



# agriculture, forestry & fisheries

Department:  
Agriculture, Forestry and Fisheries  
REPUBLIC OF SOUTH AFRICA

## National Agro-meteorological Committee (NAC) Advisory on the 2016/17 spring and summer seasons Statement from Climate Change and Disaster Management 01 DAFF 2016

04 October 2016

In the light of the seasonal outlook as produced by the South African Weather Service (SAWS), the following advisory guidelines are suggested. It is emphasized that these advisories are broad guidelines and should be interpreted considering the local aspects of the region such as soil types, cultural preferences and farming systems. Depending on the particular region, the prioritization of the guidelines will differ. The basic strategy to follow would be to minimize and diversify risk, optimize soil water availability and to manage the renewable resources (rain water and grazing) to uphold sound farming objectives. Long-term mitigation strategies should be considered by implementing techniques to enhance in-field water harvesting by reducing run-off and improving infiltration. Reduced tillage methods are very important in this regard, as is basin tillage, to capture rainwater in the drier areas. **The provinces should further simplify, downscale and package the information according to their language preference and if possible use local media and farmers' days to disseminate the information. Users are advised to be on the look-out and act on the daily extreme weather warnings as well as the monthly advisory.**

### I. CURRENT CONDITIONS

Figure 1

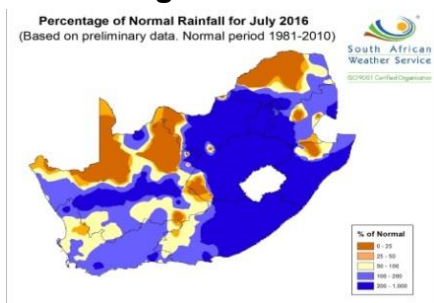


Figure 2

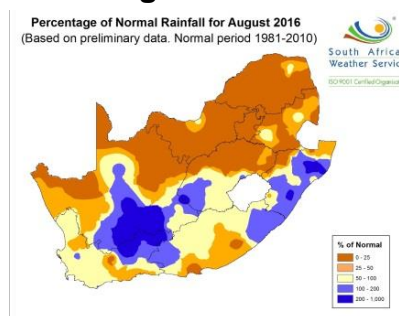


Figure 3

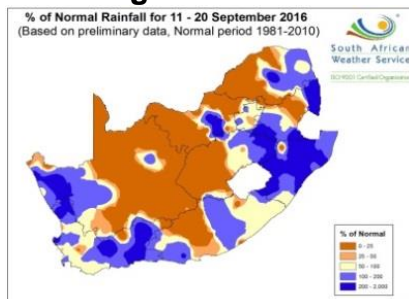
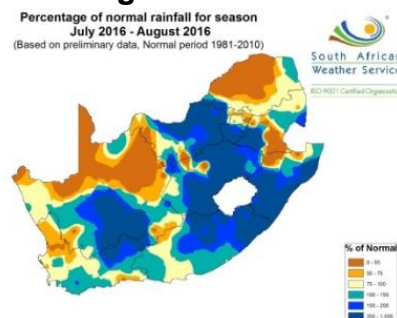
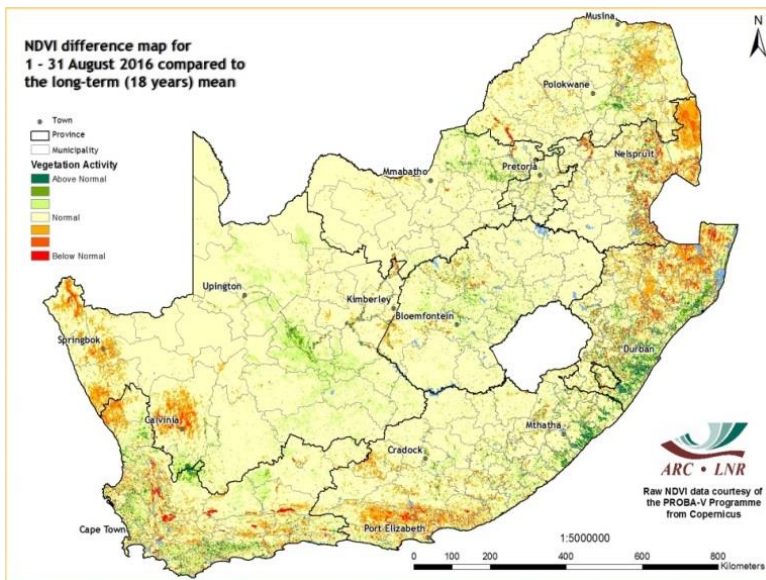


