



agriculture, forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

National Agro-meteorological Committee (NAC) Advisory on the 2015 spring season Statement from Climate Change and Disaster Management 12 DAFF 2015

24 August 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

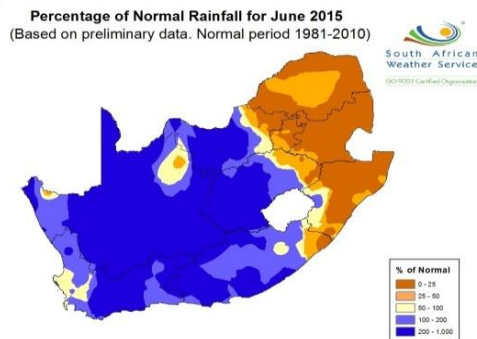


Figure 2

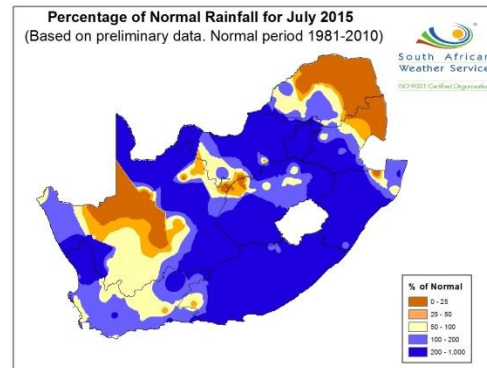
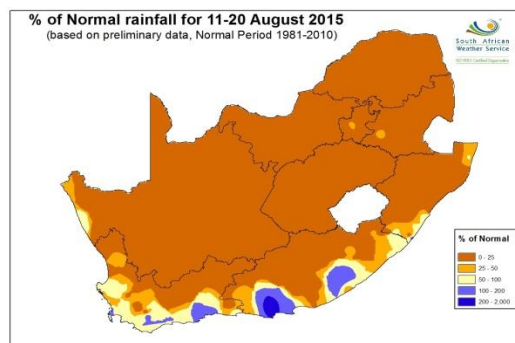
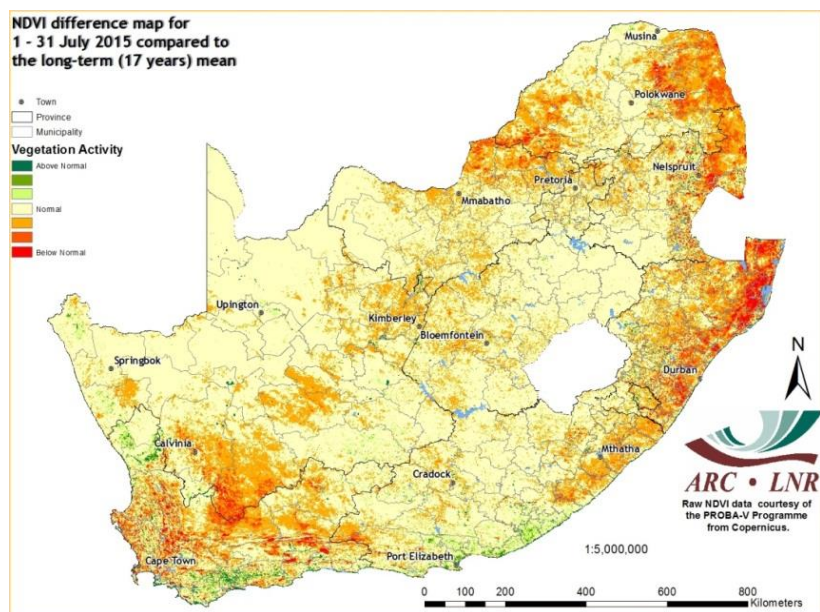


Figure 3



During June, above normal rainfall was received over most of the central and western parts of the country with the eastern parts receiving below normal rainfall (**Figure 1**). For July, rainfall decreased in the west resulting in near normal to below normal rainfall while remaining areas of the country received above normal rainfall but below normal in the northeast (**Figure 2**). On 11-20 August below normal rainfall was received throughout the country with patches of above normal along the south coast (**Figure 3**).

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



By the end of July, vegetation activity was lower over parts of the Western Cape, along the eastern coastal areas, northern parts of the country and several separate areas in the central part of the country.

