



agriculture, forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

National Agro-meteorological Committee (NAC) Advisory on the 2011/12 Summer season Statement from Climate Change and Disaster Management 05 DAFF 2012

20 January 2012

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

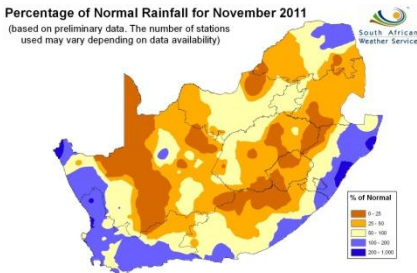


Figure 2

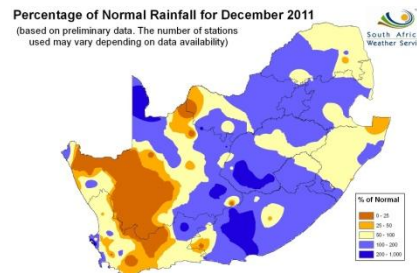


Figure 3

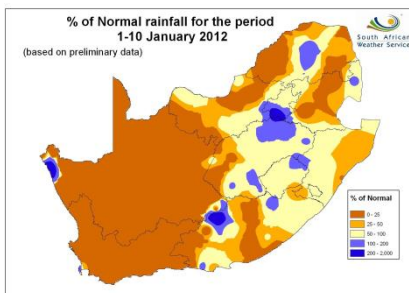
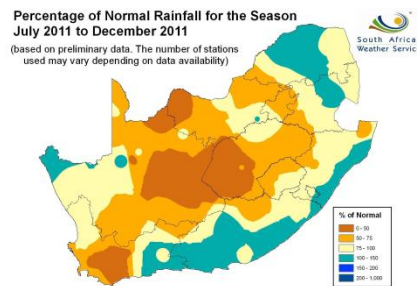
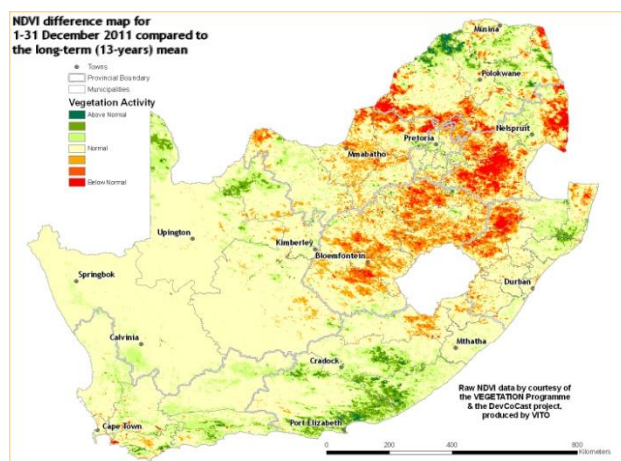


Figure 4



November month experienced normal to below normal rainfall, but along the coast rainfall was above normal (**Figure 1**). In December normal to above normal rainfall was received over the central and eastern parts of the country. Parts of the Northern Cape and Western Cape Provinces experienced below normal rainfall (**Figure 2**). Near normal rainfall with patches of above normal rainfall was received in the central and eastern parts of the country (**Figure 3**) in the first dekad of January. Elsewhere it was below normal. Above normal rainfall was received along the south and east coast as well as Limpopo for the season July to December 2011(**Figure 4**). Elsewhere rainfall was near normal but below normal in the central parts.

NDVI difference map for December 2011 compared long-term mean



Vegetation conditions were below normal over much of the summer rainfall region, especially over large parts of the Free State due to the slow start to the rainy season. Above normal vegetation conditions were confined to the northeastern parts of the country and most of the Eastern Cape.