Figure 4



In July, above normal rainfall was received over most parts of the country (**Figure 1**). In August, rainfall decreased resulting in below normal rainfall over most areas, with above normal rainfall only in the eastern coastal areas as well as some areas in the west (**Figure 2**). For 11 to 20 September, above normal rainfall was received in the north eastern as well as the western parts of the country while the remaining areas received near normal to below normal rainfall (**Figure 3**). For the season July to August 2016, above normal rainfall was received over most of the central parts of the country as well as eastern coastal areas with the remaining areas receiving near normal to below normal rainfall (**Figure 4**).

## NDVI difference map for August 2016 compared to the long-term mean



Vegetation activity is much lower over the northern parts of the winter rainfall region, the eastern Garden Route into the southern parts of the Eastern Cape and parts of KwaZulu-Natal and Mpumalanga. Vegetation activity is higher over much of southern and coastal KwaZulu-Natal as well as, to a lesser extent, some areas of the interior.

## II. CONDITIONS IN THE PROVINCES DURING AUGUST 2016

### Eastern Cape

Many areas are dry although rainfall received was near normal with patches of above normal in the west and east. Generally the veld conditions are reasonable to poor but very poor in parts of Cacadu, Nelson Mandela Bay and Alfred Nzo. Crops are in reasonable condition but very poor in parts of Makana Local Municipality. In other areas crops were not planted due to drought. Livestock on the other hand is in reasonable to poor condition but very poor in Sundays River Valley. Water for livestock remains critical in most areas. The level of major dam is low at 65% as compared to 80% of 2016 during the same period.

### Free State

Below normal rainfall was received and above normal temperatures have been experienced. Very dry conditions are being reported throughout the province and as a result the veld is of poor quality for grazing. Livestock is in poor condition and has to be hand fed in some areas. Mortalities are still being reported in commonages. The veld fire season started earlier because of the dry conditions. The level of major dam has decreased as compared to previous year (54% in 2016; 72% in 2015).

### **Gauteng**

The province remains dry even though some rain was received towards mid-September. The veld is in poor condition but livestock is in reasonable condition due to various interventions e.g. provision of feed. Veld fires in some areas destroyed veld and infrastructure. Water restrictions have been implemented on irrigation. The level of major dams is at 80%, lower than 88% of 2015.

### **KwaZulu-Natal**

Good rains have been received in some areas. Zululand, Amajuba, uMkhanyakude and UThungulu (now King Cetshwayo), remain in the emergency drought status while UThukela, UMzinyathi, iLembe, uMgungundlovu and Harry Gwala are in the severe drought status. The rains at the end of winter into spring have helped rye grass pasture regrowth, but dryland pastures are still slow in regrowth stages. Some farmers have started preparing land for maize silage. Planting of wheat in the UThukela district has been completed. Irrigation remains the biggest limiting factor with restrictions remaining at 50%. Reports for high livestock mortality are still prevalent in the worst-affected northern areas of UMkhanyakude, Zululand, Amajuba and UMzinyathi. There has been a report of a localised outbreak of Banana Bunchy Top Virus in Hibberdene. A report of mixed vegetable crop losses caused by a hailstorm was received. Incidents of veld fires have been reported. Rivers and streams are dry, and the level of major dams has decreased as compared to the previous year (43% in 2016; 61% in 2015).

### **Limpopo**

Rainfall received was below normal and the drought continues. The veld and livestock are in poor condition while earth dams are dry. The level of major dams is low at 48% as compared to 75% of 2016.

### **Mpumalanga**

The month of August received below normal rainfall and drought continues in the province. Winter wheat under irrigation is in good condition in the high veld and summer crop farmers are preparing the land. Harvesting of sugarcane continues in the lowveld. Planted pastures are re-germinating where they had been burnt and also received some light rain. The veld condition is poor and livestock is in reasonable to poor condition. The level of major dam is low as compared to last year (50% in 2016; 75% in 2015).

### **Northern Cape**

Rainfall received was below normal but above normal in the south. Drought still prevails in most parts of the province. Wine and dry grapes are beginning to bud while the conditions of the veld and livestock are reasonable to poor. The level of major dams is lower as compared to the previous year during the same period (62% in 2016; 72% in 2015).

