



National Agro-meteorological Committee (NAC) Advisory on the 2015 winter season Statement from Climate Change and Disaster Management 09 DAFF 2015

25 May 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

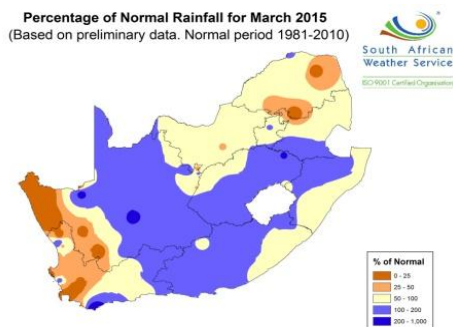


Figure 2

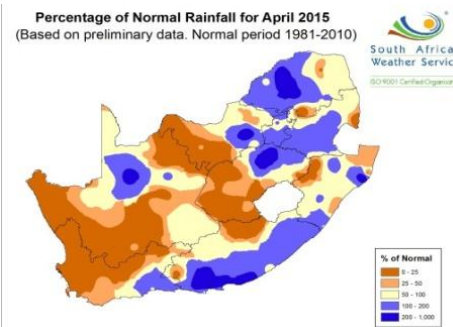


Figure 3

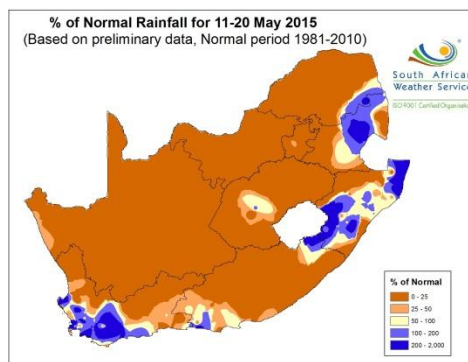
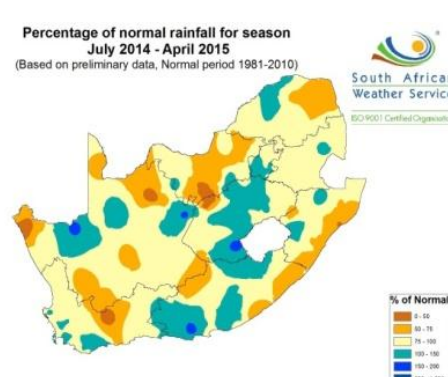
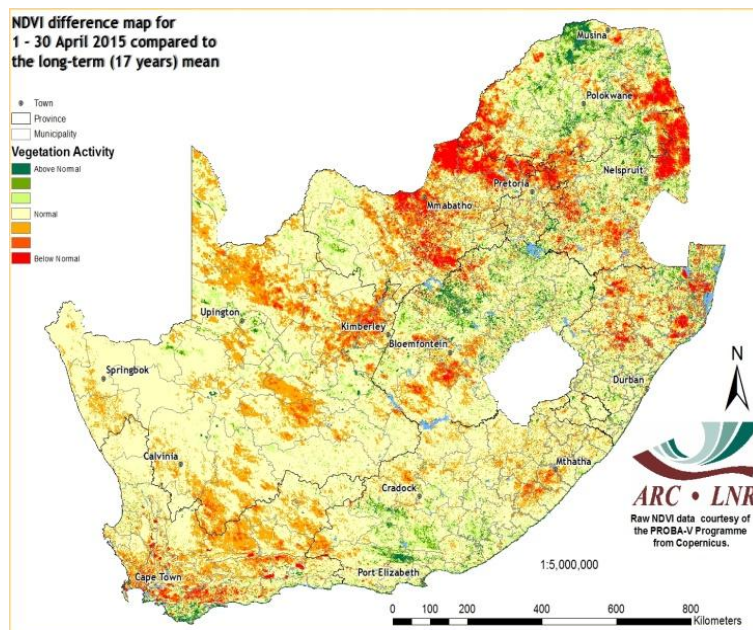


Figure 4



During the month of March, above normal rainfall was received over most of the central parts of the country but near normal elsewhere (**Figure 1**). Winter rainfall areas received below normal rainfall. In April, rainfall decreased resulting in most of the central and western parts receiving near normal to below normal rainfall (**Figure 2**). There were patches of above normal rainfall over the south-eastern coastal areas, northern parts of the country and over the Northern Cape. For the second ten days of May, rainfall was below normal with patches of above normal over the Western Cape, KwaZulu-Natal, Limpopo and Mpumalanga (**Figure 3**). During the season July 2014 to April 2015, near normal to below normal rainfall was received with patches of above normal rainfall in some provinces (**Figure 4**).

