



agriculture, forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

National Agro-meteorological Committee (NAC) Advisory on the 2014 winter season Statement from Climate Change and Disaster Management 08 DAFF 2014

29 April 2014

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

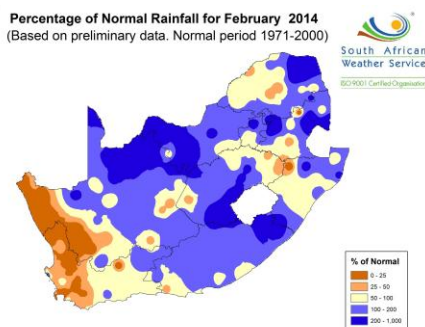


Figure 2

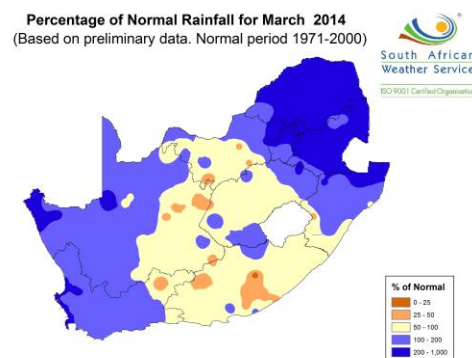


Figure 3

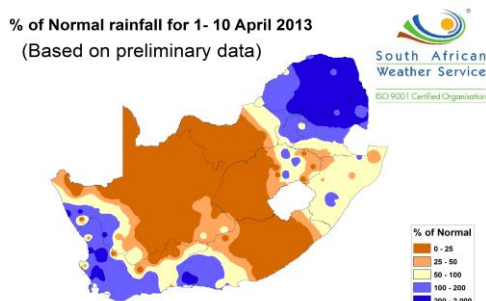
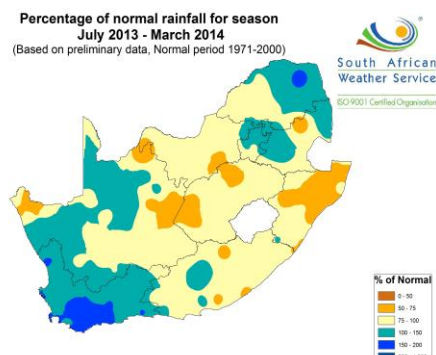
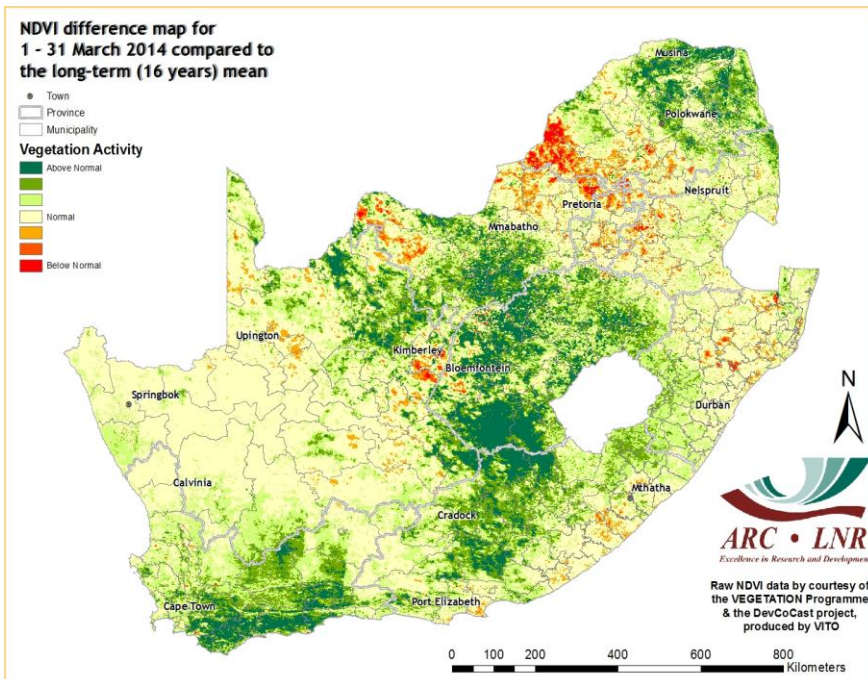


