

08 May 2017

Kilima

Monthly Climate Forecast

Monthly Overview

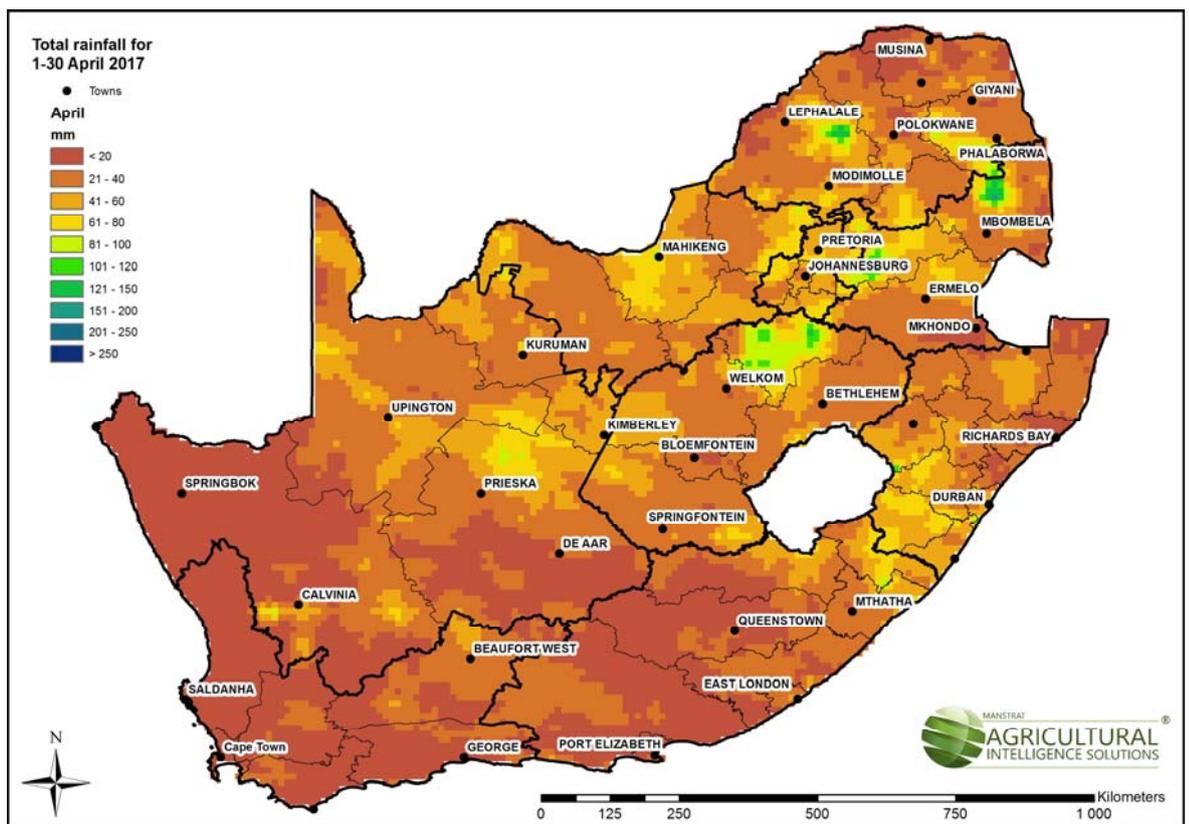
April is the month of the year when Autumn really weather sets in over South Africa. With dryer air in circulation over the country, minimum temperatures dropped to the low teens in most parts of the summer rainfall region, with maximum temperatures dropping to the mid twenties. While the rainfall also decreased significantly over the summer rainfall areas, these areas still received above normal rainfall. In the Western Cape, temperatures remained high while the winter rainfall region received more rain with the change of season. The winter rainfall region is in dire need of good rainfall now as dam levels continued dropping to critical levels.

Most of South Africa experienced good rainfall during the first 10 days of April and the trend continued during the second 10 days of the month, while less rain fell in the northern regions of the country towards the end of April. By the 20th of April, the Western Cape and west coast were hit by a heat wave while in contrast, some areas in the eastern Free State experienced its first frost of the colder season. During the last 10 days of April, rainfall was mainly over the winter rainfall region, with Cape Town experiencing rare thundershowers. While good rainfall fell over many areas in the winter rainfall region, a lot more rain is needed to bring relief from the drought.