### **North West**

Rainfall received was below normal, and drought continues. The veld is mostly in poor condition but improved in some areas. The conditions of livestock are reasonable but poor mainly in communal areas. The level of major dams is slightly lower at 61% as compared to 62% of 2015.

### **Western Cape**

Near normal to below normal rainfall was received. Winter crops are in reasonable to good condition in most areas. The drought continues in the West Coast, Cape Winelands and Central Karoo. The level of major dams is at 62% as compared to 72% of 2015.

Information on level of dams is obtained from the Department of Water and Sanitation  
 Available: <https://www.dwa.gov.za/Hydrology/Weekly/Province.aspx>  
 Dam levels as at 2016/09/26

### III. AGRICULTURAL MARKETS

#### Major grain commodities

ABSA stated that maize prices traded lower and the weakening Rand continues to support both old and new season crop prices. Wheat prices traded lower and Production conditions look excellent in the Western Cape to support yields. Follow up rains may improve yields further to meet the crop estimate of 1 683 040 tons. Both soybean and sunflower traded lower, the shortage of soybeans, sunflower seed and canola will continue and this will benefit prices to remain high and enjoy underlying support due to the weakening Rand.

Commodity	Future Prices (2016/09/27) R/ton				
	Oct-16	Dec-16	Mar-17	May-17	Jul-17
White maize	3647.00	3677.00	3478.00	2840.00	2640.00
Yellow maize	2962.00	3010.00	2983.00	2507.00	2500.00
Wheat	4130.00	4088.00	4158.00	4258.00	4356.00
Sunflower	6010.00	6160.00	6159.00	5909.00	6010.00
Soybeans	6125.00	6010.00	5959.00	5860.00	5980.00
Sorghum	N/A	3700.00	3792.00	3400.00	3381.00

**SAGIS: 29/09/2016**

#### Livestock domestic markets

ABSA stated that beef prices remain steady supported by better demand that comes with the approaching warmer conditions, and import prices were under pressure due to the strength of the South African Rand. Beef prices are expected to follow an upward trend due to expected improvement in demand as the weather favours outdoor grilling. Mutton prices are lower due to increase in volumes of slaughter and prices are expected to peak towards the festive season. Pork prices recorded slight declines over the past week due to higher volumes slaughtered and prices are expected to pick up in the months to come as warmer temperatures encourage demand. The average poultry prices are mostly sideways, except for fresh birds which recorded slight gains and poultry prices are expected to pick up momentum as demand is expected to improve.

Producer prices for selected livestock commodities	Beef	Mutton	Pork	Poultry
Open market: Class A / Porker / Fresh whole birds (R/kg)	38.21	62.18	24.45	21.61
Open market: Class C / Baconer / Frozen whole birds (R/kg)	32.00	48.25	23.60	21.35
Contract: A2/A3* / Baconer/ IQF (*includes fifth quarter) (R/kg)	38.10	62.25	24.03	18.64
Import parity price (R/kg)	56.0	32.30	28.77	18.2
Weaner Calves / Feeder Lambs (R/kg)	20.49	30.33		

**ABSA: 27/09/2016**

**NB: Users are advised that these are just indicative prices therefore it is imperative that clients investigate their own individual basis value when marketing their products (livestock and grain).**

#### **IV. SADC REGION**

The September 2016 update issued by the Famine Early Warning System Network (FEWS-NET) indicates that while humanitarian assistance is ongoing in parts of Zimbabwe, Mozambique, Malawi, funding constraints continue to affect current coverage and is anticipated to further limit coverage in these countries after December. As a result, Crisis (IPC Phase 3) food insecurity outcomes will likely continue in parts of Zimbabwe, Madagascar, Malawi, Lesotho, and Mozambique. Some areas will experience Stressed (IPC Phase 2) outcomes, in the presence of assistance. In the absence of adequate humanitarian assistance, IPC Phase 3 outcomes are expected to continue through January in most affected countries. However areas in southern Madagascar that have experienced 2-3 seasons of consecutive drought will likely experience a surge in households experiencing Emergency (IPC Phase 4) outcomes between October and January. [The Integrated Food Security Phase Classification (IPC) is a set of standardized tools that aims at providing a "common currency" for classifying the severity and magnitude of food insecurity.]

