



agriculture, forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

National Agro-meteorological Committee (NAC) Advisory on the 2015 winter season Statement from Climate Change and Disaster Management 10 DAFF 2015

23 June 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

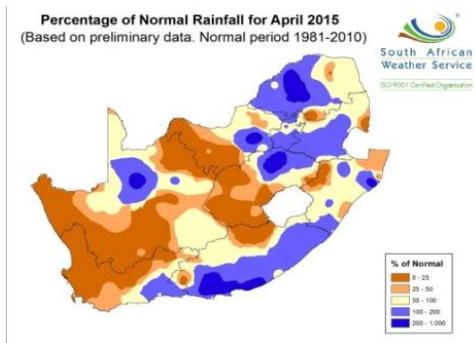


Figure 2

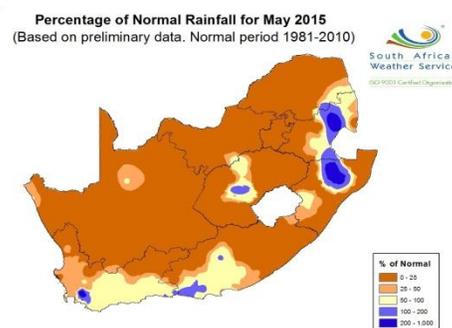


Figure 3

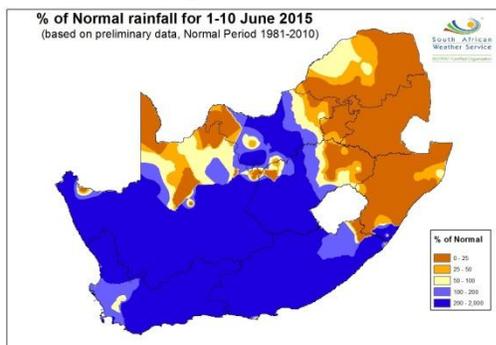
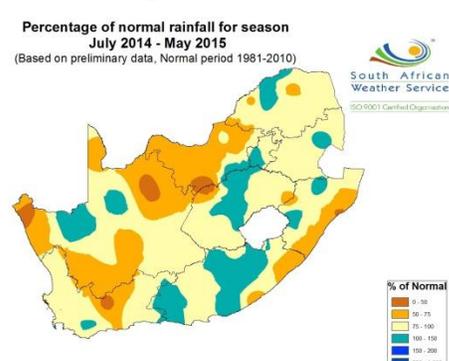
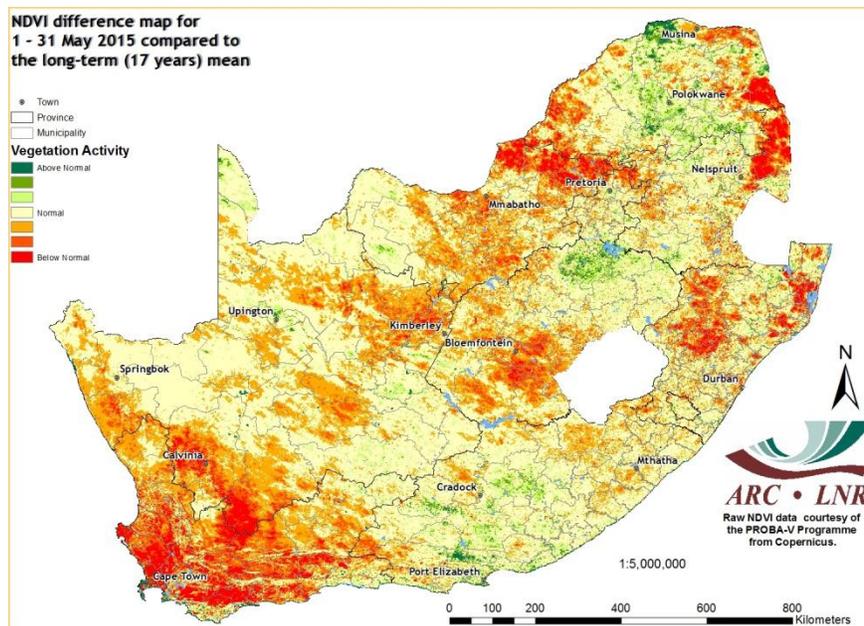


Figure 4



During the month of April, rainfall was near normal to above normal but below normal in the central and western parts of the country (**Figure 1**). The rainfall decreased in all areas in May to below normal with patches of above normal mainly in KwaZulu-Natal and Mpumalanga (**Figure 2**). The first ten days of June received above normal rainfall but below normal in the eastern parts of the country and parts of the Northern Cape (**Figure 3**). The season July 2014 – May 2015 received mainly near normal rainfall (**Figure 4**), but below normal in parts of North West, Northern Cape and KwaZulu-Natal. There were patches of above normal rainfall mainly in Free State and Eastern Cape.