Rainfall

Isolated areas in the summer rainfall region received 60mm and more rainfall during April. Although not noticeable in Figure 1, most areas of South Africa received good rainfall for this time of year.

Figure 1: Total rainfall estimation in millimetres for 1 to 30 April 2017



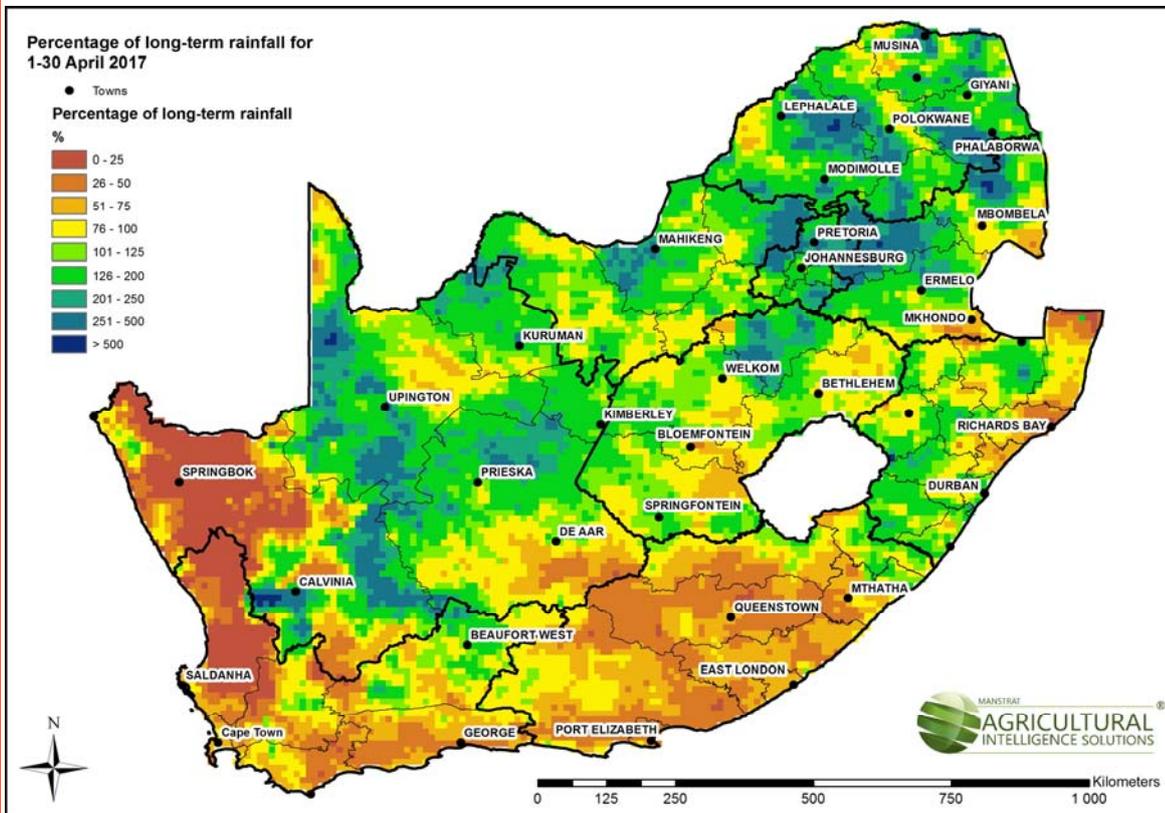
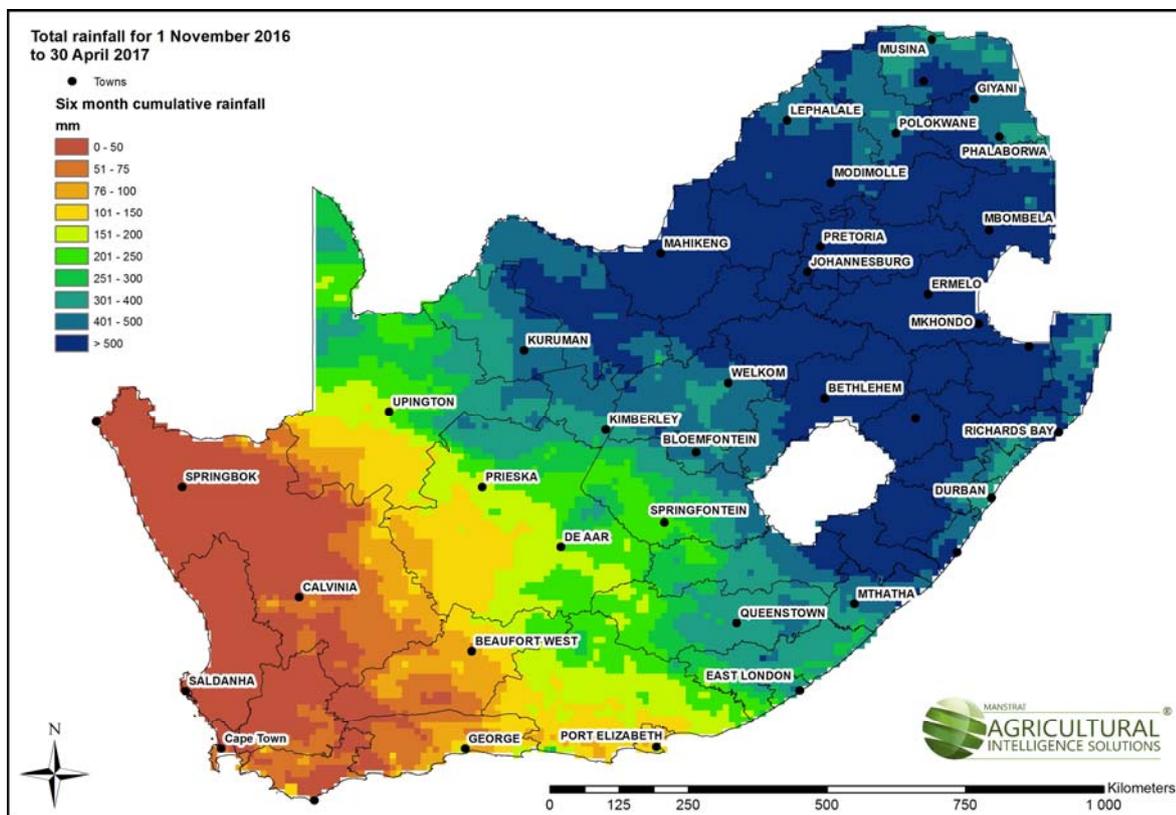