FEWS-NET further states that in August, the Southern Africa Regional Climate Outlook Forum (SARCOF) announced a seasonal forecast for normal to above normal rainfall for most parts of the region during the October-December period, with the exception of the northern Democratic Republic of the Congo (DRC) and Tanzania, northwestern Angola, northern Mozambique, and eastern Madagascar, which are expected to receive normal to below normal rainfall during this period. During the January-March period, similar rainfall conditions are expected, except normal to below normal rainfall is expected for southern Zimbabwe and Mozambique, and northern South Africa. Staple supplies on markets in most affected countries remains limited. Food prices

continue to rise and for Mozambique and Malawi, maize prices are double both last year's and the five-year average. Even in surplus countries including Zambia and Tanzania, maize prices are higher than both last year and five-year average. However, maize prices in Zimbabwe remain relatively stable in comparison to the previous year prices and are about 30 percent above the five-year average.

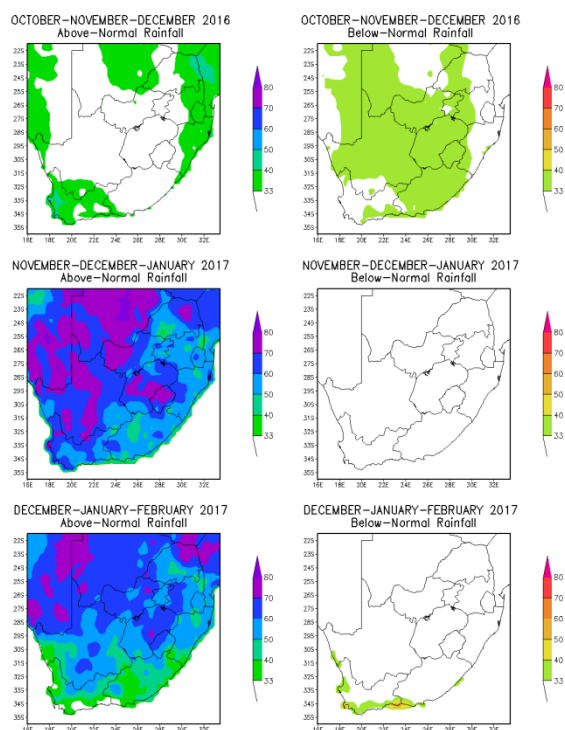
### Summary of the reports

Dry conditions persist in most areas and water restrictions are in place in some. Livestock is in reasonable to poor condition and there has been a reduction in mortality rate in the Free State and parts of KwaZulu-Natal, while in the worst-affected areas of KwaZulu-Natal, reports of high livestock mortality are still prevalent. Crops are in reasonable to poor condition. Land preparations for summer crops are under way in some areas. There is a localised outbreak of Banana Bunky Top Virus in KwaZulu-Natal. Incidents of veld fires have been reported in Free State and KwaZulu-Natal. Levels of major dams are lower than the previous year in all the provinces, while many rivers and earth dams are dry.