II. CONDITIONS IN THE PROVINCES DURING DECEMBER 2011

Eastern Cape

Normal to above-normal rainfall was received. Heavy rainfall resulted in slight incidents in Chris Hani, Joe Gqabi and Alfred Nzo Districts. Veld is reportedly reasonable to good though in some areas it is poor due to extreme temperatures. Cultivated pastures are in good condition. Crops, including dryland maize have been reported to be in good condition. All districts have reported good conditions of livestock. However, the effects of high temperatures were detrimental in certain areas where ticks have become a concern. Hail storms with average damages reported were experienced in OR Tambo and Cacadu Districts. However crop conditions are expected to improve as such damages occurred at a tender age of crops. The average dam level was 84% for 2012 as compared to the lower 60% in 2011.

Free State

Above normal rainfall was received in the central and western parts, but near normal over the remainder of the province. Planting has ceased and farmers have been advised to practice water harvesting techniques and soil moisture conservation strategies. Above normal temperatures were experienced in places. Veld and livestock are reported to be in a good condition. Veld fire was reported in the Edenville area. The level of dams has decreased as compared to the previous year (87% in 2012; 106% in 2011).

Gauteng

Some parts of the province experienced persistent high temperatures although above normal rainfall was received. Veld and livestock conditions are good. Most farmers in the eastern region are planting different crops. There was a significant drop in dam levels i.e. Roodeplaat, Vaal and Bronkhorspruit dams; overall the level of dams has dropped compared to last year's level (99% in 2012; 104% in 2011).

KwaZulu-Natal

Below normal rainfall was received in the northern and western parts but near normal to above normal elsewhere. Normal temperatures were experienced. Many dry land maize farmers in the Umzinyathi, Amajuba and Sisonke have failed to plant due to lack of rainfall throughout spring months. Irrigated pastures and crops remain in good condition. Crop losses have occurred in UMgungundlovu and Umzinyathi due to wind and hail damage. Livestock is in fair condition and losses occurred in Umzinyathi and UMgungundlovu due to severe storms. Veld conditions in Umzinyathi, Amajuba, Sisonke and parts of UMgungundlovu are poor due to lack of rainfall during the spring months. African Horse Sickness was reported in Umzinyathi. Veterinary Services have been notified. Dam levels have decreased compared to the previous year (78% in 2012; 83% in 2011).

Limpopo

Near normal rainfall was experienced but below normal in parts of Vhembe and Mopani Districts. Some areas in Capricorn District received above normal rainfall. Livestock is in reasonable condition but poor in areas that have continued to receive below normal rainfall. The veld and crop conditions were reported to be poor in areas that received below normal rainfall. However Waterberg, Belabela and Mokgophong have reported improved veld condition. The level of dams is slightly lower as compared to the previous year (82% in 2012; 85% in 2011).

Mpumalanga

Normal to above normal rainfall was received, especially over the Highveld. Vegetables and crops are in fair to good condition. Green maize under irrigation is currently sold at farm gate markets. Veld conditions are improving due to rainfall, and livestock is in fair condition. There were reports of African swine fever disease outbreak in Delmas and the Veterinary Service has attended to it. The level of dams has decreased as compared to the previous year at the same time (90% 2012 and 102% in 2011). Tropical storm Dando produced heavy rainfall resulting in flooding during mid-January 2012. The Lowveld was worst affected.

Northern Cape

Most parts of the province received near normal rainfall but below normal in Namakwa. A high yield of grape-wine is expected. General conditions of livestock and veld are good. In Kalahari runaway fire was reported as a result of thunderstorms. The level of dams has decreased as compared to the previous year (95% in 2012; 106% in 2011).

North West

The province experienced normal to above normal rainfall. Crop activities are low due to below normal rainfall during spring. Generally, veld and livestock are still in poor conditions but licks are being provided. Cattle mortalities were reported in Bojanala District due to lightning. The level of dams has increased as compares to last year this time (85% in 2012; 83% in 2011).