Figure 2: Percentage difference - rainfall for 1-30 April 2017.

Figure 2 gives a good perspective of the rainfall for April 2017. Good rainfall fell over most of South Africa while the western and southern areas of the Cape and the Eastern Cape received less rain than normal for this time of year.

Figure 3: Cumulative rainfall from 1 November 2016 to 30 April 2017 in millimetres.



The cumulative rainfall map (Figure 3) for 1 November to 30 April highlights areas that received more than 150 mm during the last 6 months: Light green colours indicate areas receiving between 150 to 200 mm; dark green colours indicate areas that received between 200 and 300 mm; areas that received more than 400 mm are indicated with the blue colours. Large parts of the summer rainfall region has received more than 500 mm during the last 6 months.



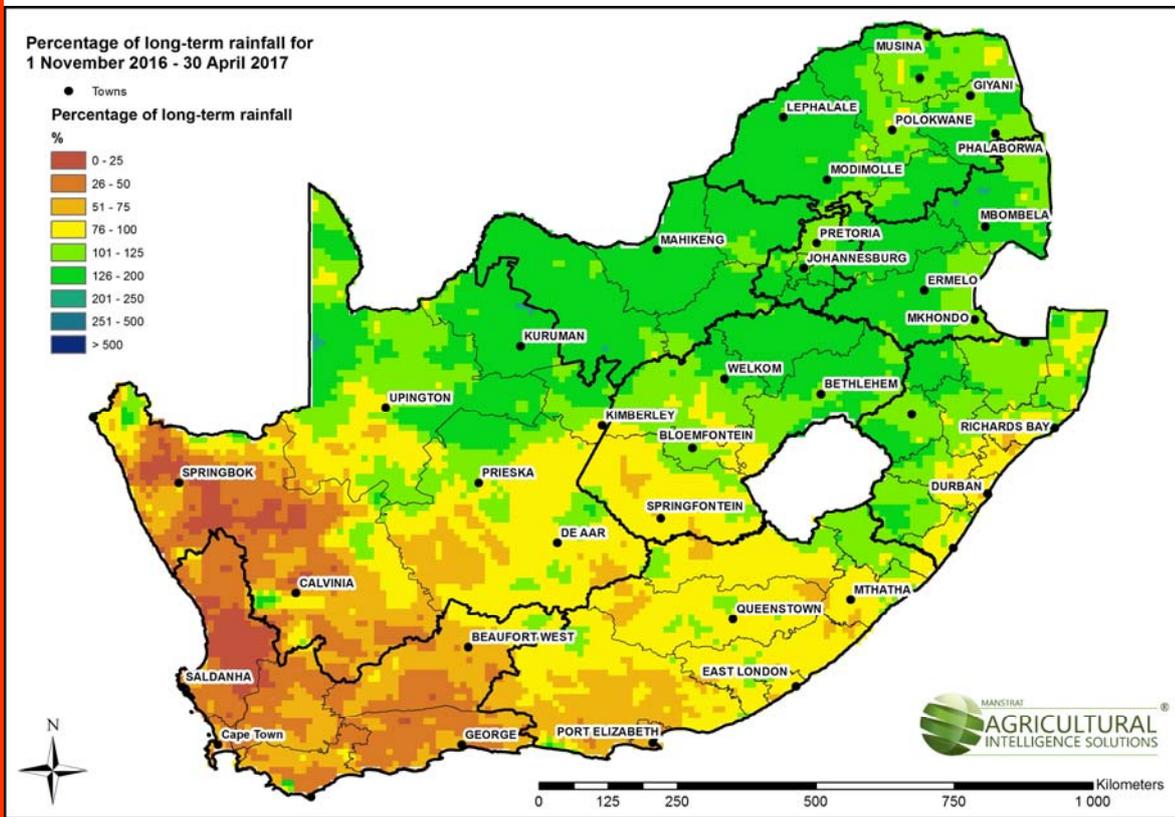


Figure 4: Percentage difference - rainfall for 1 November 2016 to 30 April 2017.

Figure 4 highlights the areas of South Africa that received below-normal and above-normal rainfall over the last 6 months. The yellow to light brown colours highlight areas of concern. The majority of the summer rainfall region (Northern South Africa) received normal to above normal rainfall during the last 6 months while isolated areas, indicated in yellow, received below-normal rainfall and include the southern Free State, KZN and the Eastern Cape.

El Nino/La Nina

Background: Periods of below normal rainfall in South Africa are often linked with the El Nino event while above normal rainfall is usually linked to La Nina. The latest predictions issued by the Australian Bureau of Meteorology indicate neutral conditions. (Figure 5). There is currently no major cooling in the Pacific Ocean which contributes to the neutral conditions. Climate models do indicate a warming in the Pacific Ocean. Although conditions will still remain neutral, prediction models indicate the warming of the ocean to continue to near El Nino levels around January 2018. Prediction models tend to be less accurate during the autumn months and will become more accurate as we move towards June 2017 (winter).