Figure 4



In February above normal rainfall was received over many areas of the central and extreme eastern parts of the country while most of the extreme western regions, parts of Mpumalanga, KwaZulu-Natal, Free State and Limpopo Provinces received near normal to below normal rainfall (**Figure 1**). During March, rainfall decreased in the central parts resulting in near normal rainfall, while in the northern, eastern and western parts of the country rainfall was above normal (**Figure 2**). For the first ten days of April, near normal to below normal rainfall was received in the central parts of the country while the extreme western and the northern parts received above normal rainfall (**Figure 3**). For the season July 2013 to March 2014 most central parts received below normal rainfall but above normal in the western and extreme northern parts of the country (**Figure 4**).

NDVI difference map for March 2014 compared to long-term mean



Vegetation activity is above normal over most of the country except for much of the interior of the Northern Cape as well as the western parts of Limpopo where the high rainfall during March will have a larger positive contribution towards early April.

II. CONDITIONS IN THE PROVINCES DURING MARCH 2014

Eastern Cape

NIL REPORT.

Free State

Normal to above normal rainfall was received. Veld and livestock are reported to be in good condition. Dam levels have increased compared to the previous year (95% in 2014; 85% in 2013).

Gauteng

Above normal rainfall was received in most parts. The veld and livestock are in good condition. Tonnage of grains and vegetables to be harvested is expected to drop significantly due to flooding that occurred. The level of dams is higher as compared to the previous year (100% in 2014; 86% in 2013).

KwaZulu-Natal

Good rains were received throughout the province with heavy falls reported in the northern parts. Temperatures were near normal to normal throughout the province. Soya is being harvested in the Dundee area. Most farmers have finished making maize silage while some are still making hay. Some cattle are still affected by Red Water disease in the Kokstad area, though incidents are decreasing. Incidents of African Horse Sickness have been reported in Howick, Lidgetton and Mooi River. Dam levels have slightly decreased (89% in 2014; 92% in 2013).

Limpopo

The entire province received above normal rainfall. As a result soil moisture will remain high for the rest of autumn season. Livestock and grazing are reported to be in good condition. Due to the good rains received, most rivers are full and the average level of dams is at 95% in 2014 as compared to 92% of 2013 during the same period.

Mpumalanga

The province received normal to above normal rainfall. Planting and harvesting of sugarcane and vegetables continues in the lowveld, and furthermore cutting and bailing of planted pasture in the highveld is in progress. The veld and livestock are in good condition while armyworm has been detected in the Mkhondo municipality. The level of dams has increased compared to the previous year (97% in 2014 and 91% in 2013).

Northern Cape

Most areas received normal to above normal rainfall including the winter rainfall areas. The veld is in poor to reasonable condition in the north and eastern regions while livestock body condition is good. Wine grapes and dry grapes harvesting is nearly complete. The average level of dams has increased to 96% in 2014 as compared to 86% in 2013 during the same period.

North West

Normal to below rainfall was received but above normal in parts of Bojanala. Vegetation activity is below normal in the north-east and far western parts. Crop yields are expected to drop drastically due to heavy infestation of pests as a result of heavy rain in some areas. The level of dams has increased to 81% when compared to 71% of 2013 during the same period.

Western Cape

The province received good rainfall which resulted in above normal rainfall. The monthly average daily temperatures were below normal. In general the conditions seem positive over the province due to the above description of climatic conditions. Wheat farmers are starting to prepare for the new planting season. It is expected that the area under wheat and canola will increase at the expense of malting barley, of which the area is expected to decrease. Although the Central Karoo received good rains in March, good follow-up rains are needed to sustain current conditions. The level of dams indicated an increase as compared to the previous year during the same time (66% in 2014; 57% in 2013).

III. AGRICULTURAL MARKETS

Major grain commodities

According to ABSA the local maize market for yellow and white maize traded lower, prices are expected to come under increased downward pressure due to harvesting. Wheat prices also extended losses under pressure due to lower international prices and the stronger Rand/ US dollar exchange rate, prices are expected to come under pressure. Oilseed also traded lower,

locally prices can continue being supported by the direction of the stronger currency as well as good production outlook.