II. CONDITIONS IN THE PROVINCES DURING JULY 2015

Eastern Cape

Rainfall received was above normal in many areas but not sufficient to alleviate dry conditions. Crops are in fair to very good condition but poor in parts of Amathole, Chris Hani and OR Tambo Districts. Livestock is in reasonable condition but good in some areas and very poor in parts of OR Tambo. The provincial pasture was reported to be generally in reasonable to good condition. There was an incident of veld fire which resulted in damages to a number of farms where grazing was destroyed; furthermore livestock was burned to death. The average level of major dams is at 79% in 2015 as compared to 78% of 2014.

Free State

The central and western parts of the province remain very dry with prominent signs of drought. Natural veld is in reasonable to poor condition in most parts while livestock condition is reasonable to good. Veld fires have been reported in Harrismith, Bloemfontein, Zastron and Dewetsdorp. The level of major dams has decreased as compared to the previous year (76% in 2015; 88% in 2014).

Gauteng

Dry conditions have persisted in the province. The veld is in reasonable to poor condition. Some farmers are providing their livestock with supplementary feed containing elements such as

energy, protein and mineral licks. In areas where there is no supplementary feed the conditions of livestock is poor. Winter crops have been planted. Incidents of veld fires have been reported in some areas and resulted in sheep mortality in De Deur. Water sources i.e. farm dams/streams have dried up while some are very low as a result of poor rainfall during the summer season. The level of major dams is at 96% as compared to 88% of 2014.

KwaZulu-Natal

Rainfall was received in some parts however it was not sufficient to alleviate the continuing drought conditions. There are no signs of regrowth of kikuyu grass. Maize and grass silage is running low and hay is available but at a premium. The condition of livestock is variable, ranging from fair to good in commercial areas and fair to very poor in communal areas. Veld is very dry across the province. Snow has been reported in some areas and in others there were veld fires. The level of major dams has decreased as compared to previous year (64% in 2015; 80% in 2014).

Limpopo

NIL REPORT.

Mpumalanga

Rainfall received was above normal in some areas but below normal in the north-east. Planted vegetables remain in good condition while cotton, citrus and sugarcane harvesting continues in the lowveld. The veld is dry and there were reports of veld fires in some areas while livestock is in fair condition due to farmers providing supplements. The level of major dams is lower at 79% as compared to 92% of 2014 during the same period.

Northern Cape

NIL REPORT.

North West

The province remains dry with reports of drought. The veld is in poor condition and there were veld fires in some areas. Livestock is in poor condition especially in communal areas due to overgrazing and overstocking. Some farmers are supplying their livestock with supplementary feed. The level of major dams is lower as compared to the previous year (63% in 2015; 77% in 2014).

Western Cape

Most parts of the province received normal to above normal rainfall while below normal rainfall was recorded in the Merweville, Laingsburg to Prince Albert region. The rainfall that occurred in the Swartland tended more towards normal levels. Maximum temperatures throughout the province were lower than the corresponding historical long term mean, while minimum temperatures remained at normal levels. The poor rainfall of the early season and accompanying cold conditions resulted in a delay in the development of crops for up to about one month in various parts of the province. In the northern parts of the West Coast the extremely low rainfall of the preceding months resulted in less availability of substantial grazing material which resulted in below normal lambing figures for this year. The level of major dams is lower at 67% as compared to 92% of 2014 during the same period.

III. AGRICULTURAL MARKETS

Major grain commodities

According to FNB Agri-Weekly yellow maize price market saw pressure from large deliveries as harvest is at its peak. White maize prices moved sideways with spill over pressure from the yellow maize market limiting gains. Wheat prices moved slightly firmer despite weakness on the international market. Oilseed market prices were firmer due to a weaker Rand; however it is expected that oilseed prices will rise due to lower expected crop.

Domestic prices per Safex (R/t)

Commodity	Futures prices as at (2015/08/18)				
	2015/08	2015/09	2015/12	2016/03	2016/05
White maize	R2941.00/t	R2956.00/t	R3006.00/t	R2976.00/t	R2656.00/t
Yellow maize	R2659.00/t	R2663.00/t	R2700.00/t	R2671.00/t	R2488.00/t
Wheat	R4029.00/t	R4050.00/t	R4070.00/t	R4135.00/t	N/a
Sunflower	R5720.00/t	R5715.00/t	R5713.00/t	R5400.00/t	R5200.00/t
Soybeans	R4988.00/t	R4989.00/t	R5026.00/t	R5016.00/t	R4899.00/t
Sorghum	N/a	R3050.00/t	R3000.00/t	N/a	N/a

SAGIS weekly bulletin: 2015/08/20

Livestock domestic markets

FNB stated that beef prices maintained a firmer trend supported by limited supplies. It is expected that prices will move higher and reach a peak towards year end. Lamb and mutton prices ended mixed with lamb softening while mutton rose sharply on good demand and tight supplies. Domestic lamb and mutton prices are expected to strengthen in the medium term on improved demand as warmer weather returns. Pork prices were lower due to moderation in demand towards midmonth. It is expected that prices will move sideways with limited upside potential due to volume pressure. Poultry prices showed losses across the board as demand slowed and volumes remain relatively abundant. It is expected that prices will remain under pressure in the short term due to increased stocks.