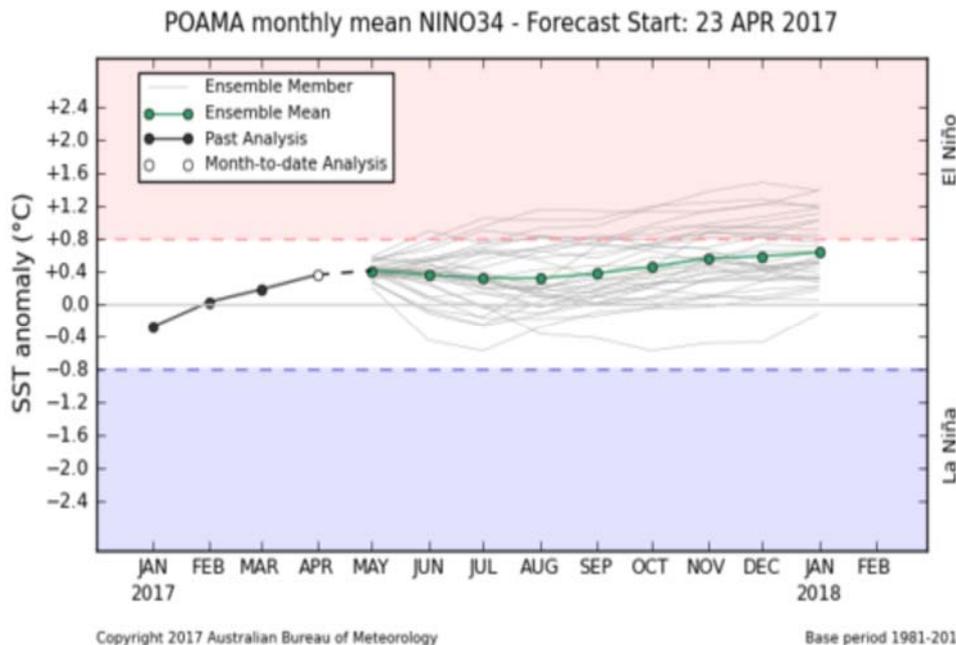


Figure 5: Current model predictions for Sea Surface Temperature