Western Cape

Rainfall was mostly below normal, excluding Oudtshoorn, Murraysburg and Merweville which indicated above normal rainfall. Below normal rainfall still persisted in the Touwsrivier, Laingsburg

and Prince Albert region indicating that drought conditions remained in those areas. Livestock condition is reasonable over most parts of the province. Additional feeding was supplied to livestock in areas where pastures remained insufficient. The level of dams slightly decreased as compared to the previous year at the same time (69% in 2012 and 70% in 2011).

Information on level of dams is obtained from the Department of Water Affairs

Available: <http://www.dwa.gov.za/Hydrology/Weekly/Province.aspx>

Accessed on 17/01/2012

III. AGRICULTURAL MARKETS

Major grain commodities

According to ABSA market analysis yellow maize and white maize prices traded higher. Prices will trade upwards with a sideways movement in the short to medium term. Wheat prices traded higher, with a possibility of a downward trend in the short term and sideways movement in the medium term. Soybean prices traded higher, the increase was due to international prices down across the board. It is expected that prices will trade sideways with limited upward potential.

Domestic prices per Safex (R/t)

	Futures prices as at (2011/11/11)				
Commodity	2012/01	2012/03	2012/05	2012/07	2012/09
White maize	R2751.00/t	R2624.00/t	R2305.00/t	R1992.00/t	R2025.00/t
Yellow maize	R2765.00/t	R2568.00/t	R2200.00/t	R1960.00/t	R1995.00/t
Wheat	R2750.00/t	R2795.00/t	R2841.00/t	R2870.00/t	N/A
Sunflower	R4360.00/t	R4415.00/t	R4350.00/t	R4405.00/t	R4330.00/t
Soybeans	R3327.00/t	R3380.00/t	R3433.00/t	R3491.00/t	R3551.00/t
Sorghum	N/A	R2505.00/t	N/A	N/A	N/A

SAGIS Weekly Bulletin: 2012/01/17

Livestock domestic markets

ABSA market analysis states that beef prices traded lower. It is expected that prices will continue to move sideways in the short term with a possible downward movement into the medium term due to lower consumer spending. Domestic lamb, mutton and pork price traded mixed. Prices will move sideways in the short term with a possible decrease in the medium term due to lower demand. Poultry market is expected to trade downward with a possible sideways movement in the short to medium due to lower consumer buying power after the festive season.

Producer prices for selected livestock commodities	Beef	Mutton	Pork	Poultry
Open market: Class A / Porker / Fresh whole birds (R/kg)	32.80	47.48	22.35	21.73
Open market: Class C / Baconer / Frozen whole birds (R/kg)	28.05	38.31	19.45	15.53
Contract: A2/A3* / Baconer/ IQF (*includes fifth quarter) (R/kg)	32.35	48.45	20.90	15.57
Import parity price (R/kg)	32.51	30.98	17.81	12.46
Weaner Calves / Feeder Lambs (R/kg)	20.91	24.06		

ABSA market analysis: 2012/01/06

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 Southern Africa Food Security Outlook by FEWS NET for October 2011 through March 2012 states that as the lean season sets in, food security conditions remain generally stable over most of the region. This is due to the improved regional food availability on account of good harvests this season in most SADC countries. Adequate on-farm and market availability has contributed to relatively stable food prices facilitating adequate access by market dependent households. The generally stable conditions are expected to continue through to the next harvest in April/May 2012, and lean season food access problems are likely to be less pronounced compared to usual lean season conditions. Despite the projected stable conditions across the region, concern remains for populations in localized areas facing crop production and other livelihoods shocks. These include parts of southern and central Mozambique; southern Malawi; Masvingo and Manicaland provinces and parts of Gokwe North, Kariba, and Binga in Zimbabwe; parts of central, north, and northeastern Tanzania; Lesotho; and northern Namibia. Due to the impacts of these shocks, many of the affected households are facing food access problems, have already stretched their normal coping capacities, and require external assistance.