Domestic prices per Safex (R/t)

	Futures prices as at (2014/04/22)				
Commodity	2014/04	2014/05	2014/07	2014/09	2014/12
White maize	R2510.00/t	R2261.00/t	R2084.00/t	R2130.00/t	R2185.00/t
Yellow maize	R2900.00/t	R2242.00/t	R2181.00/t	R2223.00/t	R2264.00/t
Wheat	R3911.00/t	R3898.00/t	R3924.00/t	R3876.00/t	R3784.00/t
Sunflower	R4755.00/t	R4770.00/t	R4870.00/t	R4985.00/t	R5058.00/t
Soybeans	R5607.00/t	R5627.00/t	R5695.00/t	R5754.00/t	R5792.00/t
Sorghum	N/a	R2720.00/t	R2755.00/t	R2835.00/t	R2940.00/t

SAGIS weekly bulletin: 2014/04/24

Livestock domestic markets

The beef market traded higher and prices are expected to move sideways and upwards in the medium term due to lower supplies. The domestic lamb and mutton prices are lower, locally prices will move downwards in the short term with up and down movement in the medium term due to better demand. The pork prices traded mixed and prices are expected to move downwards in the short term and sideways in the medium term due to lower demand. The broiler market trended up, domestic prices will move up and down in the short term with a possible upward movement in the medium term due to higher demand.

Producer prices for selected livestock commodities	Beef	Mutton	Pork	Poultry
Open market: Class A / Porker / Fresh whole birds (R/kg)	34,25	46.20	21,44	21,24
Open market: Class C / Baconer / Frozen whole birds (R/kg)	21,65	33.05	21,35	20,99
Contract: A2/A3* / Baconer/ IQF (*includes fifth quarter) (R/kg)	37,21	49.38	21,40	17,26
Import parity price (R/kg)	41.93	32.96	32,36	14,62
Weaner Calves / Feeder Lambs (R/kg)	17,50	22,95		

ABSA AgriCommodities: 2014/17/04

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 April to September 2014 Food Security Outlook issued by FEWS NET during April 2014 indicates that following a late start of the season, the remainder of the Southern African monsoon season in March and April will likely be near normal in terms of total rainfall across the region. Crop performance is therefore expected to remain good in most of the region except parts of Angola, Tanzania, and northern Namibia where current rainfall performance indicates that below

normal seasonal outcomes are likely to occur. Early cessation of rains is not expected in most areas that experienced a delayed start of season (parts of eastern Zambia, southern Malawi, and northern/central Mozambique). This will allow late planted crops to reach maturity without compromising yields. Throughout the region, it is expected that agriculture labor opportunities will be at levels typical for the April - September period. The International Red Locust Control Organization for Central and Southern Africa's (IRLCO-CSA) points to fewer outbreaks of the armyworm over the 2013/14 rainy season due to the control measures put in place following last season's outbreaks. With the new harvest expected to be available by April, most households across the region are expected to reduce their dependence on markets for staple foods, reducing pressure on local markets, and subsequently leading to the typical seasonal drop in food prices. However, given the higher levels maintained throughout 2013/14 season, prices on most markets are likely to remain above those of their respective five-year averages.

Summary of the reports

Above normal rainfall was received in the north-east and the western parts of the country but near normal elsewhere. Veld and livestock were reported to be in reasonable to good condition in most areas. Incidents of Red Water disease and African Horse Sickness were reported in KwaZulu-Natal. The level of dams has improved in many provinces. Over SADC most households are expected to reduce their dependence on markets for staple foods, reducing pressure on local markets, and subsequently leading to the typical seasonal drop in food prices.

