agriculture,
forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

National Agro-meteorological Committee (NAC) Advisory on the 2013 winter/spring season
Statement from Climate Change and Disaster Management
11 DAFF 2013

30 July 2013

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

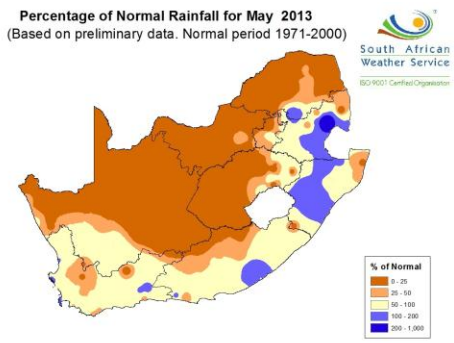


Figure 2

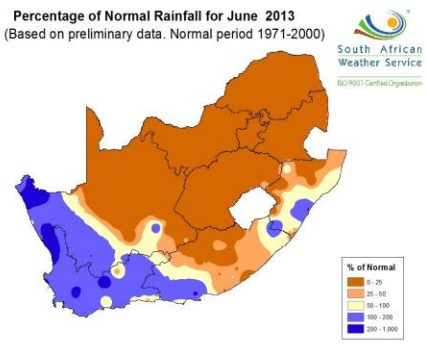


Figure 3

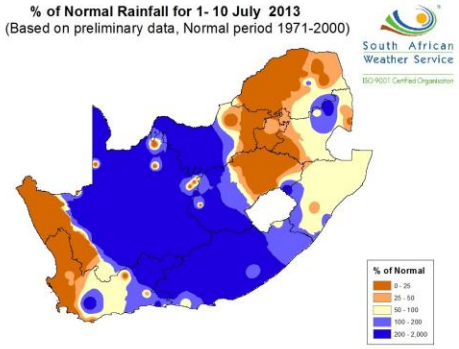
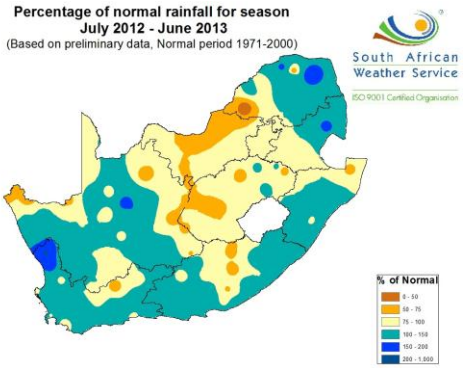
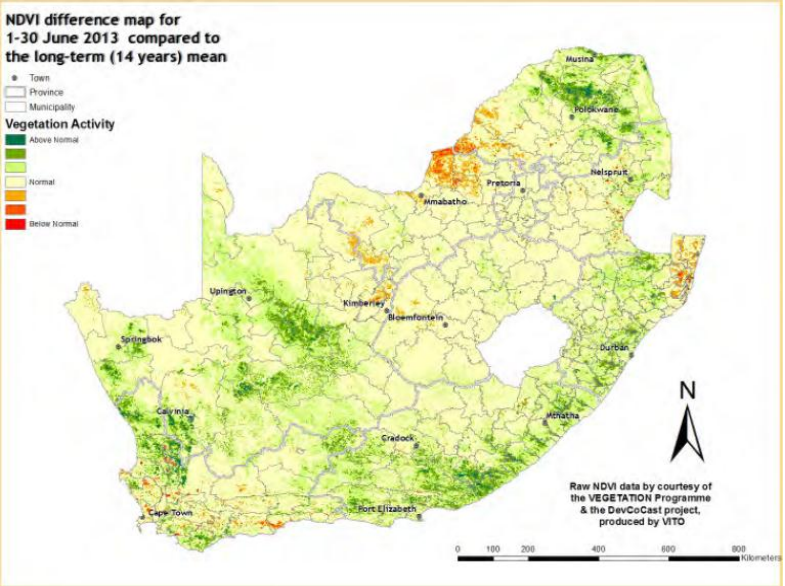


Figure 4



In May most coastal regions received near normal rainfall with patches of above normal in the Eastern Cape, KwaZulu-Natal and Mpumalanga while the remainder of the country received below normal rainfall **(Figure 1)**. In June rainfall increased in winter rainfall areas resulting in above normal rainfall whereas the rest of the country received below normal rainfall **(Figure 2).** During the first 10 days of July the central parts received above normal rainfall but near normal to below normal in other areas **(Figure 3)**. For the season July 2012 to June 2013, near normal to below normal rainfall was limited to the central interior but in other areas it was above normal **(Figure 4)**.