NDVI difference map for May 2015 compared to long-term mean



Vegetation activity is low mainly in the Western Cape, North West, parts of KwaZulu-Natal and Northern Cape, eastern parts of Limpopo and Mpumalanga, and central Free State. In other areas vegetation is normal.

II. CONDITIONS IN THE PROVINCES DURING MAY 2015

Eastern Cape

The month of May was cooler on average and the province received below normal rainfall. Crop conditions range from fair to good in Alfred Nzo, Chris Hani and Sarah Baartman Districts. In Joe Gqabi, Amathole and OR Tambo crops are reported to be in poor to good condition. Livestock in general is reported to still have a lot of green to graze on and as a result the condition is fair to good in various areas. Cultivated pastures are in good condition. The rangeland is reported to be in poor to good condition. Average dam levels decreased from 82% of 2014 to 78% of 2015 during the same period.

Free State

Very cold conditions have been reported especially in Frankfort, Wepener and Fauresmith with below normal rainfall in the province. The central and western parts remain very dry but there is an improvement in the veld condition. Harvesting of maize has started throughout the province but yield is significantly low due to the dry conditions experienced during the past summer. The condition of natural veld is reasonable but wilted due to frost; however livestock condition is fair in

general. Veld fire was reported in Sasolburg that resulted in multiple car collisions. Dam levels have decreased as compared to the previous year (92% in 2014; 80% in 2015).

Gauteng

Rainfall received was below normal and the general condition of the veld and pastures is average to poor. The body condition of livestock ranges from poor to average. Maize and most crops did not recover from the effects of the heatwave earlier in the year and most farmers expect lower yields. Damages by veld fires were reported in Ekurhuleni. Boreholes in most parts of the province are not functional and most dams have dried up. The level of dams is lower as compared to the previous year (99% in 2014; 92% in 2015).

KwaZulu-Natal

Very little rain fell during May but there were light snowfalls in the southern Drakensberg. Daily average maximum and minimum temperatures were above normal. The drought monitor indicates severe drought continuing in Zululand, Uthungulu, Umzinyathi, uMkhanyakude, Uthukela, Amajuba, Ethekwini and Umgungundlovu (UMDM). Ugu and Harry Gwala Districts have also reached severe drought status. Ilembe has now reached disaster status. Rye grass pastures are generally growing well although irrigation remains the limiting factor. Kikuyu varies across the different districts. Maize harvesting has begun in some areas with low yields being reported in Umzinyathi. Livestock condition is extremely varied depending on districts. Commercial areas are maintaining fair to good condition. In Traditional areas there are more extremes, from fairly good condition to very poor and a lot more mortalities reported across all districts. Farmers are burning fire-breaks when conditions allow. Dam levels have decreased as compared to previous year (85% in 2014; 68% in 2015).

Limpopo

NIL REPORT.

Mpumalanga

NIL REPORT.

Northern Cape

The province received below normal rainfall. Livestock and veld conditions are reasonable but poor in parts of Namakwa and Francis Baard Districts. Farmers are planting winter crops. The level of major dams has decreased as compared to the previous year (97% in 2014; 86% in 2015).

North West

The province received below normal rainfall and most dam levels drastically dropped due to the current drought. The veld condition is still good. Livestock conditions are fair to good. Most of the grain crops have deteriorated due to poor precipitation. Farmers are cutting crops that are dying to use for fodder. The level of dams has decreased to 64% as compared to 79% of 2014.

Western Cape

The province received below normal rainfall during May and conditions are poor for planting winter cereal crops in the West Coast. Livestock conditions remained reasonable to good, except for the Laingsburg area and parts of Prince Albert where they are poor. Veld conditions remained poor and farmers were forced to supply supplementary feeding to livestock in order to maintain condition. The level of major dam is at 45% which is lower than 81% of 2014 during the same period.

