



## National Agro-meteorological Committee (NAC) Advisory on the 2015 winter season Statement from Climate Change and Disaster Management 11 DAFF 2015

27 July 2015

In the light of the seasonal outlook as produced by the South African Weather Service (SAWS) and other centres, 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 radio stations and farmers' days in disseminating the information.**

### I. CURRENT CONDITIONS

Figure 1

Percentage of Normal Rainfall for May 2015  
(Based on preliminary data. Normal period 1981-2010)

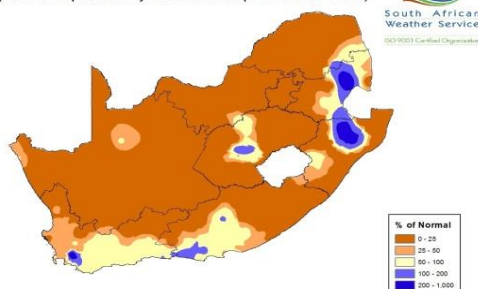


Figure 2

Percentage of Normal Rainfall for June 2015  
(Based on preliminary data. Normal period 1981-2010)

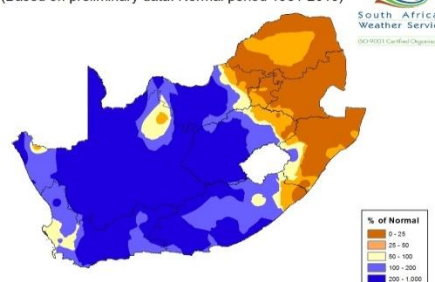


Figure 3

% of Normal rainfall for 11-20 July 2015  
(based on preliminary data, Normal Period 1961-2010)

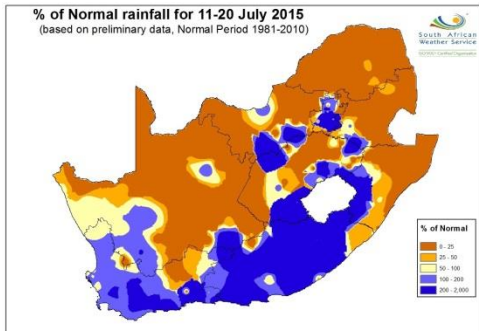
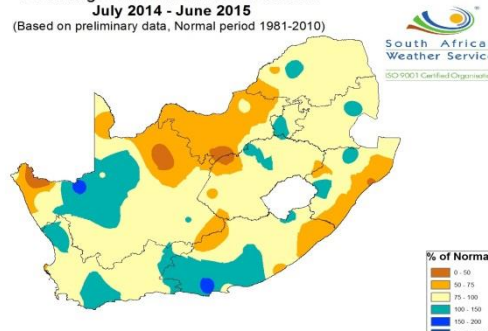


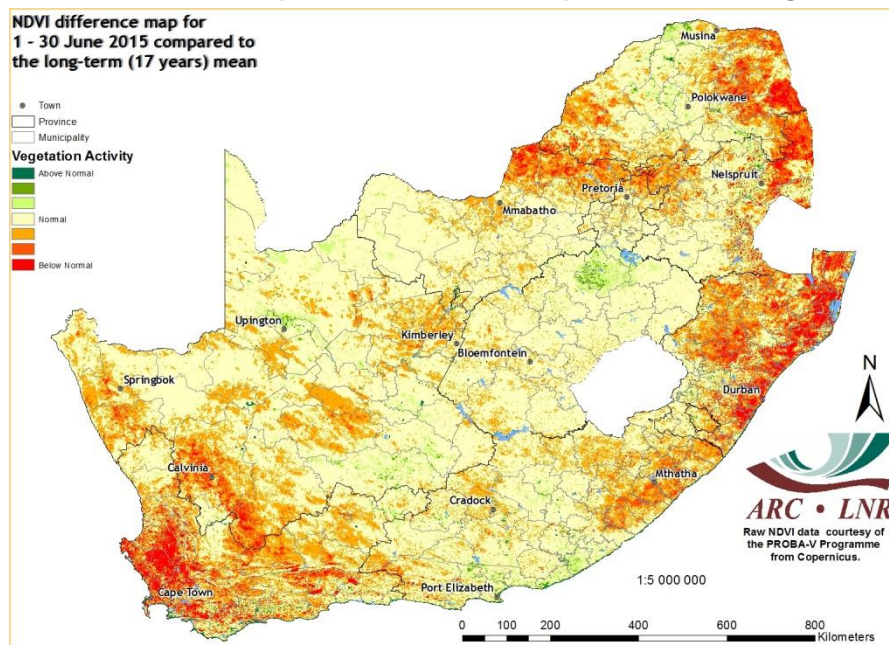
Figure 4

Percentage of normal rainfall for season  
July 2014 - June 2015  
(Based on preliminary data, Normal period 1981-2010)