## V. MONTHLY CLIMATE OUTLOOK

### Seasonal Climate Watch: October 2016 to February 2017

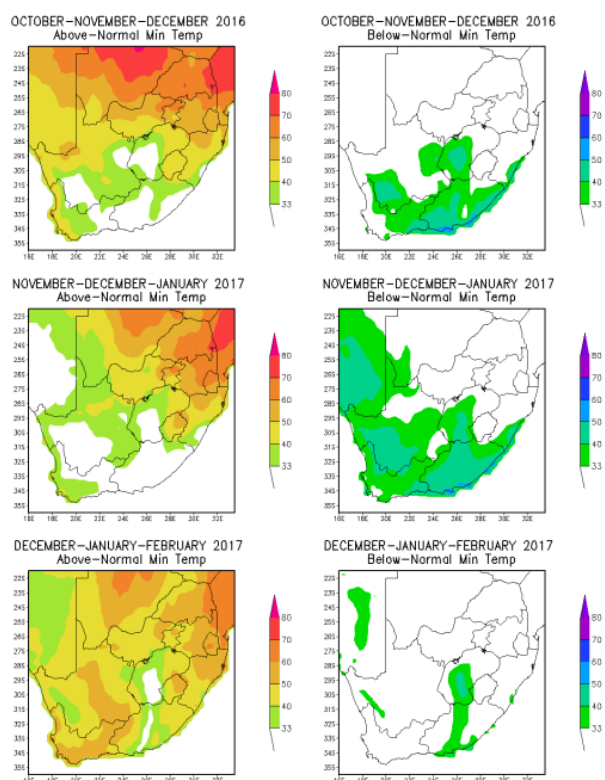
**Figure 1 - Rainfall**



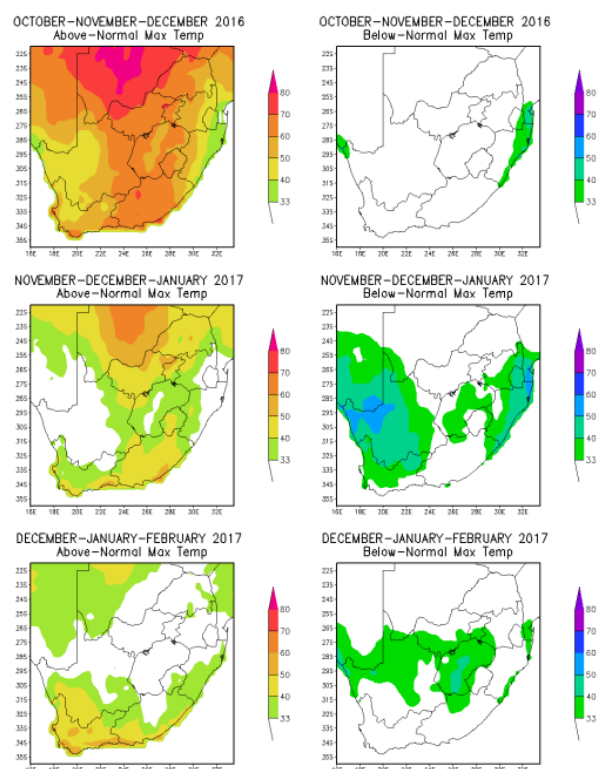
The forecasting system shows a huge uncertainty for late-spring season which is presumably an indication of a transition from dry- to wet-spell. The likelihood for above-normal rainfall is rapidly increasing over most parts of the country toward the mid-summer season.



**Figure 2 - Minimum temperatures**



**Figure 3 - Maximum temperatures**



Mostly, warmer than normal temperatures are expected for South Africa in late-spring to mid-summer. The temperature forecast is, however, inconsistent with the expected wet-spell since colder temperatures mostly tend to prevail with a good rainy season.

### How to interpret the forecast maps

- There are three sets of forecast maps: the rainfall, minimum and maximum temperatures.
- Each set consists of maps showing the probabilities for above-normal (left panels) and below normal (right panels) conditions to occur.
- For each forecast map a probability percentage is given on a scale of 0-50% and above (the colour bars on the right hand side of each map) for the rainfall or temperatures for the season, i.e. OCTOBER-NOVEMBER-DECEMBER 2016.
- The forecast probabilities indicate the **direction** of the forecast as well as the amount of **confidence** in the forecast.

For further clarification using OCTOBER-NOVEMBER-DECEMBER 2016 rainfall (**Figure 1**) as an example:

Free State, for the above normal rainfall category, is shaded in white (<33%). In the below normal rainfall category it is shaded mainly in green (33-40%).

Comparing the two:-

- above normal: white (<33%)
- below normal: green (33-40%)

The below normal rainfall category for October to December 2016 has the higher value and is therefore favoured.

### **State of Climate Drivers**

Observations show that the state of ENSO (El-Niño Southern Oscillation) is near to the border of weak La-Niña. Most forecast models' predictions indicate the likelihood of a weak La-Niña to neutral state development towards late spring through summer 2016/17.

In summation, during late-spring uncertain conditions are anticipated in terms of rainfall. Towards mid-summer the rainfall is expected to be above normal in many areas. That being said, the uncertainty level is high, with a marginal confidence. Both maximum and minimum temperatures are anticipated to be above normal in most summer rainfall areas. Farmers are encouraged to continually check updates i.e. seasonal forecasts and utilize 7 day weather forecasts for short term planning.

With the above forecast in mind, the following strategies are recommended:

## **VI. SUGGESTED STRATEGIES**

**Currently drought/ very dry conditions persist and water restrictions are in place in some areas. Farmers are advised to be conservative in their planting i.e. planting density/cultivar/area being planted.**

### **A. Rain-fed crop production**

#### **Soil choice**

- Choose suitable soil type.
  - Suitable soil and land use management practices that would control wind and water erosion in cultivated lands are suggested.
  - Avoid marginal soils - shallow and low water holding capacity soils.
  - Rather plant in soils with high water holding capacity or with shallow water table.
- Ascertain that the soil profile has enough water when planting commences.
- Roughen the soil surface to enhance rain water penetration and reduce runoff.
- Minimise compaction by reducing the passing of heavy machinery in the field.
- Add organic material to improve soil structure.