Summary of the reports

In December normal to above normal rainfall was received over the central and eastern parts of the country. Parts of the Northern Cape and Western Cape Provinces experienced below normal rainfall. Crops are in good condition. Livestock and veld are generally in reasonable to good condition. Hail damages were reported in the Eastern Cape and KwaZulu-Natal. Veld fire damaged veld in parts of the Northern Cape and Free State. African Horse sickness was reported in KwaZulu-Natal and African swine fever in Mpumalanga. Tropical storm Donda produced heavy rainfalls resulting in flooding during mid-January 2012 in Mpumalanga. The Lowveld was worst affected. Over SADC food security conditions remain stable over most regions.

V. MONTHLY CLIMATE OUTLOOK

Seasonal Rainfall and Temperature Forecast: February- June 2012

Figure 1- Rainfall

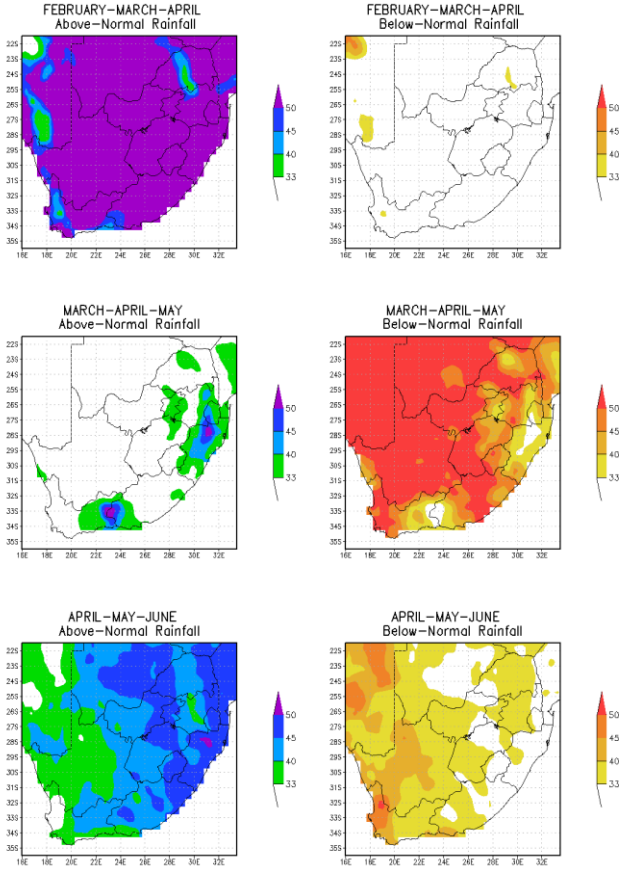


Figure 2- Maximum temperatures

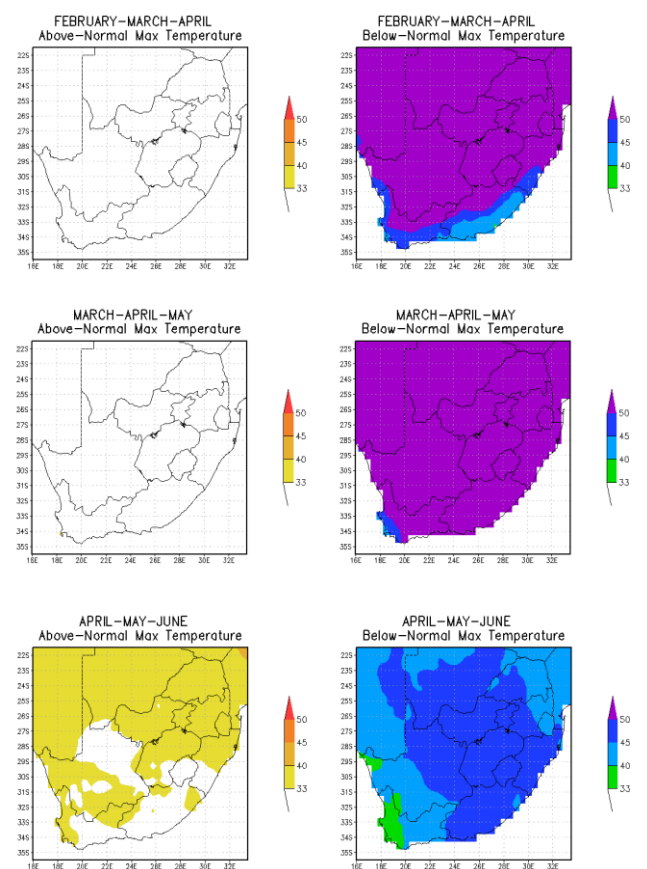
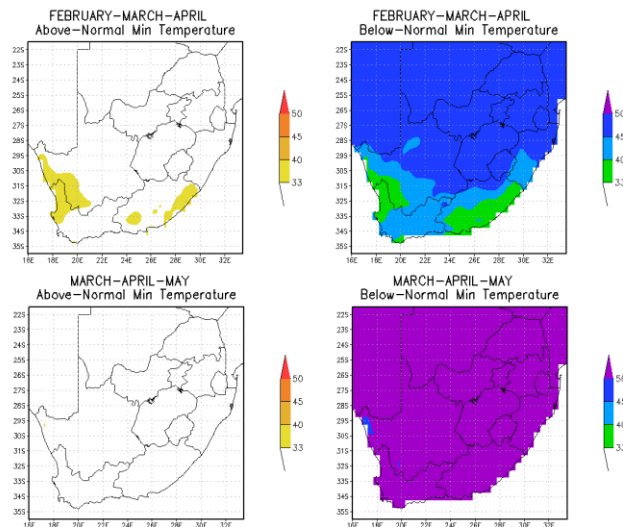
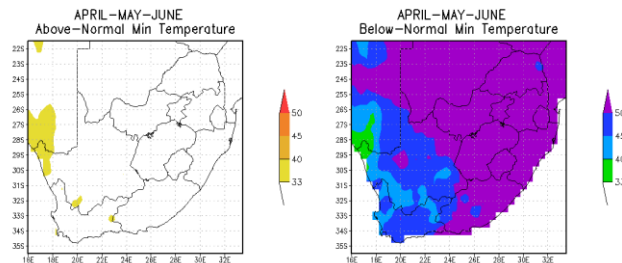


Figure 3- Minimum temperatures





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. FEBRUARY-MARCH-APRIL 2012.
- The forecast probabilities indicate the **direction** of the forecast as well as the amount of **confidence** in the forecast.

For further clarification using FEBRUARY-MARCH-APRIL 2012 rainfall (**Figure 1**) as an example: Free State Province for the above normal category is shaded in purple (**>50%**). In the below normal category it is shaded in white (**<33%**).