During May, below normal rainfall was received with patches of above normal rainfall mainly in Mpumalanga and KwaZulu-Natal (**Figure 1**). In June rainfall increased, resulting in above normal rainfall over the central and western parts of the country while the eastern parts continued to receive below normal rainfall (**Figure 2**). The second ten days of July received above normal rainfall mainly in the Eastern Cape and Western Cape but below normal elsewhere (**Figure 3**). For the season July 2014 – June 2015, near normal to below normal rainfall was received in many areas with patches of above normal rainfall in the Northern Cape, Western Cape and Eastern Cape Provinces (**Figure 4**).

## NDVI difference map for June 2015 compared to the long-term mean



Below normal vegetation activity is evident mainly over the Western Cape, KwaZulu-Natal, eastern parts of Limpopo and Mpumalanga, and north-eastern parts of North West. In other areas of the country the vegetation activity is normal.

## II. CONDITIONS IN THE PROVINCES DURING JUNE 2015

### Eastern Cape

Above normal rainfall was received in parts of Sarah Baartman District, while some areas of OR Tambo District and the northern parts of the province were very dry. Amathole District reported good to very good crop conditions while Sarah Baartman had fair to very good crop conditions. Very poor crop conditions were reported in parts of Chris Hani District and OR Tambo. Poor condition of livestock was reported in some areas of OR Tambo and Joe Gqabi. Furthermore, good livestock condition was reported in most of Chris Hani and also in parts of Amathole. Sarah Baartman had mainly fair to good livestock conditions. Almost all districts reported good to very good pasture conditions. Poor rangeland conditions were reported at Joe Gqabi and some areas of OR Tambo. The rest of the province had mainly reasonable pasture conditions. The average level of major dams decreased to 77% in 2015 as compared to 80% of 2014.

### Free State

Below normal rainfall and very cold conditions have been reported. The central, western, northern and eastern parts of the province remain dry with some signs of drought. Harvesting of maize is almost complete throughout the province but yields are significantly low due to the dry conditions

experienced during the 2014/2015 growing season. The condition of natural veld is reasonable to poor as well as the livestock in general. Veld fires have been reported in Koppies, Kestell and Harrismith. The level of major dams has decreased as compared to previous year (78% in 2015; 90% in 2014).

### **Gauteng**

Dry conditions persisted in the province. Vegetables were damaged by frost in some areas and the general condition of the veld and pastures is average to poor. The body condition of livestock in communal areas is gradually deteriorating. The farm dams have dried but very low in some areas. The major dams i.e. Vaal, Roodeplaat and Bronkhorstspuit are not providing water for small scale farmers for both irrigation and livestock consumption. The level of major dams is lower at 90% as compared to 97% of 2014 during the same period.

### **KwaZulu-Natal**

In June very little to no rain fell over the province. The drought monitor for June indicates "Severe" drought conditions continue in Zululand, UThungulu, UMzinyathi, uMkhanyakude, Amajuba, UMgungundlovu, UThukela, Ugu and Harry Gwala Districts. EThekweni, ILembe remain in an "Emergency" drought status. Harvesting of maize continues although yields are anticipated to be lower than last season. Rye grass pasture growth has slowed while the veld has dried off. Where controlled management is practised the veld condition is fair to good. Livestock is in fair to good condition but very poor in some areas. Mortalities were also reported in some areas. There were veld fires in some districts. Farm dam levels for livestock watering and irrigation in all districts remain at critically low levels. Provincial dams are down 17% on last year's levels (66% in 2015; 83% in 2014); however they are now at their lowest levels in 13 years. Water restrictions and rationing have been implemented in all districts.

### **Limpopo**

The entire province received below normal rainfall. Such a trend was also observed in April and May 2015. Temperatures were normal to above normal. General conditions on the grazing land are poor in communal areas but fair in commercial areas. Livestock condition is deteriorating especially at communal areas. Due to poor summer rainfall, the farm dams and rivers are drying up. The average level of major dams is at 81% in 2015 as compared to 90% of 2014.