Producer prices for selected livestock commodities	Beef	Mutton	Pork	Poultry
Open market: Class A / Porker / Fresh whole birds (R/kg)	34.25	55.40	24.13	21.18
Open market: Class C / Baconer / Frozen whole birds (R/kg)	28.05	45.66	20.70	20.52
Contract: A2/A3* / Baconer/ IQF (*includes fifth	34.37	56.84	21.47	17.84

quarter) (R/kg)				
Import parity price (R/kg)	36.35	30.00	25.64	17.08
Weaner Calves / Feeder Lambs (R/kg)	20.94	29.00		

FNB AgriCommodities: 2015/08/07

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 harvests¹ 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.

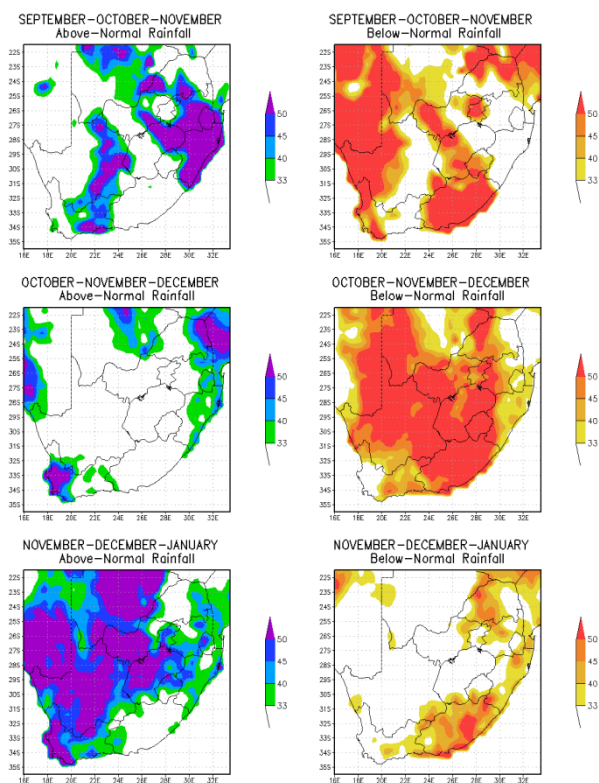
Summary of the reports

Rainfall received in July was near normal to below normal over most western parts of the country but below normal over parts of Limpopo and Mpumalanga. Elsewhere the rainfall was above normal. The rainfall received was not sufficient to alleviate drought conditions in various provinces. The condition of the veld remains poor in most areas, and livestock conditions range from reasonable to poor. Incidents of veld fires have been reported in the Free State, Gauteng, Eastern Cape, Mpumalanga, North West and KwaZulu-Natal Provinces. These resulted in livestock mortalities in the Eastern Cape and Gauteng.

V. MONTHLY CLIMATE OUTLOOK

Seasonal Climate Watch: September 2015 to January 2016

Figure 1- Rainfall



The forecasting system indicates a mixture of above and below normal rainfall conditions for the country indicated in the map below. Of note there is an indication that well above normal rainfall conditions may occur over the eastern parts of the country in spring. The forecast for late spring indicates mostly below-normal rainfall for most of the country and some mixed conditions for early summer.