Comparing the two:-

- above normal: >50%;
- below normal: <33%.

The above normal category has the higher percentage meaning the forecast favours above normal rainfall. 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.

Seasonal Forecast Overview for SOUTH AFRICA

1. ENSO Discussion

ENSO conditions have been shown to be the single most determining factor in South African summer rainfall which can also be effectively forecasted. Other local ocean basins such as those from the Atlantic and Indian oceans have also shown to have very strong influences to South African rainfall, but remain very difficult to forecast for various reasons. Because of this fact, we look at ENSO forecasts to give an indication of whether the seasons ahead would be abnormally wet (La Nina) or dry (El Nino). Below are some forecasts from international and local centers:

European Centre for Medium-Range Weather Forecasts (ECMWF)
http://193.63.95.1/products/forecasts/d/charts/seasonal/forecast/seasonal_range_forecast/nino_public_s3/

Climate Prediction Center – National Centers for Environmental Prediction (CPC-NCEP)
http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/images3/nino34SSTSea.gif
International Research Institute Climate and Society (IRI)
<http://iri.columbia.edu/climate/ENSO/currentinfo/QuickLook.html>

Risk & Vulnerability Atlas (RAVA)
http://rava.gsens.net/themes/climate_template/seasonal-forecasts/NINO34_FCAST.jpg/view

ENSO is currently in a La Nina phase and is predicted to weaken for most of the forecast period.

