agriculture,
forestry & fisheries
Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

**National Agro-meteorological Committee (NAC) Advisory on the 2014/15 summer season**
**Statement from Climate Change and Disaster Management**
**06 DAFF 2015**

**23 February 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**

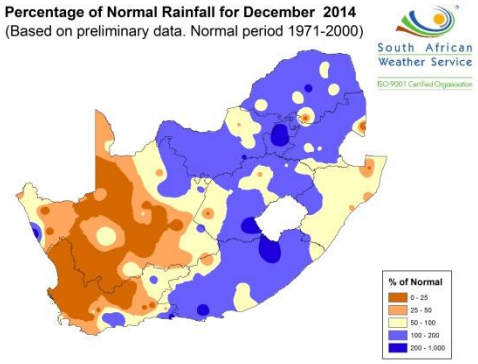



**Figure 2**

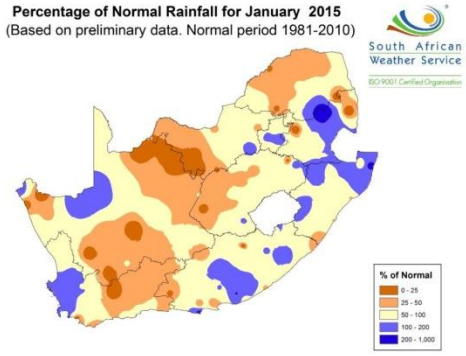



**Figure 3**

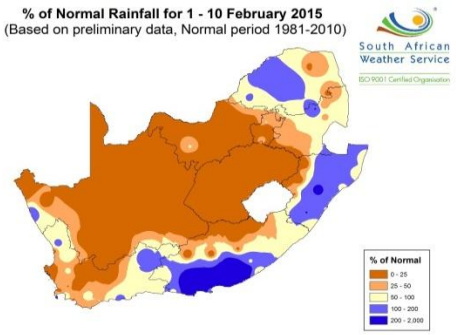
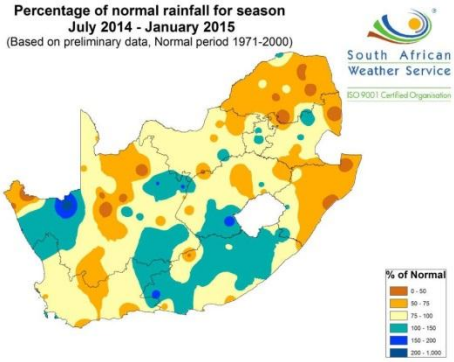
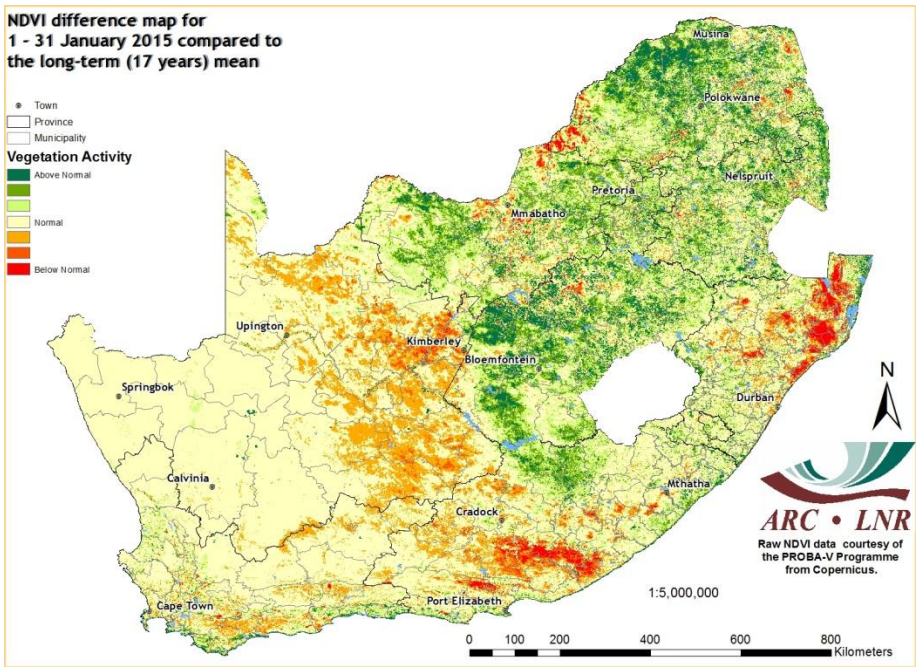