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



The eastern half of North West, northern Gauteng, parts of Limpopo, northern parts of KwaZulu-Natal and southern areas of Free State have experienced decrease in vegetation activity. The remaining parts of the Free State, Limpopo and Mpumalanga Provinces experienced increased vegetation activity.

II. CONDITIONS IN THE PROVINCES DURING APRIL 2015

Eastern Cape

NIL REPORT.

Free State

The mid-summer dry spell accompanied by high temperatures in January/February had a negative effect on production. Thundershowers occurred later but were too late to save many cash crops. The veld has deteriorated as a result of dry conditions, while livestock has also deteriorated in some areas due to the dry veld. The veld fire season started earlier because of the dry conditions. The level of dams has decreased as compared to previous year (93% in 2014; 82% in 2015).

Gauteng

Most parts received above normal rainfall but near normal in the north. Maize farmers are preparing for harvesting. Some farmers are busy with land preparation for the planting of winter crops. Veld conditions are average to poor. Overall the condition of livestock is average to good.

The level of dams has decreased to 95% in 2015 when compared to the 99% of 2014 during the same time.

KwaZulu-Natal

Very little rain has fallen from mid-April until month end. Severe drought conditions continue in Zululand, uThungulu, iLembe, uMzinyathi, uMkhanyakude and uThukela. Amajuba and eThekweni have also become severe drought-affected areas. uMgungundlovu and Harry Gwala districts are the only two that remain at a Minor drought status. Rye grass pastures are generally growing well while Kikuyu is very variable across the districts. Maize yields are expected to be average to poor. In uMkhanyakude harvesting of early season soya bean plantings has commenced and yields seem to be poor. Livestock condition is extremely varied across the districts, ranging from fair to good in commercial areas. In traditional areas, the range is from fairly good condition to very poor. The veld has seeded and turned yellow-brown in most districts. Ground cover is still sparse but in the areas with good rains grass has grown and some bulk established. The level of dams has decreased as compared to the previous year (70% in 2014; 87% in 2015).

Limpopo

Near normal to above normal rainfall was recorded. General conditions of the grazing areas are poor in communal areas but fair in commercial areas. Livestock condition is deteriorating especially in communal areas. The average level of dams is at 86% in 2015 as compared to 91% of 2014.

Mpumalanga

Harvesting of winter wheat under irrigation in the highveld continues, also harvesting of potatoes and maize is in progress while soya and sugar beans under dry-land are in fair condition. Planted vegetables are in good condition in the middle-veld while the veld and livestock are in fair condition in the entire province. The level of dams has decreased compared to the previous year (87% in 2015; 96% in 2014).

Northern Cape

Generally, below normal rainfall was received with patches of above normal in ZF Mcgawu. Most parts experience below-normal vegetation activity. Overall veld conditions are average to poor. In general the condition of livestock is still good. The planting season has commenced in the grain producing areas of the winter rainfall region. Vegetables are in good condition. Water supply is still sufficient. The level of dams has decreased as compared to the previous year during the same time (77% in 2015 and 84% in 2014).

North West

The province received below normal rainfall but above normal in the south-east. Dry-land crop condition in some parts is still in poor condition. Vegetation activity is below normal over most parts. The veld and livestock conditions are fair to poor. There is critical shortage of stock water in some areas. The level of dams is lower as compared to the previous year (66% in 2014; 81% in 2014).

Western Cape

The province received generally below normal rainfall with a patch of above normal in the south-east. Temperatures were above normal. In the Overberg district fruit crops resulted in smaller fruit, smaller harvest and questionable quality and planting of cereal crops was postponed due to dry conditions. The veld condition is reasonable to normal and livestock is being supplied with additional fodder. The level of dams is at 42% in 2015 which is lower than 66% of 2014 during the same period.

III. AGRICULTURAL MARKETS

Major grain commodities

According to FNB Agri-Weekly, both yellow and white maize prices showed gains on improved export demand. It is expected that prices will continue to rise on strong export demand as regional production in Southern Africa is low. Wheat prices were firmer because of gains from the international market. It is expected that due to adequate stocks prices will remain subdued in the short to medium term. Oilseed prices were mixed in market with slight gains for sunflower while soybean showed moderate losses. It is expected that prices will rise due to the poor harvest prospects.