#### **Land preparation**

- Avoid where possible soils with pronounced plough pans.
- Consider practicing conservation agriculture such as zero or minimum tillage.
- Cover soil with organic matter or cover crops.
- Practice crop rotation.
- Do not expand land under crop production unnecessarily.
- Prioritise fallow land.

#### **Crop choice and planting**

- Choose drought resistant cultivars.
- Provide flexibility and diversification.
- Stay within the normal planting window and follow the weather and climate forecast regularly so as to make informed decisions.



- Consider staggered planting - spreading over weeks.
- Do not experiment with new and unknown cultivars and also avoid unnecessary capital investments.
- Consider intercropping for improved soil structure and pest/diseases control.
- Planting in a controlled environment (e.g. green house) is advisable where possible.

### **Crop management**

- Adjust planting density accordingly.
- Consider mulching to minimize evaporation.
- Control weeds regularly.
- Consider a conservative fertilizing strategy during dry conditions.
- Consider organic fertilization.
- Scout for pests and diseases regularly and control where necessary.
- Practice water harvesting techniques e.g. construction of basins, contours, ridges.

### **B. Irrigation farming**

#### **The current drought is having a negative impact on irrigation.**

- Remove all weeds containing seeds, but keep other vegetative rests on the land because that will reduce evaporation.
- Check and repair all tools and machinery especially where there are water leaks.
- Obtain the relevant seeds to be planted considering the climate forecast.
- Be aware of the state of regional water resources and whether it will be adequate for irrigation.
- Irrigate with the correct amount, never over-irrigate.
- Timing of irrigation - rather late afternoon or early evening to reduce evaporation.
- Be aware of current and expected weather conditions and re-look at the area to be planted as there are already water restrictions in some areas.
- Manage irrigation so that the plant receives water only when needed.
- Consider using drip irrigation as it saves water by allowing it to drip slowly straight to the roots.
- Avoid over irrigation because that can create problems e.g. water logging and diseases.
- **Adhere to water restrictions when issued.**

### **C. Domestic and home garden water use**

- Conserve existing water supplies.
- Eradicate water weeds.
- Limit water waste and losses.
- Repair leaking pipes.
- Re-use water and retain high quality.
- Harvest water during rainy days.

### **D. Stock farming**

- Keep stocking rates conservative and even lower to protect grazing.
- Never exceed carrying capacity of plant associations.
- Provide lots of drinking points where possible.
- Provide additional fodder and enhance nutritional value of dry grazing/feed with licks:
  - Phosphorous deficiency is a major problem.

- Licks should (in most cases) provide:
  - Phosphorous.
  - Urea (to help with the break-down of dry vegetation).
  - Salt.
  - Molasses.
- Deficiencies differ according to vegetation composition/soil properties/climate.
- Analysis of vegetation/soil samples can benefit the decision for supplement composition.
- Sell mature, marketable animals (to help prevent overstocking/ overgrazing).
- If grazing is in danger, herd animals into pens where different animals can be segregated and fed separately.

#### **E. Grazing**

- Subdivide your grazing area into camps of homogeneous units (in terms of species composition, slope, aspect, rainfall, temperature, soil and other factors) to minimise area selective grazing as well as to provide for the application of animal management and veld management practises such as resting and burning.
- Determine the carrying capacity of different plant associations.
- Calculate the stocking rate of each, and then decide the best ratios of large and small animals, and of grazers or browsers.
- Provide periodic full growing-season rests (in certain grazing areas) to allow veld vigour recovery in order to maintain veld productivity at a high level as well as to maintain the vigour of the preferred species.
- Do not overstock at any time to avoid overgrazing.
- Eradicate invader plants.
- Periodically reassess the grazing and feed available for the next few months, and start planning in advance.
- Spread water points evenly.

#### **F. Pests and diseases**

##### **Crops**

- Fruit crop farmers should regularly scout for pests and diseases and contact the local agricultural office for advice on best control measures. Farmers should further implement phytosanitary measures.
- Irrigation farmers should monitor for pests and diseases especially those associated with humid and hot conditions.