**Figure 4**



Rainfall was near normal to above normal over most parts of the country, but below normal over the Northern Cape and Western Cape in December (**Figure 1**). The rain decreased in January becoming near normal to below normal over the majority of areas (**Figure 2**). The first ten days of February, (**Figure 3**) received below normal rainfall with patches of above normal rainfall in Limpopo, KwaZulu-Natal and Eastern Cape. The rainfall was near normal to below normal in many areas with patches of above normal mainly in the Eastern Cape during the season July 2014 to January 2015 (**Figure 4**).

**NDVI difference map for January 2015 compared to long-term mean**




Vegetation activity decreased in some parts of the country due to drier and hot conditions that dominated much of the western and central interior during January.

## II. CONDITIONS IN THE PROVINCES DURING JANUARY 2015

### Eastern Cape

January was an extremely hot month with near normal rainfall in most areas. Natural vegetation deteriorated as a result of the scorching sun. Crops were adversely affected especially at the germination and flowering stages, particularly maize. Good crop conditions were reported in Baviaans, Sunday's River, Mbashe, Matatiele and Mzimvubu. The livestock conditions have been generally good, with the exception of Joe Gqabi and parts of Sarah Baartman where they are fair through poor to very poor. The stock water levels were low except in Amahlathi, Makana, Sunday's River and Matatiele which were average. There is a big concern over stock water in Senqu, Nkokobe, Nqushwa and Matatiele which were critically low. Locust was reported on avocado in Amathole. The level of major dams has decreased compared to the previous year (77% in 2015; 84% in 2014).

### Free State

Rainfall received was near normal but below normal in the west and north-west. The southern, western and central parts of the province are still experiencing drought. Due to low soil moisture, yield for the 2014/2015 summer crops such as maize and sunflower is going to be affected

significantly (Viljoenskroon and Kroonstad). The veld has deteriorated considerably due to dry conditions that set in during January but livestock conditions have improved. There were reports of livestock mortality in Mangaung Metro. The average level of major dams has slightly increased as compared to the previous year (86% in 2015; 85% in 2014).

**Gauteng**
Rainfall received was near normal with patches of above normal. The condition of veld and livestock is average to good. Most farmers vaccinated their livestock against internal and external parasites and diseases. Crops, including vegetables are fair to poor due to heat stress. The average level of major dams was at 99% in 2015, as compared to 86% of 2014 during the same period.

**KwaZulu-Natal**
Rainfall received was near normal with above normal patches in Zululand, UMkhanyakude and near the Drakensberg; more rain is still needed to fill dams. Severe thunderstorms with hail occurred. Maize is tasseling including ones planted late. Wheat is in normal condition while sugar cane is still in a stressed state with low tonnages. Replanting of sugar cane is taking place. Land preparations for rye grass are being restricted by availability of irrigation from dams and water restrictions. Livestock condition is fair to good in areas that had good rains and where pastures and veld have grown. There are more reports of drought related losses in Ilembe, Mtubatuba, Imfolozi and isolated cases elsewhere. In Umzinyathi livestock deaths were reported from lightning strikes. The veld is green but ground cover is still sparse and grass is very short. Communal lands continue to be overstocked and overgrazed. Farm dams are low and of concern in all areas. The level of major dams has decreased as compared to the previous year (73% in 2015; 85% in 2014).

**Limpopo**
Following a relatively wet December 2014, dry condition started to dominate from January 2015. Much of the rain was in the form of isolated to scatted thundershowers, also, distribution was uneven. Extremely high maximum temperatures were recorded in some areas. Grazing and livestock are in very good condition. Seasonal rivers and streams are dry but the level of major dams has increased to 91% as compared to 83% of 2014 during the same period.