in the Pacific.



NDVI

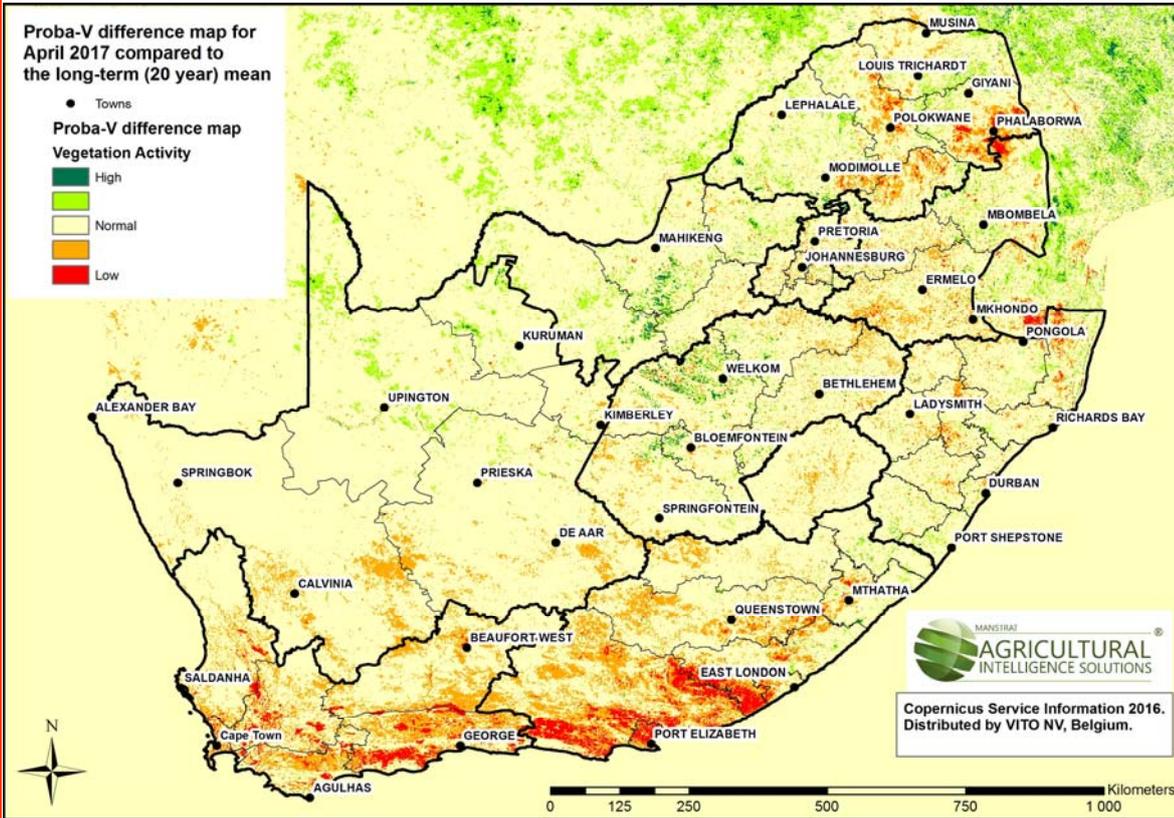
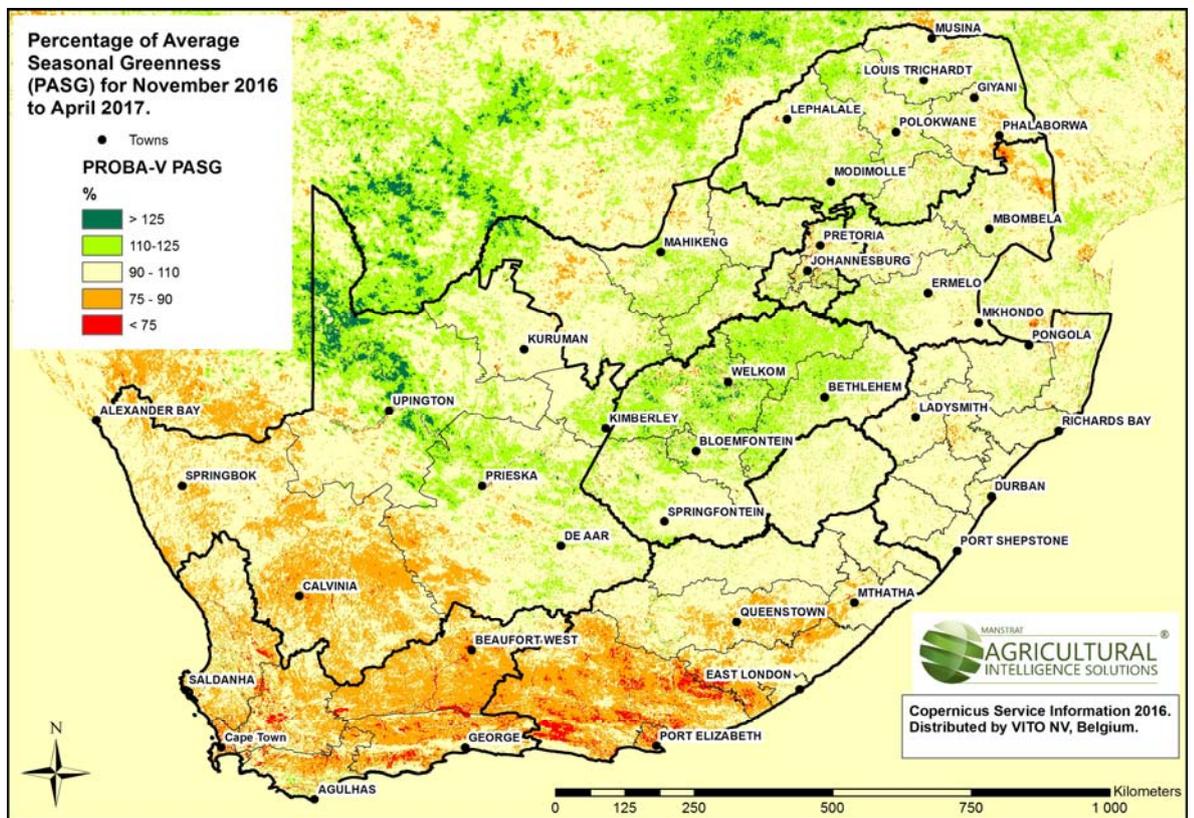