### **Mpumalanga**

**NIL REPORT.**

### **Northern Cape**

Most parts received normal to above normal rainfall. Generally, the veld and livestock condition is fair to good. The conditions of vegetables are good, whereas wine and dry grapes are in winter rest. In some areas there are not enough boreholes to allow distribution of animals. The level of major dams is lower at 81% than 94% of 2014 during the same period.

### **North West**

Below normal rainfall was received. Farmers are harvesting although most of the production has been affected by drought. The veld has deteriorated and signs of drought are becoming visible on communal livestock. Most dam levels have drastically dropped due to the current drought. The level of major dams is low at 63% as compared to 79% of 2014.

### **Western Cape**

Above normal rainfall was received. The winter cereal production regions in the Swartland area of the West Coast District and the Rûens have gone through a rough period of below normal rainfall

during April and May, resulting in poor growing conditions for crop production. The Matzikama and Cederberg areas received good rains while extreme cold conditions resulted in livestock mortalities. Veld conditions remained poor and farmers continued to supply supplementary feeding to livestock in order to maintain condition. The level of dams has decreased compared to the previous year (49% in 2015; 89% in 2014).

### III. AGRICULTURAL MARKETS

#### **Major grain commodities**

According to FNB Agri-Weekly both yellow and white maize prices are higher due to strong export demand. Wheat prices remained firm and prices are expected to come under pressure due to abundant world supplies. Prices were mixed in the oilseed market. However prices may rise due to lower expected crop compared to last year.

#### **Domestic prices per Safex (R/t)**

	<b>Futures prices as at (2015/07/21)</b>				
<b>Commodity</b>	2015/07	2015/09	2015/12	2016/03	2016/05
White maize	R3235.00/t	R3264.00/t	R3328.00/t	R3294.00/t	R2695.00/t
Yellow maize	R2782.00/t	R2796.00/t	R2819.00/t	R2790.00/t	R2505.00/t
Wheat	R3985.00/t	R3987.00/t	R3900.00/t	R3955.00/t	N/a
Sunflower	R5447.00/t	R5522.00/t	R5534.00/t	R5200.00/t	R5278.00/t
Soybeans	R4885.00/t	R4942.00/t	R5010.00/t	R5050.00/t	R4965.00/t
Sorghum	N/a	R3100.00/t	R3000.00/t	N/a	N/a

**SAGIS: 2015/07/23**

#### **Livestock domestic markets**

FNB stated that beef prices maintained a sideways trend across most categories with the exception of Class C beef which gained due to limited supplies. It is expected that weather will be critical in the next few months leading to summer. Early rains should boost soil moisture resulting in rapid pasture regrowth thereby encouraging farmers to hold on to their cattle and reducing availability on the market. Mutton prices were mixed during midmonth with the mutton market continuing to post good gains due to limited supplies. Prices are expected to rebound as warm weather returns. Pork prices trended sideways to lower with baconers coming under pressure due to softer demand during midmonth. Prices are expected to show limited upside potential until warm weather returns. Poultry trends lower due to limited demand and increased availability; it is expected that prices will remain under pressure in the short term.

<b>Producer prices for selected livestock commodities</b>	<b>Beef</b>	<b>Mutton</b>	<b>Pork</b>	<b>Poultry</b>
Open market: Class A / Porker / Fresh whole birds (R/kg)	34.41	52.34	24.55	21.17
Open market: Class C / Baconer / Frozen whole birds (R/kg)	27.43	40.65	20.65	20.34
Contract: A2/A3* / Baconer/ IQF (*includes fifth quarter) (R/kg)	33.91	54.69	22.15	18.32
Import parity price (R/kg)	37.65	30.11	21.13	16.72
Weaner Calves / Feeder Lambs (R/kg)	20.34	24.56		

**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 July to December 2015 FEWS-NET report indicated that with preliminary production estimates showing regional harvests<sup>1</sup> to be below both last year and five year averages by 22 and 12 percent, respectively, household cereal availability is expected to be more restricted this marketing year than the previous year due to poor 2014/15 rainfall performance. Most households in the drought-affected parts of Zimbabwe, Malawi, Botswana, Lesotho, Swaziland, and Namibia will rely on market purchases from July through December due to very little or no harvests.