**Mpumalanga**
Rainfall received was near normal with patches of above normal. Crops under irrigation are in good condition, and those under dryland are in reasonable condition. Harvesting of sugar cane in the lowveld continues. The veld is in good condition but reasonable in the lowveld due to poor rainfall. Livestock is in reasonable to good condition. Drought has been reported in the south-east and western areas of the province. The level of major dams has slightly decreased as compared to the previous year (93% in 2015; 95% in 2014) during the same period.

**Northern Cape**
Very little precipitation was recorded over the western parts and the northern parts of the winter rainfall area. The central to northern parts experienced below normal vegetation activity. Generally the condition of livestock is fair to good. Most farmers reported damaged vegetables due to heat stress. Some areas experienced water shortage for livestock. The level of major dams has increased as compared to the previous year (86% in 2015; 82% in 2014).

**North West**
Most areas received below normal rain but near normal in the east. Vegetation activity is below normal over the central parts. Dryland crop condition is fair to poor due to heat stress but livestock

is in good to fair condition. The level of major dams has decreased as compared to the previous year during the same period (67% in 2015; 74% in 2014).

**Western Cape**
The Overberg District experienced a dryer season, with crops from orchards and vineyards ripening earlier, resulting in smaller fruit and a smaller harvest. Load shedding affected irrigation and storage of produce. Livestock is in reasonable condition in the West Coast District. Conditions remain poor in the Central Karoo with additional feed being supplied to livestock. Wheat is below normal due to poor rainfall over the past months in parts of Eden District. Livestock and veld are in reasonable condition. Fires were reported in some areas of the District. The average level of major dams has decreased as compared to the previous year (62% in 2015; 79% in 2014).

## III. AGRICULTURAL MARKETS

**Major grain commodities**
According to FNB Agri-Weekly, yellow and white maize markets anticipated price gains as dry weather conditions persist in parts of the maize areas with concerns of possible crop damages. It is expected that the weather conditions turn around could boost crop prospects leading to the reversal of the recent prices. Wheat market prices traded sideways to weaker while oilseeds traded mixed.

**Domestic prices per Safex (R/t)**

| | Futures prices as at (2015/02/17) | | | | |
|---|---|---|---|---|---|
| **Commodity** | 2015/02 | 2015/03 | 2015/05 | 2015/07 | 2015/09 |
| White maize | R2894.00/t | R2908.00/t | R2910.00/t | R2936.00/t | R2960.00/t |
| Yellow maize | R2442.00/t | R2462.00/t | R2449.00/t | R2453.00/t | R2475.00/t |
| Wheat | R3860.00/t | R3878.00/t | R3925.00/t | R3950.00/t | R3895.00/t |
| Sunflower | R5120.00/t | R5102.00/t | R5150.00/t | R5230.00/t | R5286.00/t |
| Soybeans | R5294.00/t | R5224.00/t | R4995.00/t | R5081.00/t | R5152.00/t |
| Sorghum | N/a | R2411.00/t | R2560.00/t | R2545.00/t | R2480.00/t |

**SAGIS Weekly bulletin**: 2015/02/19

**Livestock domestic markets**
FNB Agri-Weekly indicated that beef prices came under increased downward pressure due to weak demand during midmonth. It is expected that prices will remain under pressure due to soft demand. Prices are also expected to rebound in the lead up to the Easter holidays. The lamb and mutton prices continued to weaken due to increased supplies and limited demand. Prices are expected to trade sideways with further upward potential towards the Easter holidays. Pork prices are lower due to limited demand during midmonth. It is expected that prices will rebound slightly on moderation in supplies. Domestic poultry market traded downward due to limited demand

during midmonth. Prices are expected to trend sideways with some upward potential in the short to medium term.