Figure 6: ProbaV difference map for April 2017 compared to the long-term (19-year) average.

Figure 6: The map was created by calculating the difference between April 2017 and the long-term (20 year) average for April. Figure 6 is dominated by normal vegetation activity (beige colour). Areas of concern with below-normal vegetation activity (red colours) can be seen in the Eastern & Western Cape.

Figure 7: Percentage of Average Seasonal Greenness (PASG) for the last 6 months ending in April 2017.



Drought is a long-term phenomenon. Focusing on longer time-periods is a more reliable method to monitor and map drought. Areas of concern include the Western & Eastern Cape provinces. Higher vegetation conditions can be seen over the northern and central Free State, as well as over parts of the Northern Cape, North West and Limpopo provinces.



General Discussion

	Apr-17	May-17	🔴🟢		Apr-17	May-17	🔴🟢		Apr-17	May-17	🔴🟢		Apr-17	May-17	🔴🟢
Bridle Drift Dam	51%	46%	🔴	Kalkfontein Dam	14%	14%		Spioenkop Dam	100%	100%		Loskop Dam	89%	96%	🟢
Darlington Dam	29%	37%	🟢	Sterkfontein Dam	90%	90%		Woodstock Dam	86%	54%	🔴	Rhenosterkop Dam	22%	21%	🔴
Impofu Dam	70%	67%	🔴	Vaal Dam	104%	102%	🔴	De Hoop Dam	100%	100%		Witbank Dam	101%	102%	🟢
Kouga Dam	31%	24%	🔴	Vanderkloof Dam	61%	65%	🟢	Flag Boshielo Dam	52%	52%		Spitskop Dam	102%	102%	
Lubisi Dam	46%	45%	🔴	Bronkhorstspuit Dam	81%	83%	🟢	Middel-Letaba Dam	26%	25%	🔴	Hartbeespoort Dam	98%	99%	🟢
Ncora Dam	91%	91%		Roodeplaat Dam	99%	100%	🟢	Mokolo Dam	101%	100%	🔴	Molatedi Dam	64%	62%	🔴
Umtata Dam	101%	100%	🔴	Albert Falls Dam	36%	35%	🔴	Nandoni Dam	101%	102%	🟢	Roodekopjes Dam	93%	103%	🟢
Xonxa Dam	100%	100%		Goedertrouw Dam	30%	30%		Tzaneen Dam	61%	62%	🟢	Brandvlei Dam	15%	11%	🔴
Allemanskraal Dam	51%	51%		Inanda Dam	66%	65%	🔴	Driekoppies Dam	47%	47%		Clanwilliam Dam	16%	8%	🔴
Bloemhof Dam	102%	102%		Midmar Dam	77%	78%	🟢	Grootdraai Dam	98%	94%	🔴	Kwaggaskloof Dam	20%	16%	🔴
Erfenis Dam	81%	78%	🔴	Ntshingwayo Dam	95%	94%	🔴	Heyshope Dam	86%	82%	🔴	Theewaterskloof Dam	21%	17%	🔴
Gariep Dam	95%	91%	🔴	Pongolapoort Dam	41%	41%		Kwena Dam	69%	74%	🟢	Voelvlei Dam	24%	19%	🔴

Figure 7: South African dam levels between 6 February 2017 and 27 February 2017

Last month it was noted that the maize crop for the 2016-17 season was expected to be over 70% higher than the production in the disastrous 2015-16 season. The Crop Estimate Committee similarly expects significant increases in production of other crops; sorghum should increase by 99%, dry beans 80%, soybeans 44% and sunflower 23%. A much larger area of groundnuts was planted this season and production could be up to x4 times higher. The increase in plantings of groundnuts and sorghum specifically, indicates a risk mitigation strategy following the severe drought, particularly by small-scale farmers.

Some perennial fruit crops have not recovered fully from the drought. Avocados production is down, but this is being compensated for by good export prices. The high prices are a continuation of the upward trend of the past seven years. European consumers are becoming more familiar with the avocado; what is most attractive to the consumer is the convenience of the newer “ripe-and-ready” avocado product.

April was a good month for many livestock farmers. Demand for all types of meats increased over the Easter weekend. The lower feed prices and good grazing conditions has benefited many farmers. High meat prices, especially for mutton farmers, however may lead to consumer resistance and they may seek cheaper alternatives.

By this time of the year, farmers should have already planned their winter programmes to maintain animal condition and health through the winter months. Small stock farmers that have an autumn lambing season should watch out for cold fronts coming along and build adequate shelters for lambs and goat kids. The condition of animals may begin to drop with the decrease in nutritive value of veld grasses, farmers should watch that animals do not lose too much condition as that will have a negative impact on growth as well as fertility in the long run.

Acknowledgements:

SPOT Vegetation Data: The product was generated by the land service of Copernicus, the Earth Observation program of the European Commission. The research leading to the current version of the product has received funding from various European Commission Research and Technical Development programs. The product is based on VEGETATION data ((c) CNES).

PROBA-V Data: The product was generated by the land service of Copernicus, the Earth Observation program of the European Commission. The research leading to the current version of the product has received funding from various European Commission Research and Technical Development programs. The product is based on PROBA-V data ((c) ESA).

El-Nina/La Nina predictions: POAMA graph provided by courtesy of the Australian Bureau of Meteorology, (c) 2016.

Rainfall Estimation (RFE): Data provided by the National Oceanic and Atmospheric Administration (NOAA), Centre for Weather and Climate Prediction. <http://www.cpc.noaa.gov/products/international/data.shtml>