During a typical year, several countries in the region rely on cereal imports from neighboring countries. This marketing year, South Africa will remain the main regional cereal exporter. South Africa's 2014/15 cereal harvest is estimated at 9.8 million MT, which is a 29 and 22 percent decrease from last year and the five-year average. However, due to large carryover stocks from last year's production (estimated at 2.1 million MT), South Africa is still expected to export approximately 0.79 MT during the current marketing year. In the absence of above average international demand, South Africa can sufficiently meet cereal requirements of structurally deficit countries, including Botswana, Namibia, Lesotho, and Swaziland. Cereal prices are likely to remain high following observed price increases for yellow and white maize of 24 and 30 percent above the five-year average, respectively, in April.

Zambia is also a large supplier of maize grain within the region. The country also experienced a decrease in cereal production by approximately 25 and 15 percent from last year and five-year average. However, due to significant carryover stock from last year's production, Zambia is able to sell above 800,000 MT this marketing season and will likely be the biggest supplier of non-GMO maize to Zimbabwe, which is facing a maize deficit of more than 900,000 MT. Malawi is also facing significant cereal deficits due to drought conditions this year. Malawi, along with the Democratic Republic of Congo (DRC), and Angola are also likely to rely on informal Zambian maize grain imports between July and December.

The region has varying humanitarian assistance needs with parts of Zimbabwe, Malawi, Lesotho, and Madagascar expected to be Stressed (IPC Phase 2) and in Crisis (IPC Phase 3) from July through September. Food security conditions are expected to deteriorate and households many of these countries will be in Crisis (IPC Phase 3) from October through December, in the absence of external assistance. The ongoing vulnerability and food security assessments in the region will determine the number of people facing acute food insecurity in the 2015/16 consumption period and the level of humanitarian assistance that may be required. Nonetheless, preliminary field observations in Malawi, Zimbabwe, and Madagascar indicate that food insecure populations will be above average this year.

#### **Summary of the reports**

In June rainfall was above normal over the central and western parts of the country but below normal elsewhere. The veld is in reasonable to poor condition while livestock is generally in

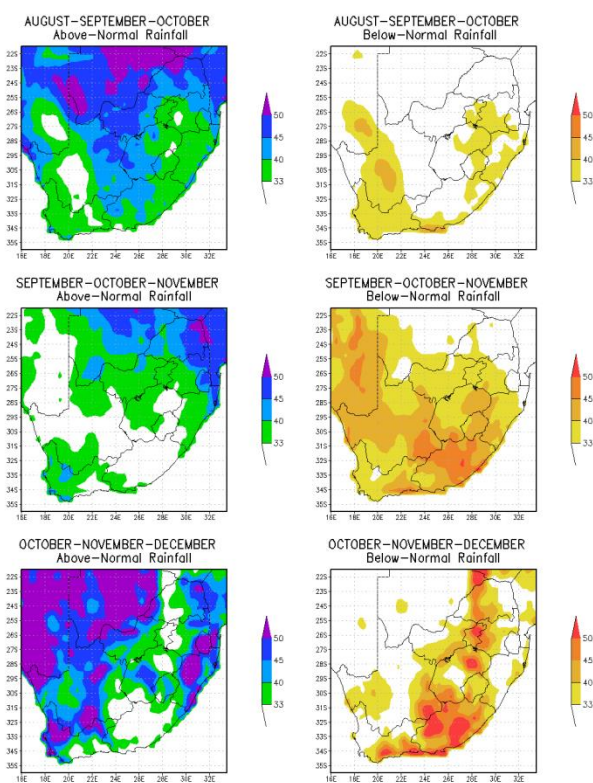


reasonable condition. Drought has been reported in KwaZulu-Natal and in parts of the Free State and North West. Other provinces that continue to report very dry conditions are Limpopo and Mpumalanga. There were livestock mortalities in KwaZulu-Natal due to drought and in the Western Cape due to very cold conditions. Veld fires were reported in parts of the Free State and KwaZulu-Natal whereas in Gauteng frost damaged vegetables. Overall, the level of dams is lower as compared to 2014 during the same period. Water restrictions have been implemented in all districts of KwaZulu-Natal. Over SADC household cereal availability is expected to be more restricted this marketing year than the previous year due to poor 2014/15 rainfall performance. Most households in the drought-affected parts of Zimbabwe, Malawi, Botswana, Lesotho, Swaziland, and Namibia will rely on market purchases from July through December due to very little or no harvests.