V. MONTHLY CLIMATE OUTLOOK

Seasonal Climate Watch: May to September 2014

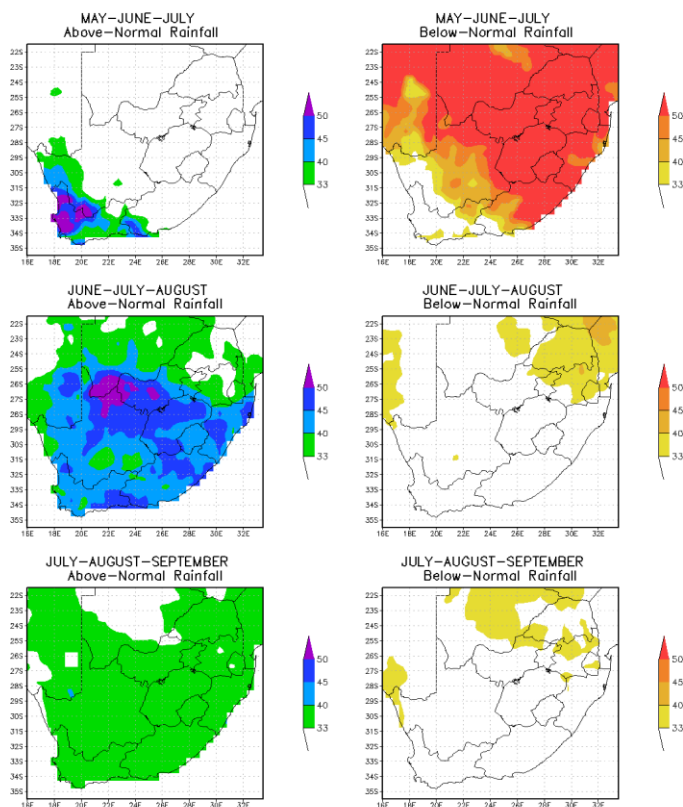


Figure 1- Rainfall

The forecasting system indicated strong probabilities for below-normal rainfall conditions for greater parts of South Africa for early winter with the exception of the extreme south western parts for which the forecasting system indicates strong probabilities of above-normal rainfall conditions. Moving into mid and late winter the forecasting system indicates medium and low probabilities of above-normal rainfall conditions for most parts of South Africa.

Figure 2- Minimum temperatures

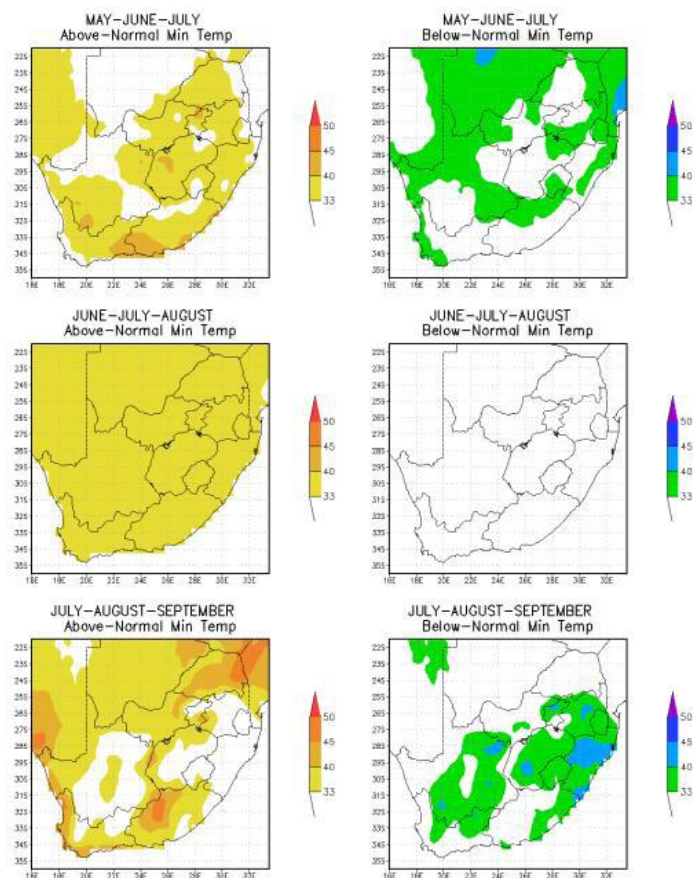
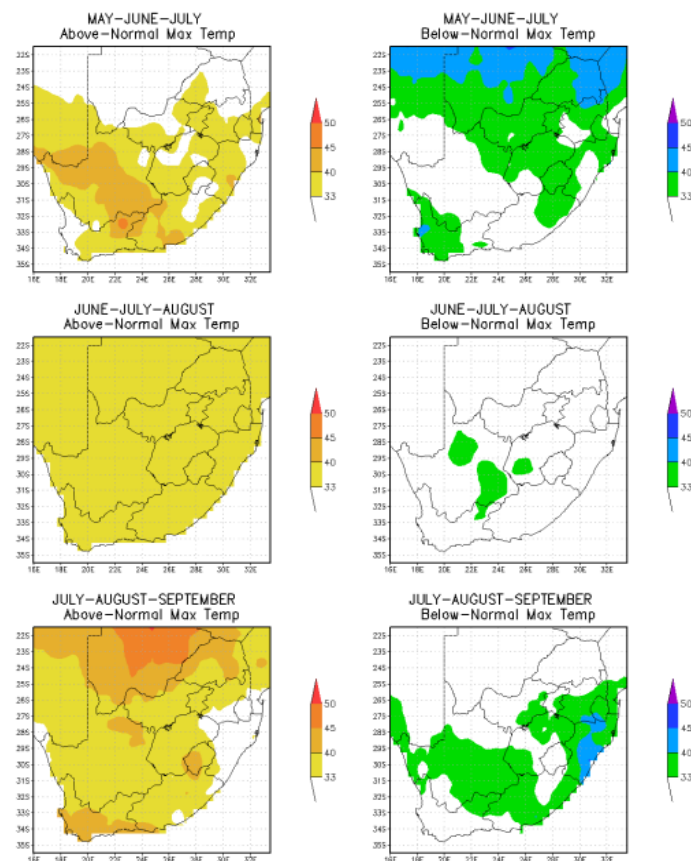