##### **Livestock**

- Follow the vaccine routine and consult with the local veterinarian.

#### **G. Veld fires**

The provinces and farmers are advised to maintain firebreaks in all areas. An owner of the land who is obliged to prepare and maintain a firebreak must ensure that, with due regard to the weather, climate, terrain and vegetation of the area, the following is taken care of in terms of installing firebreaks (Chapter 4 of the National Veld and Forest Fire Act No. 101 of 1998):

- It has to be wide enough and long enough to have a reasonable chance of preventing a veld fire from spreading to or from neighbouring land.
- It does not cause soil erosion and

- It is reasonably free of inflammable material capable of carrying a veld fire across it.
- Firebreaks may be temporary or permanent.
- Firebreaks should consist of fire-resistant vegetation, inflammable materials, bare ground or a combination of these.
- Firebreaks must be located in such a way as to minimize risk to the resources being protected.
- Erosion control measures must be installed at the firebreak.

**Firebreaks can be made through the following methods:**

- Mineral earth firebreak:
  - Through ploughing, grading, other earth movement.
- Use of herbicides.
- Use animals to overgraze specifically to minimise fuel.
- Strategic placement of burned areas,
  - Not to be done on days with fire hazard (windy and dry/hot).
- Plant fire resistant plants.
- Plant species selected for vegetated firebreaks must be non-invasive and capable of retarding the spread of fire.

**Maintaining firebreaks:**

- Mow, disk, or graze vegetative firebreaks to avoid a build-up of excess litter and to control weeds.
- Inspect all firebreaks for woody materials.
- Inspect firebreaks at least annually and rework bare ground firebreaks as necessary.
- Repair erosion control measures as necessary.
- Access by vehicles or people must also be controlled.
- Bare ground firebreaks, which are no longer needed must be stabilized i.e.
  - Sow grass.
  - Mulch.

**What to do when conditions favorable for veld fire are forecast:**

- Prohibit fires in the open air during periods of high fire hazard and establish a fire control committee.
- To control fires, an alarm system, firefighting teams, and beaters must be organized in advance and plans prepared.
- Livestock should be moved out of grazing land to a safe place.

**What to do during a veld fire:**

- Water is generally not available in sufficient quantities or at adequate pressure for the control of major fires; however, sand or other loose mineral soil material can be an effective method of control.
- Tree branches can be used to beat fire.

**H. Heat stress – bad for productivity**

- Signs of heat stress:  
Bunching in shade, high respiratory rates, open mouth breathing.
- What to do:
  - Offer shade.
  - Offer water- keep good quality water in front of animals.
  - Wet with sprinklers/fire hose.

- Water ground.
- Avoid overworking animals.
- Control insects. Biting insects, such as flies can further stress livestock and interrupt their cooling. If pastures or buildings draw insects to livestock during times of extreme heat, provide proper insecticides or considering relocating your livestock.

### **Poultry**

- Provide cool, clean, quality drinking water to your poultry. Water will help keep your birds cool.
- Always make sure your poultry is in a well-ventilated area in which there is nothing to obstruct the airflow.
- Provide feed during the coolest part of the day.
- Supplement drinking water with electrolytes.
- Reduce the number of birds kept in a house or in an area.
- Avoid excessive activity during the hottest part of the day.

## **I. Severe thunderstorms/flash floods**

Building resilience:

- Identify resources/facilities within 50km that can be utilized and can be of help during emergencies.
- Be sure to have legal and adequate markings to identify your livestock.
- Stay well informed about livestock in your possession and conduct an inventory after the event.
- Monitor television and local radio stations for information regarding severe storms/flash floods in your region.
- Identify natural or built areas/shelters where animals can be kept during such conditions
  - Sufficient height to be above water level,
  - Sheltered from strong winds and wetness,
- Restrict access to high-risk areas such as low lying fields close to streams.
- Store food in safe areas sheltered from wetness to be used after storms/flash floods.
- Keep pesticides and other chemicals in areas where water will not be contaminated during extreme rainfall/storm events.
- Inspect/repair farm dams
  - Before rainy season, after each event.

## **J. Wind Erosion/ Water Erosion**

**Many areas have low biomass associated with the drought, and as a result there is potential for wind/ water erosion. Erosion reduces agricultural production potential.**

Preventative measures for wind/ water erosion:

- Do not burn vegetation.
- Keep vegetation cover – e.g. shrubs, grass, small trees; a cover crop may be used to increase organic material and increase soil structure.
- Plant permanent vegetation e.g. perennial grasses where possible.