## V. MONTHLY CLIMATE OUTLOOK

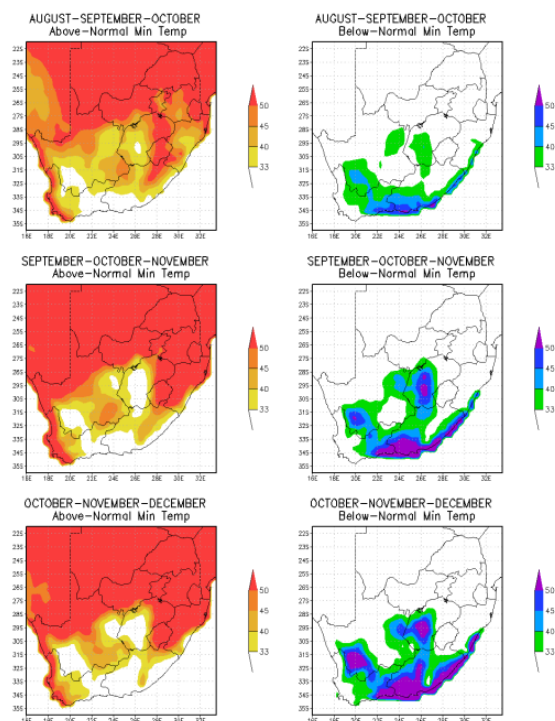
### Seasonal Climate Watch: August to December 2015

**Figure 1- Rainfall**

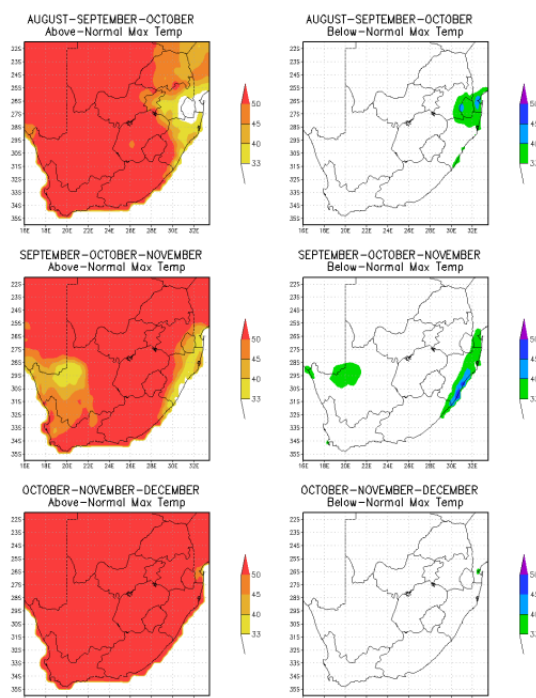


The forecasting system indicates above-normal rainfall conditions for most parts of the country albeit relatively low probabilities throughout late winter. Moving towards early and mid-spring, there is still an indication of above-normal rainfall although the forecast with stronger probabilities, more significantly for the north eastern parts of South Africa.

**Figure 2 - Minimum temperatures**



**Figure 3 - Maximum temperatures**



The forecasting system indicates generally above-normal temperatures across the country through late-winter towards mid-spring.

### 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. AUGUST-SEPTEMBER-OCTOBER 2015.
- The forecast probabilities indicate the **direction** of the forecast as well as the amount of **confidence** in the forecast.

For further clarification using AUGUST-SEPTEMBER-OCTOBER 2015 rainfall (**Figure 1**) as an example:

North West Province, for the above normal rainfall category, is shaded in light blue (**40-45%**) and dark blue (**45-50%**). In the below normal rainfall category it is shaded in white (**<33%**).

Comparing the two:-

- above normal: light and dark blue (40-45% and 45-50%),
- below normal: white (<33%)

The above normal rainfall for August to October 2015 has higher values and is therefore favoured. This means that rainfall is anticipated to be above normal over the North West province during the period August to October 2015.

### **State of Climate Drivers**

Observations show that ENSO is currently at a moderate El-Niño condition. Most of the forecast model's predictions indicate the strengthening of El Niño condition through the austral winter to spring seasons.

In summation, both rainfall and temperatures are anticipated to be above normal over most parts throughout late winter into spring. 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:**

### **A. Crop management**

- Adjust planting density accordingly.
- Consider mulching to minimise evaporation.
- Always eradicate weeds.
- Consider a conservative fertilizing strategy during dry conditions.
- Consider organic fertilization.
- Wheat: The strategy proposed is to scout the plants regularly, correctly identify any pests or diseases and make informed decisions regarding reaction.
- Prune trees properly to avoid blocking air movement. The removal of low hanging, dense branches is a must.
- Using white paint on trunks of fruits tree reduces winter trunk damage.
- Use overhead sprinkler irrigation.