NDVI difference map for June 2013 compared to long-term mean



Vegetation activity over some parts of the interior remains above normal due to above-normal rainfall during March and April. Activity over some of the central parts still reflects stressed conditions of the 2012/13 summer. Vegetation activity is also above normal over large parts of the winter rainfall area, especially the northern parts along the western escarpment.

II. CONDITIONS IN THE PROVINCES DURING JUNE 2013

Eastern Cape

The rainfall during June was above normal in the west but below normal in other areas. Most districts reported fair veld conditions but certain areas are reportedly having poor veld conditions. A few areas have reported livestock as good, whilst in others it is in poor to fair status. Some farmers and agricultural officials have strongly recommended supplementary feed as the deteriorating conditions may result in fatalities. The worst affected areas include Cacadu, Chris Hani and parts of the Joe Gqabi and Amathole districts (which have challenges of overstocking). Sales of winter crops and feed are good and fetching good prices. Cabbage production is also good and its demand is also reportedly high. However, crops that are thriving are under irrigation. Areas in the high ground such as Joe Gqabi and Alfred Nzo have experienced slight snowfalls. Furthermore, strong winds were experienced in high grounds and along the coast, posing some threats to tunnel farmers. Average dam levels were at 78% in 2013, lower than the 2012 level (84%).

Free State

Below normal rainfall was received; the central, southern and western parts remain dry and highly susceptible to fires. Harvesting is almost complete but the yield is significantly low due to dry conditions during summer. Livestock and veld are in poor to reasonable condition. Veld fires have

been reported in the north-eastern parts (Ladybrand and Hobhouse), where veld was destroyed and there were livestock injuries and mortalities. A number of smallholder farmers have been left without grazing. Dam levels have decreased compared to the previous year (83% in 2013; 88% in 2012).

Gauteng
Rainfall was below normal. The veld condition dropped significantly in all regions with regard to growth, vigour, acceptability and palatability to livestock. The livestock body condition is reasonable. Veldfire damages were reported in Westonaria and Vanderbijlpark. Farmers have completed harvesting summer crop and have planted winter ones. The level of dams decreased to 79% in 2013 as compared to last year during the same period (86%).

KwaZulu-Natal
Below normal rainfall was received over most parts. Harvesting of maize and soybean has been completed. Livestock and veld are reported to be in good condition. Sweetveld in the Weene area (Umzinyathi) is overgrazed and lacks both bulk and quality. Bush encroachment in central and southern Umzinyathi has reduced the area of grazing. Cases of Heart water disease in cattle have been reported and veterinary service has been informed. Trichminosis was reported in cattle mainly in Zululand. Dam levels have increased compared to the previous year (89% in 2013; 72% in 2012).

Limpopo
The province received below normal rainfall and grazing continues to deteriorate. Vhembe, Sekhukhune, Mopani and parts of Capricorn districts are worst affected. By contrast, the condition of grazing in Waterberg is reported to be fair. The livestock condition is very poor to the point that farmers are buying supplementary feed. The situation is worse in communal areas. As per storage dam levels, the current status is at satisfactory level. The average water level stands at 89% in 2013 as compares to 72% in 2012. However, small livestock water dams in all districts have dried up.

Mpumalanga
Rainfall was below normal while planting and harvesting of sugar cane and vegetables continues. Citrus harvesting also continues in the lowveld. The veld is dry and supplements are being provided to livestock. The level of dams is higher compared to the previous year (88% in 2013, and 83% in 2012).

Northern Cape
NIL REPORT.

North West
Most parts of the province received below normal rainfall. Some farmers are busy preparing soil for summer crops. Veld and livestock conditions are poor. In some areas of Dr Ruth Segomotsi Mompati livestock mortality was reported. Some boreholes are drying up due to drought. The dam levels decreased (69% in 2013) as compared to last year this time (80% in 2012).