III. AGRICULTURAL MARKETS

Major grain commodities

According to FNB Agri-Weekly both yellow and white maize prices are higher due to strong export demand. Prices are expected to continue to trend sideways with further downside potential in the short term on harvest pressure. However, the maize market may rise due to a significantly lower expected harvest than last year. Wheat prices showed losses, prices are expected to remain subdued in the short to medium term. Soybean prices are expected to trend sideways with further downside potential. However prices may rise due to poor harvest prospects.

Domestic prices per Safex (R/t)

Commodity	Futures prices as at (2015/06/15)				
	2015/06	2015/07	2015/09	2015/12	2016/03
White maize	R2818.00/t	R2834.00/t	R2875.00/t	R2929.00/t	R2934.00/t
Yellow maize	R2475.00/t	R2483.00/t	R2525.00/t	R2568.00/t	R2550.00/t
Wheat	R3855.00/t	R3869.00/t	R3871.00/t	R3843.00/t	R3891.00/t
Sunflower	R5360.00/t	R5387.00/t	R5476.00/t	R5560.00/t	N/a
Soybeans	R4731.00/t	R4765.00/t	R4840.00/t	R4920.00/t	N/a
Sorghum	N/a	R2705.00/t	R2720.00/t	N/a	N/a

SAGIS weekly bulletin: 2015/06/18

Livestock domestic markets

FNB stated that beef prices are lower as a result of limited demand while the weaner market prices reversed recent gains due limited demand. It is expected that the softer trend will continue due to the seasonal increase in supplies and moderation in demand as cold weather limits outdoor activities. Lamb prices were down across most categories due to softer demand; the exception was in the mutton category where prices ended a bit firmer on improved demand. Prices are expected to trend sideways with limited upward potential in the medium term due to seasonal decrease in demand. Pork traded lower due to increased supplies. Prices are expected to trend sideways with some upside potential in the medium term due to moderation in supplies. Poultry supplies are high but demand is low. Low value product prices maintained a stronger trend on the back of good demand and limited availability. It is expected that poultry prices will continue to fall due to increased domestic and import supplies as well as seasonal moderation in demand.

Producer prices for selected livestock commodities	Beef	Mutton	Pork	Poultry
Open market: Class A / Porker / Fresh whole birds (R/kg)	34.29	53.05	25.28	22.19
Open market: Class C / Baconer / Frozen whole birds (R/kg)	26.83	37.64	22.15	21.17
Contract: A2/A3* / Baconer/ IQF (*includes fifth quarter) (R/kg)	34.25	53.50	23.12	19.11
Import parity price (R/kg)	28.48	30.67	23.20	16.91
Weaner Calves / Feeder Lambs (R/kg)	19.24	23.17		

FNB AgriCommodities: 2015/06/12

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

A report by FEWS-NET indicated that most countries across the region experienced poor seasonal rainfall characterized by a late start of the season, prolonged dry spells from mid-January through April, poorly distributed rains, and flooding. Regional cereal production is expected to decrease by approximately, 12 and 22 percent from the five-year average and last year, respectively. Significant decreases are expected in southern parts of Zimbabwe, Malawi, Madagascar, Lesotho and South Africa. Most rural households across the region are consuming cereals from this year's harvest and will likely experience Minimal ([The Integrated Food Security Phase Classification (IPC)] IPC Phase 1) food insecurity outcomes between April and June. However, in southern parts of Zimbabwe, Madagascar, and Malawi rural households affected by poor rainfall performance will experience Stressed (IPC Phase 2) outcomes during this period.

From July to September, areas including southern and central Malawi, Madagascar, southern parts of Zambia, and parts of Lesotho will likely experience Stressed (IPC Phase 2) food security outcomes, while areas in southern Zimbabwe will be in Crisis (IPC Phase 3). The rest of the region will likely maintain Minimal (IPC Phase 1) outcomes. Despite the estimated below-average maize harvests across the region, particularly in the region's biggest cereal surplus producing countries (South Africa and Zambia), regional cereal supplies are likely to remain stable from April to September due to significant carryover stock from last year in both South Africa and Zambia.