Figure 2 - Minimum temperatures

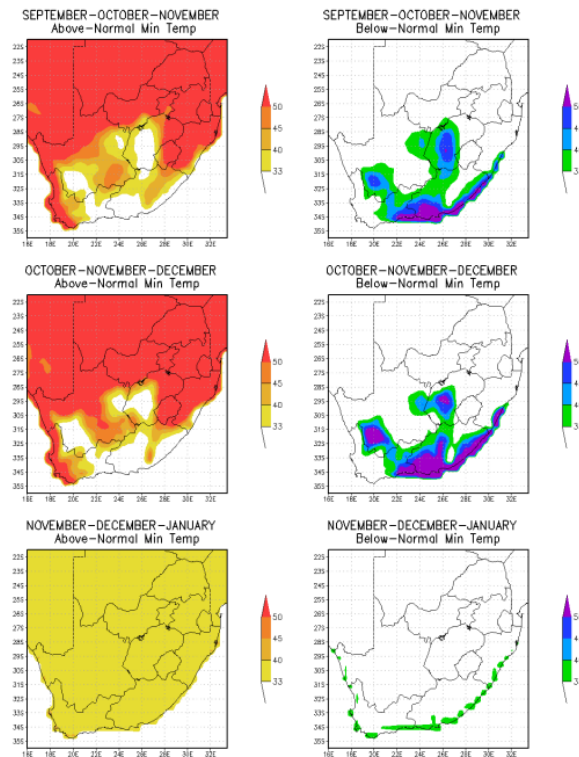
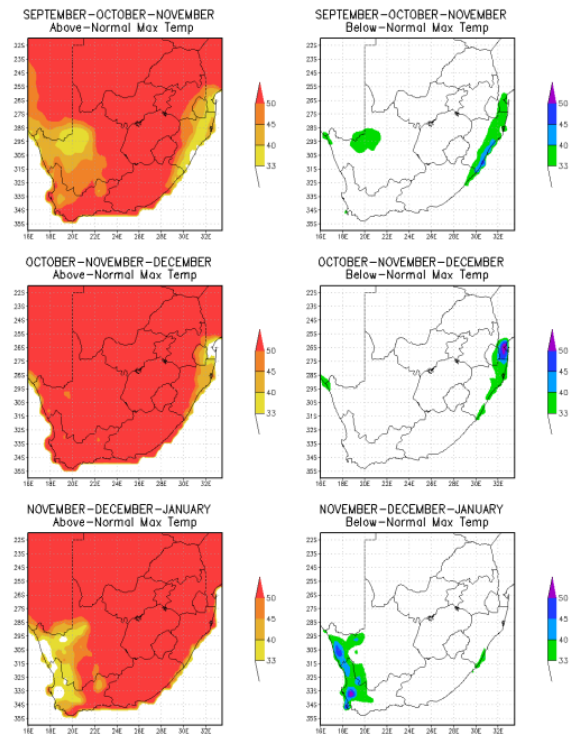


Figure 3 - Maximum temperatures



The forecasting system indicates generally above-normal temperatures across the country through spring towards early summer, with an exception of below-normal minimum temperatures for the southern coastal areas.

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

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

KwaZulu-Natal Province, for the above normal rainfall category, is shaded in purple (>50%). In the below normal rainfall category it is shaded in white (<33%).

Comparing the two:-

- above normal: purple (>50%),

- below normal: white (<33%)

The above normal rainfall category for September to November 2015 has higher values and is therefore favoured. This means that rainfall is anticipated to be above normal over the KwaZulu-Natal province during the period September to November 2015.

State of Climate Drivers

Observations show that ENSO is currently in an El-Niño condition. Most of the forecast model's predictions indicate the strengthening of El Niño condition through the austral spring seasons and is expected to continue towards the summer season.

In summation, above normal rainfall is anticipated in spring mainly over some eastern parts of the country. However, rainfall is anticipated to be below normal over most parts in late spring into the beginning of summer. Temperatures are anticipated to be above normal across the country through spring towards the beginning of summer. 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 (winter crops)

- Consider mulching to minimise evaporation.
- Always eradicate weeds.
- 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)

Correct farming practices should be followed and stocking rates be kept in balance with carrying capacity of the veld.

- Never exceed carrying capacity of plant associations and densities – keep conservative stocking rates even during favourable climate conditions.
- Provide lots of drinking points where possible.
- 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 where possible.

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.

Drought/dry conditions continue to be reported in most provinces. The seasonal forecast favours above normal rainfall in some eastern parts of the country only in spring with below normal rainfall anticipated for late spring into the beginning of summer. Temperatures are anticipated to be above normal. With the seasonal forecast in mind, and current dry conditions in provinces, farmers are advised to conserve water and other resources in accordance with the Conservation of Agricultural Resources Act (Act No. 43 of 1983). Also, water restrictions should 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 many provinces and the risk remains high for conditions conducive for veld fires.




Farmers are encouraged to construct and maintain firebreaks in summer rainfall areas and adhere to veld fire warnings. Cold front activity is likely to continue; hence isolated incidents of flooding and very cold conditions are possible in winter rainfall areas. 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: jscwinfo@arc.agric.za, http://www.arc.agric.za</p> 
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