Western Cape
Above normal rainfall was received except for Central Karoo and parts of Klein Karoo and Southern Cape. Below normal maximum temperatures were recorded in most stations. The lower temperatures were due to the presence of snow in various regions. The cold conditions were conducive for wheat, grape and fruit production. The area under canola increased substantially (especially in the Overberg) and a larger crop is expected. Canola in Overberg is experiencing

damage to seedlings and early plants caused by pests. The level of dams has increased compared to the previous year (70% in 2012; 82% in 2013).

III. AGRICULTURAL MARKETS

Major grain commodities

ABSA stated that yellow maize traded lower while white maize prices traded higher. Prices are expected to decrease for both yellow and white maize. Wheat displayed losses due to the stronger exchange rate. Prices are expected to move sideways in the short term. Oil seed also showed losses and prices are expected to trade downward in the short term.

Domestic prices per Safex (R/t)

	Futures prices as at (2013/07/23)				
Commodity	2013/07	2013/09	2013/12	2014/03	2014/07
White maize	R2312.00/t	R2325.00/t	R2360.00/t	R2345.00/t	R2152.00/t
Yellow maize	R2198.00/t	R2213.00/t	R2242.00/t	R2217.00/t	R2092.00/t
Wheat	R3475.00/t	R3370.00/t	R3349.00/t	R3453.00/t	N/a
Sunflower	R4960.00/t	R5030.00/t	R5160.00/t	R5199.00/t	N/a
Soybeans	R5290.00/t	R5285.00/t	R5285.00/t	N/a	N/a
Sorghum	R3071.00/t	R2900.00/t	N/a	N/a	N/a

Livestock domestic markets

According to ABSA, local beef prices traded mixed and prices are expected to move sideways in the short term. The lamb and mutton market also showed some gains and prices are expected to improve later in the season. The pork and baconer traded higher and prices are expected to move sideways in the short term with an upward movement in the medium term. The broiler market traded slightly higher. Prices are expected to move sideways with potential for increase due to higher demand in medium term.

Producer prices for selected livestock commodities	**Beef**	**Mutton**	**Pork**	**Poultry**
Open market: Class A / Porker / Fresh whole birds (R/kg)	27.70	41.60	18.70	18.82
Open market: Class C / Baconer / Frozen whole birds (R/kg)	21.25	32.65	17.98	18.03
Contract: A2/A3* / Baconer/ IQF (*includes fifth quarter) (R/kg)	27.60	42.20	18.34	14.72
Import parity price (R/kg)	40.48	26.31	25.34	13.87

Weaner Calves / Feeder Lambs (R/kg)	15.65	21.82		

ABSA AgriCommodities: 2013/07/19

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 2013 FEWS NET reported that minimal (IPC Phase 1) food insecurity outcomes prevail across the region as food availability continues to improve due to ongoing harvests, stable market supplies, declining staple food prices, and increased incomes from sale of staple and cash crops. These outcomes are projected to persist over most parts of the region through September, with the exception of a few localized areas in Malawi, Mozambique, and Zimbabwe. Maize prices are generally expected to follow the normal declining trend of the harvest period, however price levels will likely remain above both last year's and the five-year average on most of the region's reference markets. These higher levels are as residual effect of the steep price increases experienced in countries during the 2012/13 consumption period. Higher price levels are likely to be sustained throughout the 2013/14 consumption period in view of the tight regional supplies due to reduced tradable surpluses among the main maize producing countries of the region.

Summary of the reports

Below normal rainfall was received, except for the Western Cape and western regions of the Northern Cape where it was above normal. Harvesting has been completed in some parts, with Free State reporting significantly low yields. Veld and livestock are in good condition in some parts but poor to reasonable in other parts. Veld fires have been reported in Free State and Gauteng while there had been incidents of Heart water disease and Trichminosis in KwaZulu-Natal. There was snowfall in Western Cape and Eastern Cape. Over SADC minimal food insecurity prevail as food availability continues to improve, with the exception of a few localized areas in Malawi, Mozambique, and Zimbabwe.