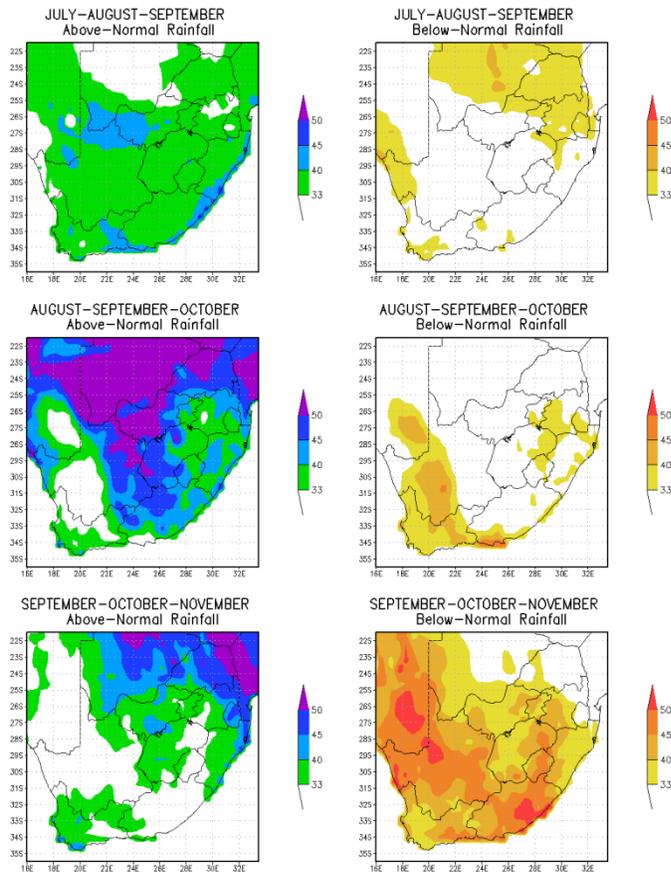
Summary of the reports

Rainfall received was below normal with patches of above normal mainly in KwaZulu-Natal and Mpumalanga. Harvesting of maize continues but yields are low as a result of heat stress that affected crops earlier in the year. The veld is generally in reasonable to poor condition whereas livestock is in reasonable to good condition, but there were mortalities in KwaZulu-Natal. Drought has been reported in KwaZulu-Natal and North West Provinces. There were reports of veld fires in Gauteng and Free State. The average level of major dams in all provinces has decreased as compared to the previous year. Over SADC, regional cereal production is expected to decrease by approximately, 12 and 22 percent from the five-year average and last year, respectively as a result of the poor rainfall.

V. MONTHLY CLIMATE OUTLOOK

Seasonal Climate Watch: July to November 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

