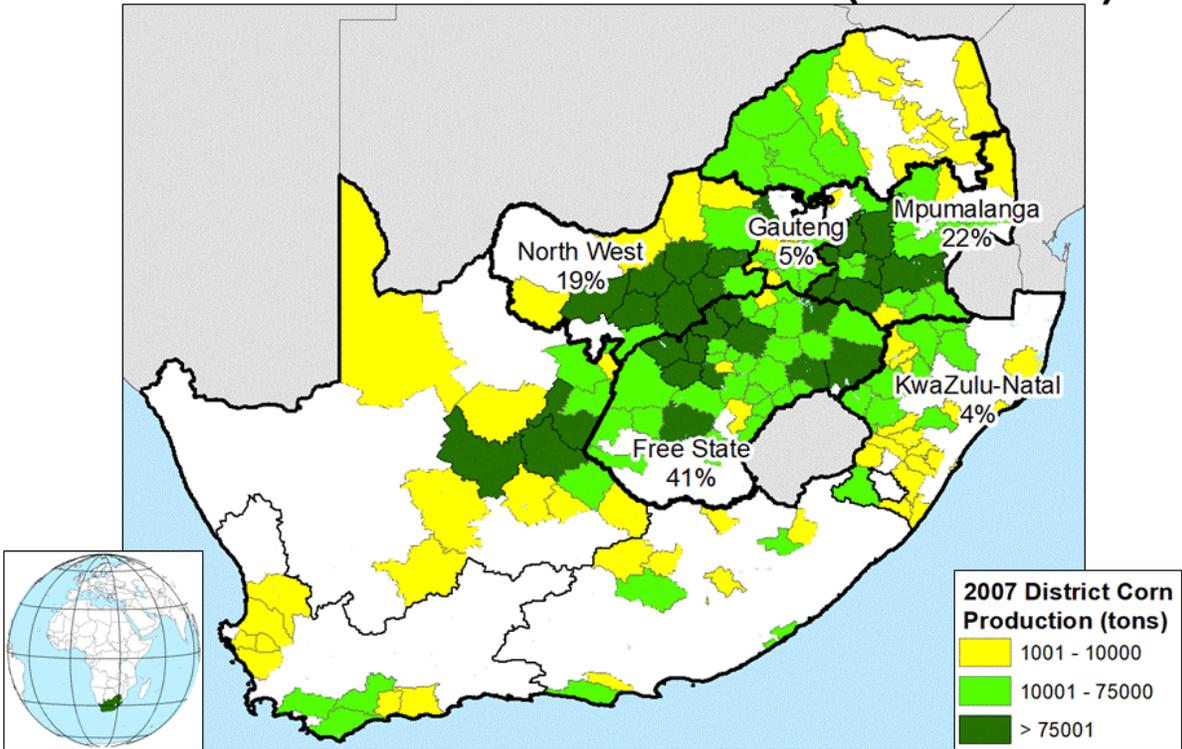


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Source: SAGIS (South African Grain Information System)
<http://www.sagis.org.za/index.html>

Figure 7. Average Corn Production by Province

South Africa Corn Production (2011-2015)



Data Sources:

- 1). Percentage value indicates percent province production of average 2011-2015 production.
- 2). District corn production from 2007 Census of Commercial Agriculture, Statistics South Africa, 2011.