V. MONTHLY CLIMATE OUTLOOK

Seasonal Climate Watch: August to December 2013

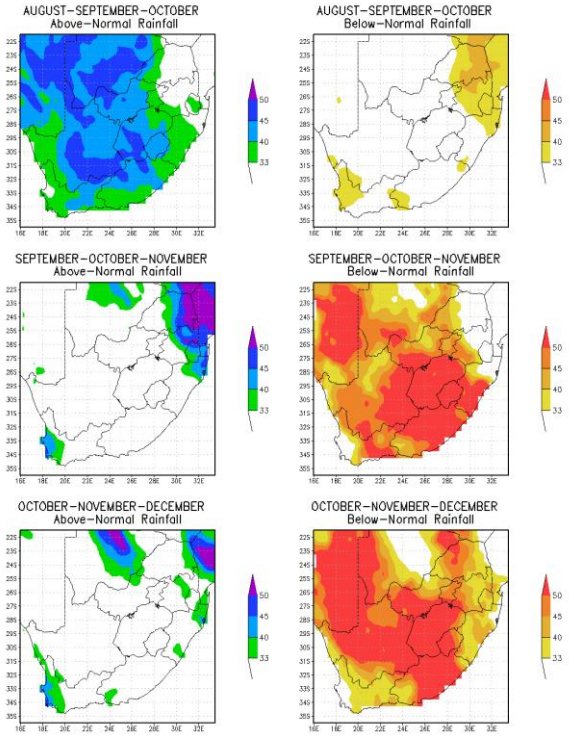


Figure 1- Rainfall

The forecasting system indicated enhanced probabilities for below-normal rainfall conditions over the extreme north eastern part of South Africa during the period spanning from August to October. For the interior of the country the likelihood of rainfall condition is for above-normal in parts. Notwithstanding, as we go to mid and late spring the forecasting system indicates elevated probabilities for below-normal rainfall conditions for most of the country with the exception of the extreme north-eastern parts for which above-normal rainfall conditions are expected.

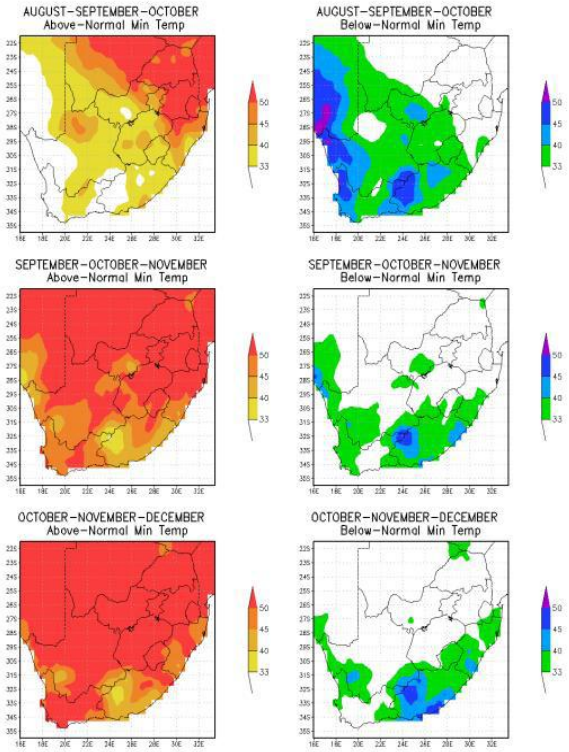


Figure 2- Minimum temperatures

The prediction of minimum temperatures for late winter is indicating warmer conditions for the north-eastern parts of South Africa and colder conditions for parts of the south-west.
Mid and late spring predictions are for mostly above-normal temperatures (minimum) for most of South Africa.