Domestic prices per Safex (R/t)

Commodity	Futures prices as at (2015/05/19)				
	2015/05	2015/07	2015/09	2015/12	2016/03
White maize	R2799.00/t	R2825.00/t	R2859.00/t	R2916.00/t	R2900.00/t
Yellow maize	R2400.00/t	R2419.00/t	R2452.00/t	R2489.00/t	R2450.00/t
Wheat	R3809.00/t	R3841.00/t	R3857.00/t	R3819.00/t	R3896.00/t
Sunflower	R4917.00/t	R4930.00/t	R5101.00/t	R5172.00/t	N/a
Soybeans	R4635.00/t	R4695.00/t	R4768.00/t	R4861.00/t	N/a
Sorghum	R2620.00/t	R2580.00/t	R2587.00/t	N/a	N/a

SAGIS weekly bulletin: 2015/05/21

Livestock domestic markets

FNB Agri-Weekly indicated that beef prices ended mostly firmer on limited supplies across markets while calf prices recovered on the back of reduced volumes across markets. Beef prices are expected to come under pressure due to increase in supplies. Lamb and mutton prices maintained a firmer trend on moderation in supplies across markets. It is expected that prices will trend sideways with limited upward potential in the medium term due to decrease in demand. Pork and baconer prices traded under pressure due to improved volumes. Prices are expected to trend sideways with upward potential in the medium term due to moderation in supplies. Poultry showed slightly losses due to subdued demand. It is expected that prices will maintain the current momentum in the short to medium term on moderation in demand.

Producer prices for selected livestock commodities	Beef	Mutton	Pork	Poultry
Open market: Class A / Porker / Fresh whole birds (R/kg)	34.39	54.35	25.27	22.76
Open market: Class C / Baconer / Frozen whole birds (R/kg)	26.58	38.30	23.10	21.77
Contract: A2/A3* / Baconer/ IQF (*includes fifth quarter) (R/kg)	34.24	54.45	23.71	19.91
Import parity price (R/kg)	29.94	30.97	23.53	17.27
Weaner Calves / Feeder Lambs (R/kg)	19.74	25.17		

FNB AgriCommodities: 2015/05/15

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 latest 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.

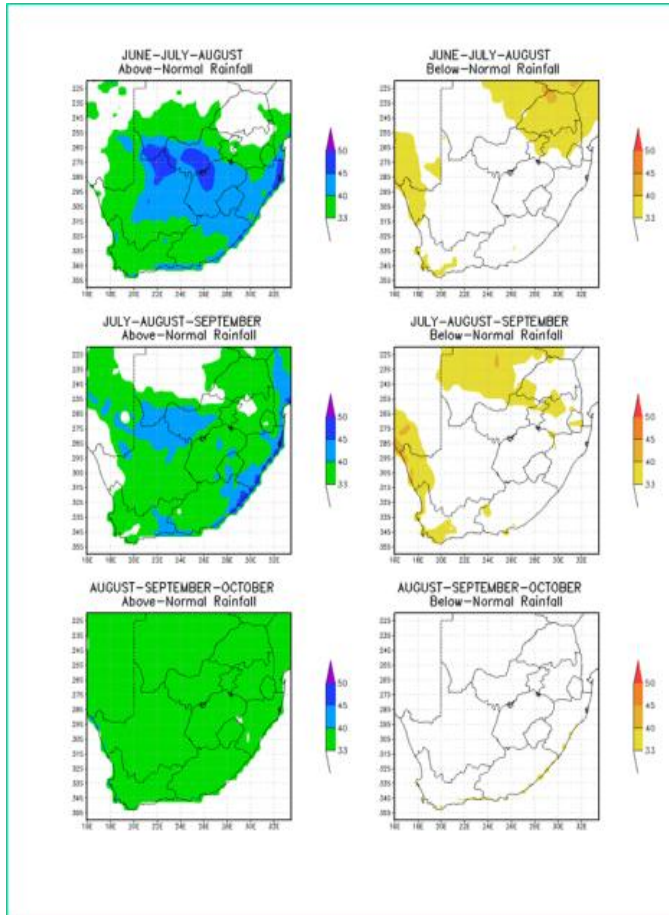
Summary of the reports

Below normal rainfall was received in most provinces including the winter rainfall areas. However the rain came late and could not save the crops nor could it improve conditions in areas affected by prolonged dry conditions. Severe drought conditions continue in KwaZulu-Natal. Crop yields are estimated to be low as compared to the previous year in most summer rainfall areas. Harvesting and preparations for planting winter crops are underway in various provinces. Veld is poor in most areas but livestock is still in reasonable to good condition. The level of dams has decreased in all provinces as compared to the previous year during the same period. 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: June to October 2015