2. Rainfall Forecast (February to June 2012)

Enhanced Probabilities is considered to be more than 45% probability for a specific category. If there are areas that do not show an indication of more than 45% probability, then the forecasts for that area is considered to be uncertain.

February-March-April

Enhanced probabilities for above-normal rainfall totals are expected for most parts of South-Africa.

March-April-May

Enhanced probabilities for above-normal rainfall totals are expected for parts of Kwazulu-Natal, Western Cape and Eastern Cape. Enhanced probabilities for below-normal rainfall totals are expected for most parts of South-Africa.

April-May-June

Enhanced probabilities for above-normal rainfall totals are expected for parts of Limpopo, North-West, Gauteng, Mpumalanga, Free State, Kwazulu-Natal and Eastern Cape. Enhanced probabilities for below-normal rainfall totals are expected for parts of Western Cape.

3. Minimum Temperature Forecast (February to June 2012)

Enhanced Probabilities is considered to be more than 45% probability for a specific category. If there are areas that do not show an indication of more than 45% probability, then the forecasts for that area is considered to be uncertain.

February-March-April

Enhanced probabilities for below-normal minimum temperatures expected for most parts of South Africa.

March-April-May

Enhanced probabilities for below-normal minimum temperatures expected for most parts of South Africa.

April-May-June

Enhanced probabilities of below-normal minimum temperatures expected for most parts of South Africa.

4. Maximum Temperature Forecast (February to June 2012)

Enhanced Probabilities is considered to be more than 45% probability for a specific category. If there are areas that do not show an indication of more than 45% probability, then the forecasts for that area is considered to be uncertain.

February-March-April

Enhanced probabilities for below-normal maximum temperatures expected for most parts of South Africa.

March-April-May

Enhanced probabilities for below-normal maximum temperatures expected for most parts of South Africa.

April-May-June

Enhanced probabilities of below-normal maximum temperatures expected for most parts of South Africa.

In summation, above normal rainfall is anticipated for the remainder of summer with below normal temperatures countrywide. With the above forecast in mind, the following strategies are recommended:

VI. SUGGESTED STRATEGIES:

A. Rain-fed crop production

Crop management:

- Adjust planting density accordingly.
- Consider mulching to minimise evaporation.
- Control weeds regularly.
- Consider a conservative fertilizing strategy during dry conditions.
- Consider organic fertilization.
- Scout for pests and diseases regularly and control where necessary.

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 the 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 range grasses more palatable.

F. Veld fires

The provinces and farmers are advised to ensure that firebreaks are in place especially in winter rainfall areas where fuel load is high and may exacerbate the spread of fires. 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 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. Heat stress – bad for productivity (very important)

Signs of heat stress:

- bunching
- high respiratory rates
- open mouth breathing

- trembling
- Vulnerable: overweight, dark hides

What to do:

- Offer shade.
- Offer water- keep good quality water in front of animals.
- Wet with sprinklers/fire hose.
- Water ground.
- Avoid overworking animals.

H. Severe thunderstorms/flash floods

Building resilience:

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




Severe thunderstorms with damaging winds and hail have been reported in various provinces. These are likely to reoccur especially as above normal rainfall is anticipated for the second half of summer, therefore measures to combat these should be in place. Localised flooding is also possible in summer rainfall areas, precautionary measures for these should be considered i.e. proper drainage systems, relocation of livestock and movable assets to a safe place should be maintained. Preventative measures for pests and diseases associated with wet conditions; as well as for heat-wave conditions should be in place. Despite most dam levels being high, farmers must continually conserve resources including water in accordance with the Conservation of Agricultural Resources Act (No. 43 of 1983). In winter rainfall areas preventative measures for veld fires should remain in place e.g. maintenance of firebreaks.

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 X250 Pretoria 0001 Tel:012 319 7955/56; Fax: 012 319 6711 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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