- Maintain any remaining vegetative cover, e.g. maize stubble during winter wheat sowing, as it can act as blanket, trap eroded particles and reduce wind speed at ground level.
- Plant evergreen trees growing densely and perpendicular to typical wind direction during winter and spring as wind breaks.
- Increase water infiltration by correct management of soil – e.g. reduce frequency of plough and use minimum tillage.
- Mulch: to increase infiltration, reduce evaporation, and reduce raindrop impact as well as wind erosion.
- Construct retaining walls around gardens.
- Avoid soil compaction by roughening the soil surface
  - Furrows and tillage ridges can trap loose soil
- Farm along contours as this reduces slope lengths
- Prevent over grazing.
- Practice conservation farming
  - Maximize retention of crop residues.

Drought continues in the provinces. The seasonal forecast anticipates uncertain conditions during late spring in terms of rainfall. Towards mid-summer the rainfall is expected to be above normal but the level of uncertainty remains high with a marginal confidence. With the seasonal forecast in mind, and the current drought, farmers are advised to continue to conserve water and other resources in accordance with the Conservation of Agricultural Resources Act 1983, (Act No. 43 of 1983).

Dryland summer crop farmers should wait for sufficient moisture before planting and stay within the normal planting window. They are also advised to be conservative in their planting i.e. planting density/cultivar/area being planted. In addition they should consider drought tolerant cultivars including sorghum and maize where possible. Irrigation farmers should reduce the planting area in line with water restrictions in their areas. Farmers should follow the weather and climate forecast regularly so as to make informed decisions.

Livestock farmers are advised to continue to have precautionary measures in place. These include provision of additional feed such as relevant licks, livestock reduction in accordance with available grazing, provision of enough water points in the farm where possible, as well as shelter during bad weather conditions. The risk remains high for conditions conducive for veld fires as the veld is dry in areas with sufficient biomass. Farmers are encouraged to maintain firebreaks and adhere to veld fire warnings. Episodes of localized flooding resulting from thunderstorms are likely and measures should be in place. Heat waves have been reported in some areas and are likely to reoccur. Therefore measures to combat these should be in place. Farmers are encouraged to implement measures provided in the early warning information issued.




**The users are urged to continuously monitor, evaluate, report and attend to current Disaster Risk Reduction issues. It is very important and mandatory for farming communities to always implement disaster risk measures and maintain good farming practices.**

The climate advisory should be disseminated widely. Users are advised to be on the look-out and act on the daily extreme weather warnings as well as the monthly advisory. Information sharing groups are encouraged especially among farming communities for sustainable development. In

general, effective communication among all stakeholders in the sector will enhance effective implementation of risk reduction measures/early warning services. It is the responsibility of farmers to implement disaster risk measures.

The Disaster Management Act 2002, (Act No. 57 of 2002) urges Provinces, individuals and farmers, to assess and prevent or reduce the risk of disasters using early warning information. The current advisory can be accessed from the following websites: [www.daff.gov.za](http://www.daff.gov.za) and [www.agis.agric.za](http://www.agis.agric.za).

**For more information contact:-**

<p>DAFF, Directorate: Climate Change and Disaster Management Private Bag X93 Pretoria 0001 Tel: 012 309 5722/23; Fax: 012 309 5878 Email: <a href="mailto:MittaA@daff.gov.za">MittaA@daff.gov.za</a></p>  <p>agriculture, forestry &amp; fisheries <small>Department: Agriculture, Forestry and Fisheries REPUBLIC OF SOUTH AFRICA</small></p>	<p>SAWS: Private Bag X097 Pretoria 0001 Tel: +27 (0) 12 367 6000 Fax: +27 (0) 12 367 6200 <a href="http://www.weathersa.co.za">http://www.weathersa.co.za</a></p>  <p>South African Weather Service</p>	<p>ARC: Institute for Soil, Climate and Water Private Bag X79 Pretoria 0001 Tel: 012 310 2500 Fax: 012 323 1157 Email: <a href="mailto:iscwinfo@arc.agric.za">iscwinfo@arc.agric.za</a>, <a href="http://www.arc.agric.za">http://www.arc.agric.za</a></p>  <p>ARC • LNR <i>Excellence in Research and Development</i></p>
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