Figure 1- Rainfall



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

Figure 2 - Minimum temperatures

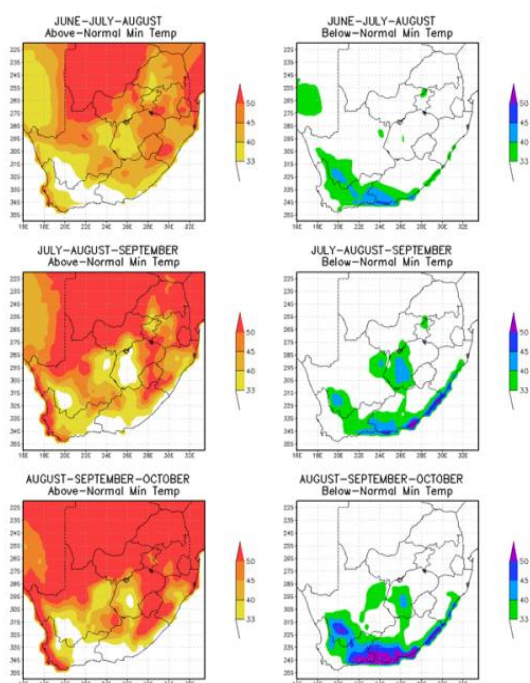
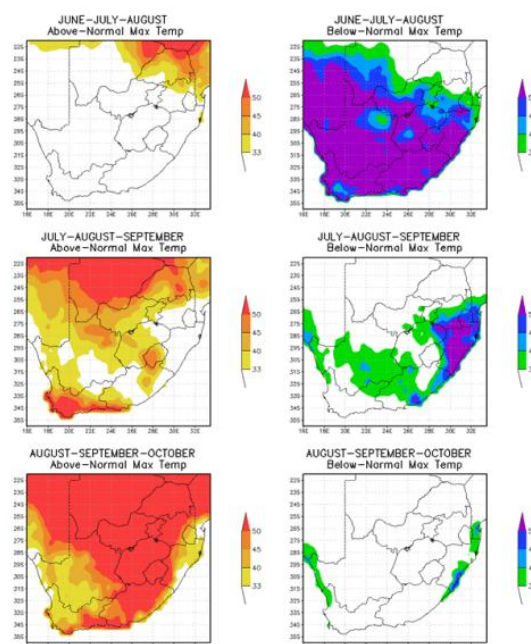


Figure 3 - Maximum temperatures



The forecasting system indicates generally above-normal temperatures across the country through mid-winter towards early spring, with the exception of the mid-winter maximum temperatures that is forecasted to be below-normal.

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

For further clarification using JUNE-JULY-AUGUST 2015 rainfall (**Figure 1**) as an example: Western 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 June to August 2015 has higher values and is therefore favoured. This means that rainfall is anticipated to be above normal over the Western Cape during the period April to June 2015.

State of Climate Drivers

Observations show that ENSO is currently at a weak 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, during mid-winter, rainfall is anticipated to be above normal in most areas although the probabilities are relatively low. Above normal minimum and below normal maximum temperatures are anticipated for mid-winter however both maximum and minimum temperatures are expected to be above normal for late winter. 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 fruit 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.

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 maintain firebreaks in winter rainfall areas and to construct the 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.

The veld is in poor condition in most areas although livestock remains in reasonable condition. Poor crop harvests are expected in some summer rainfall areas due to the heat stress in January/February. Rainfall in the winter rainfall areas appears to be delayed and this may affect planting negatively particularly over the western regions. The seasonal forecast favors above normal rainfall in most areas although the probability is low. With the seasonal forecast in mind, and current 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). Water restrictions should also be adhered to when issued. Winter crop farmers are advised to choose suitable cultivars.

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. The dry conditions and low minimum temperatures since April have caused senescence of plant material. Dry and windy conditions during winter will enhance probabilities for veld fires over the summer rainfall regions. Construction of firebreaks should commence in summer rainfall areas, and in winter rainfall areas the firebreaks should be maintained. 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:-

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