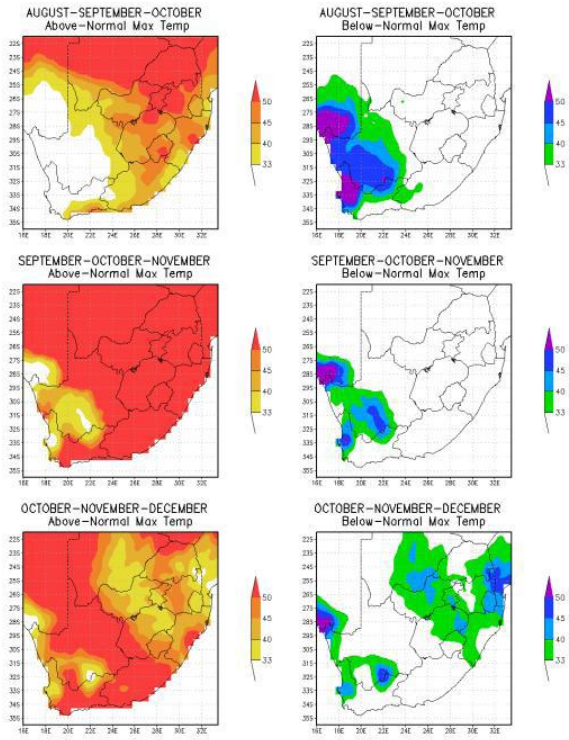


Figure 3- Maximum temperatures

The prediction of maximum temperatures for late winter is indicating warmer conditions for the north-eastern parts of South Africa and colder conditions for parts of the south-west.
Mid and late spring predictions are for mostly above-normal temperatures (maximum) for most of South Africa.

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. AUGUST-SEPTEMBER-OCTOBER 2013.
- The forecast probabilities indicate the ***direction*** of the forecast as well as the amount of ***confidence*** in the forecast.

For further clarification using AUGUST-SEPTEMBER-OCTOBER 2013 rainfall (**Figure 1**) as an example:
North West Province, for the above normal category, is shaded mainly in light blue **(40-45%)** with a patch of dark blue **(45-50%)** in the west and a patch of green **(33-40%)** in the east. In the below normal category it is shaded in white **(33% and less)**.
Comparing the two:-

- above normal: 40-45% with patches of 45-50% and 33-40%.
- below normal: 33% and <.

The above normal rainfall category for August to October 2013 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 dynamical and statistical model predictions issued during late June and early July 2013 predict neutral El-Ñino Southern Oscillation (ENSO) conditions through late southern (austral) winter and later.

In summation, below normal rainfall is anticipated for most areas towards spring with above normal minimum and maximum temperatures. Farmers are encouraged to continually check updates i.e. seasonal forecasts and utilize 7 day weather forecasts for short term planning.

With the above forecast in mind, the following strategies are recommended:

IV. SUGGESTED STRATEGIES:

A. 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.

Winter precipitation bearing systems can cause a sudden drop in temperature that could adversely affect livestock e.g. increase infection risk: e.g. calves – more susceptible to diseases when cold stressed.

Preventative measures:

- Listen to weather advisories daily.
- Increase resistance - optimal condition of animals (good nutrition).
- Keep shelters dry.
- Air flow - use of fans can keep temperatures higher.
- Nutritional supplement for pregnant animals
  – Provide lots of drinking points.
  – Provide phosphorous licks freely.
- Cattle: Warm blankets / hot boxes could help calves reach normal body temperature.
- Sheep: Lambing cubicles during cold conditions for ewes.
- Disposal of livestock
  – Sheep
    - Old, infirm sickly first.
    - Good quality breeding ewes last.
  – Cows
    - Mature oxen, dry cows first.
    - Retain nucleus of best cows aged 4 to 6 years.

- Diseases - Local veterinary services
  – Relevant vaccinations.
  – Wet/dry conditions - relevant for specific areas.

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.

F. Veld fires

The provinces and farmers are advised to maintain firebreaks in the 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):

- t 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:

- Select frost tolerant plants over frost prone areas.
- Place frost sensitive plants in protected locations.
- 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.
- Watering during cold stages (apply just a trickle at base of tree). This will prevent dehydration during frost.
- Increase air circulation.
- Do not prune frost damaged plants until they begin growing in spring.
- Do not overprotect; plants are more frost resistant if kept hardened by cold weather.
- Mulching can reduce soil temperature fluctuations – preventing early growth.

Although good rainfall was received in most winter rainfall areas in June moisture should be conserved to sustain crops for the remainder of the growing season. Also, as below normal rainfall is anticipated towards spring more stringent measures should remain in place to conserve water and other resources in all areas in accordance with the Conservation of Agricultural Resources Act (No. 43 of 1983). Farmers in all areas are advised to keep the number of stock in balance with carrying capacity and make provision for additional feed including licks to give livestock sufficient nutrition as many areas indicated poor veld conditions. As summer rainfall areas are dry and the windy period of August/September approaches the risk of fire hazards will be very high. Therefore preventative measures for veld fires should be in place i.e. maintenance of firebreaks. Cold front activity remains likely hence isolated incidents of flooding are possible in

winter rainfall areas and very cold conditions in many parts of the country. Consequently 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 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:-**

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