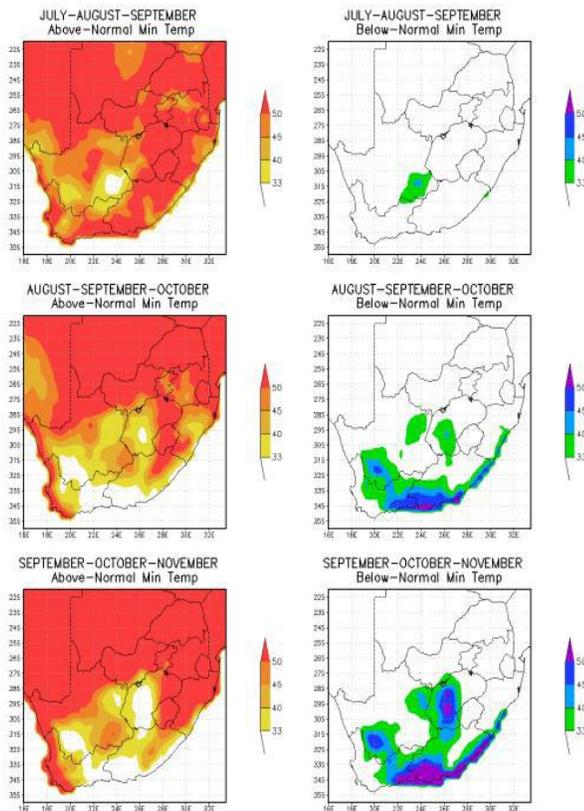
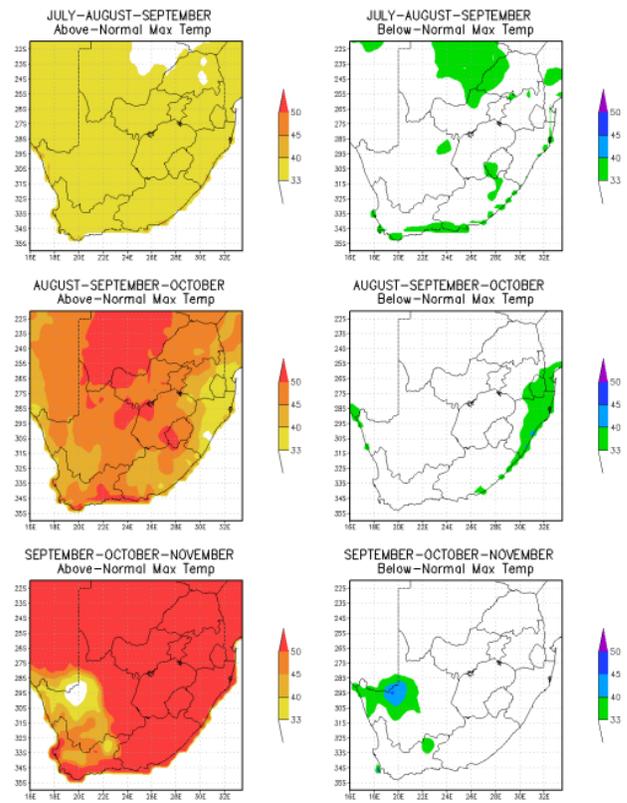


Figure 3 - Maximum temperatures



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

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

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

Comparing the two:-

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

The above normal rainfall for July to September 2015 has higher values and is therefore favoured. This means that rainfall is anticipated to be above normal over the Northern Cape during the period July to September 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, rainfall is anticipated to be above normal for most parts of the country towards the end of winter although the probability is low in the majority of areas. Temperatures are also expected to be above normal even though the probability is low for maximum temperatures. 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. Rain-fed crop production (Winter Crop)

Soil choice:

- Choose suitable soil type.
- Roughen the soil surface to minimize evaporation.
- Minimise compaction by reducing the passing of heavy machinery in the field.

Land preparation:

- Minimum or zero tillage is encouraged to minimise greenhouse gases emission.
- Use a ripper to break plough pans and increase access of roots to stored water and nutrients.
- Prioritise fallow land.

Crop choice and planting:

- Choose suitable cultivars as a precautionary measure.
- Provide flexibility and diversification.
- Stick to normal planting window if appropriate and follow the weather and climate forecast regularly.
- Consider staggered planting spreading over weeks.
- Always practice crop rotation.
- Lay out planting rows parallel to the prevailing direction of the cold air flow.
- Keep air drainage pathways open to insure good air drainage and elimination of frost pockets.

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.
- Winter crop farmers should keep in mind the current dry conditions i.e. very low soil moisture, and should therefore utilize water sparingly.
- 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.

Significant rainfall brought some relief and favorable conditions for winter crops to winter rainfall areas at the beginning of June. Summer rainfall areas remain dry with poor maize yields being reported as a result of heat stress that affected crops earlier in the year. The seasonal forecast favors above normal rainfall in most areas although the probability is low in the majority of areas. 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 choose suitable cultivars. Water and other resources should be conserved in accordance with the Conservation of Agricultural Resources Act (Act No. 43 of 1983). Water restrictions should also be adhered to when issued.

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. Cold front activity will continue; hence isolated incidents of flooding are possible in winter rainfall areas and very cold condition 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 and 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: MittaA@daff.gov.za</p> 	<p>SAWS: Private Bag X097 Pretoria 0001 Tel: +27 (0) 12 367 6000 Fax: +27 (0) 12 367 6200 http://www.weathersa.co.za</p> 	<p>ARC: Institute for Soil, Climate and Water Private Bag X79 Pretoria 0001 Tel: 012 310 2500 Fax: 012 323 1157 Email: iscwinfo@arc.agric.za, http://www.arc.agric.za</p> 
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