Figure 3- Maximum temperatures



Most of the country is dominated by weak probabilities for both below and above-normal temperature conditions. The forecasting system is thus mainly uncertain to temperature expectations.

How to interpret the forecast maps

- There are three sets of forecast maps: the rainfall, maximum and minimum 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. MAY-JUNE-JULY 2014.
- The forecast probabilities indicate the **direction** of the forecast as well as the amount of **confidence** in the forecast.

For further clarification using MAY-JUNE-JULY 2014 rainfall (**Figure 1**) as an example:

Western Cape Province, for the above normal rainfall category, is shaded in green in the central and east (**33-40%**) and dark blue and purple in the west (**45-50% and 50%>**). In the below normal

rainfall category it is shaded in white (<33%) with a patch of yellow and orange in the north-east (33%-40% and 40-45%).

Comparing the two:-

- above normal: green in the central and east (33-40%) and 45-50%, 50%> in the west.
- below normal: <33% and 33- 40%, 40-45% in the east.

The above normal rainfall category for May to July 2014 over the western parts has the higher percentage and is therefore favoured. However, when a category is less than 45% it is considered uncertain and is therefore unusable. In such instances farmers are advised to plan their activities in accordance with weather conditions usually associated with that particular period/season in their areas.

State of Climate Drivers

Most of the set of dynamical and statistical model predictions predict neutral ENSO conditions through autumn with a warming tendency toward winter.

In summation, during early winter above normal rainfall is favored in winter rainfall areas. Maximum and minimum temperatures do not lean towards above or below normal, meaning no specific category is favored countrywide. In such instances farmers are advised to plan their activities in accordance with temperature conditions usually associated with that particular period/season in their 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:

IV. 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 during cool conditions 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.

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.

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.

F. Veld fires

The provinces and farmers are advised to maintain firebreaks in winter 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/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 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.


Veld and livestock conditions have recovered in most areas and summer crops are being harvested. As the season progresses into winter, farmers are advised to continually ensure that livestock is kept in balance with carrying capacity and make provision for additional feed including licks to give livestock sufficient nutrition into the winter months. As rainfall is anticipated to be above normal in winter rainfall areas but below normal elsewhere during early winter, winter crop farmers are advised to choose suitable cultivars. Water and other resources should continually be conserved in accordance with the Conservation of Agricultural Resources Act (No. 43 of 1983) e.g. mulching. Cold front activity is likely to increase as winter approaches; 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. Preparations for the construction of fire breaks should be considered in summer rainfall areas in anticipation of conditions conducive for veld fires towards the end of winter. On the other hand winter rainfall areas should continue to maintain fire breaks as conditions conducive for fires remain.

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 extreme daily warnings as well as the advisory update next month. Information sharing groups are encouraged especially among farming communities for sustainable development. 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> agriculture, forestry & 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 http://www.weathersa.co.za</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: iscwinfo@arc.agric.za, http://www.arc.agric.za</p> <p> ARC • LNR <i>Excellence in Research and Development</i></p>
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