### **B. Irrigation farming**

- 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.
- Irrigate when it is cool to avoid evapotranspiration.
- 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.



- **Adhere to water restrictions when issued.**

#### **D. Stock farming (very important)**

For most of the country, if the correct farming practices have been followed and stocking rates have been kept in balance with carrying capacity, animals should be in relatively good condition.

- Never exceed carrying capacity of plant associations and densities – keep conservative stocking rates even during favourable climate conditions.
- Provide lots of drinking points.
- 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).
- If grazing is in danger, herd animals into pens where different animals can be segregated and fed separately.
- Follow the vaccine routine and consult with the local veterinarian.

#### **E. Grazing (very important)**

- 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.
- Provide suitable licks to make coarse, dry grasses more palatable.
- During drought:
  - Accelerate rotational grazing,
  - Identify and use areas that were not grazed/grazed less intensively last year,
  - Wean calves early – lactating cows consume much more,
  - Close water points in over-used areas,
  - Provide lots of drinking points.

## **F. Veld fires**

The provinces and farmers are advised to construct firebreaks in summer rainfall 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 and 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 veldfire 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 veldfire**

- 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.

#### **G. Cold spells (snowfall & frost) (Very important)**

When temperatures plunge below zero, livestock and crops need to be given extra attention. Prevention is key in dealing with hypothermia, and other cold weather injuries in livestock and crops. Following are a number of concerns and recommendations:

##### **Livestock:**

- Hypothermia and dehydration are a serious concern in animals during cold and wet conditions. Wind-chill also adds greatly to the cold-stress for animals.
- Livestock should be provided with wind-break, roof shelter and monitored for signs of discomfort (extensive shivering, weakness, lethargy, etc.)
- It is very important that livestock be provided with extra hay/forage/feed to double the calories for normal body heat maintenance during extremely cold conditions.
- It is critical that livestock have access to drinking water. Usual water sources may freeze in low temperatures and dehydration becomes a life-threatening factor. In general, livestock tend to drink less water in extremely cold conditions.
- Special attention should be paid to very young and old animals because they may be less able to tolerate temperature extremes.
- Do not shear Angora goats. Also, take extra time to observe livestock, looking for early sign of diseases and injuries.
- Severe cold-weather injuries or death primarily occur in the very young or in animals that are already debilitated.
- Cases of cold weather-related sudden death in calves often result when cattle are suffering from undetected infection, particularly pneumonia.
- Livestock suffering from frostbite don't exhibit pain. It may be up to two weeks before the injury becomes evident as freeze-damaged tissue starts to slough away. At that point, the injury should be treated as an open wound and a veterinarian should be consulted.

##### **Crops:**

- Prune out the lower portions of windbreaks to allow air to pass through to avoid the formation of a frost pocket.
- Wrapping the trunks with materials such as newspaper, cardboard, aluminium foil will prevent much of frost damage.
- With more severe frosts, canopy death can occur and trunk coverings need to extend up beyond the graft union, so the tree can reshoot from undamaged buds above the graft once the wraps are removed.
- Use heating devices such as orchard heaters to raise temperatures in plantings.

Although rainfall has been received in winter rainfall areas, some places experienced poor crop growing conditions. Summer rainfall areas remain dry with water restrictions being implemented in some provinces. Drought has been reported in North West, Free State and KwaZulu-Natal. Other provinces reporting very dry conditions are Limpopo and Mpumalanga. The seasonal forecast favors above normal rainfall in most areas although the probability is low towards the end of winter. Temperatures are also anticipated to be above normal. With the seasonal forecast in mind, and current conditions in provinces, winter crop farmers are advised to conserve water and other resources in accordance with the Conservation of Agricultural Resources Act (Act No. 43 of 1983). Livestock should be kept in line with carrying capacity of the veld and should be provided

with additional feed including licks to give sufficient nutrition. Veld fires have been reported in some provinces; farmers are encouraged to construct firebreaks in summer rainfall areas and adhere to veld fire warnings. Cold front activity is likely to continue; hence isolated incidents of flooding are possible in winter rainfall areas and very cold conditions in most areas of the country. Therefore measures for these should be maintained i.e. proper drainage systems, relocation of livestock and movable assets to a safe place.




**The users are urged to continuously monitor, evaluate, report and attend to current Disaster Risk 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 advisory update next month. 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 (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 Department: Agriculture, Forestry and Fisheries REPUBLIC OF SOUTH AFRICA</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 Excellence in Research and Development</p>
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