| Producer prices for selected livestock commodities | Beef | Mutton | Pork | Poultry |
|---|---|---|---|---|
| Open market: Class A / Porker / Fresh whole birds (R/kg) | 31.92 | 52.42 | 25.89 | 22.67 |
| Open market: Class C / Baconer / Frozen whole birds (R/kg) | 26.91 | 39.07 | 23.35 | 22.27 |
| Contract: A2/A3* / Baconer/ IQF (*includes fifth quarter) (R/kg) | 32.80 | 52.66 | 23.74 | 18.28 |
| Import parity price (R/kg) | 29.95 | 31.38 | 21.46 | 17.30 |
| Weaner Calves / Feeder Lambs (R/kg) | 20.55 | 23.17 | | |

**FNB Agri-Weekly:** 2015/02/13

**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 January to June 2015 FEWS NET food security outlook issued in December 2014 reported that regional availability of staple cereal, mainly maize will remain higher than in previous years with most countries having remaining stock from the 2013/14 production year. Maize surplus-producing countries including South Africa, Tanzania, and Zambia are expected to have large exportable maize surpluses in 2014/15. South Africa will continue to be the main source of maize imports for southern African countries experiencing maize deficits. Informal cross border trade levels will be significantly below average as a result of above-average availability in the region, including countries that normally import.

The International Red Locust Control Organization (IRLCO) in its November 2014 report indicates that the red locust is likely to pose significant threat to crops in Kafue Flats of Zambia; the Buzi Gorongosa and Dimba plains in Mozambique; and the Ikuu-Katavi plains, Wembere and Malagarasi Basin of Tanzania, and Lake Chilwa plains (shared by Malawi and Mozambique) where large scale breeding is expected from January through February. The threat of armyworm resurgence is also likely in the region and based on recent reports from the IRLCO, which indicate that the current erratic rains across the SADC region provides suitable conditions for the armyworm breeding. During the outlook period humanitarian assistance needs are expected to increase from January to February, the peak lean season but the total needs are likely to remain below five-year average.

The January to June 2015 food security outlook for Mozambique issued in January 2015 indicate that households directly impacted by the flooding are likely to face Stressed acute food insecurity outcomes (IPC Phase 2) in the central and northern areas of the country that received extremely heavy rainfall.

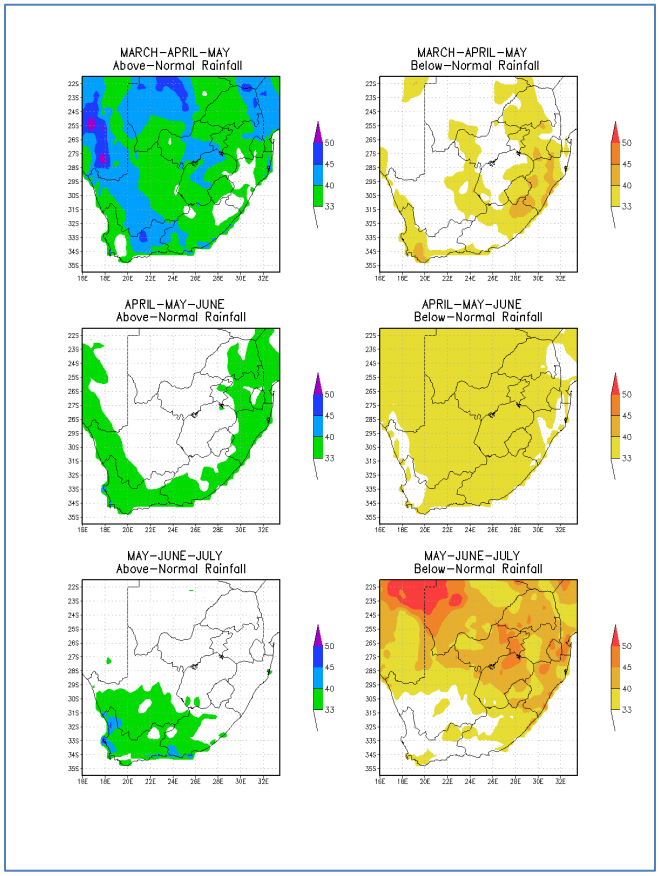
**Summary of the reports**

Rainfall was near normal to below normal over the majority of areas. Crops in most provinces have been affected by heat stress. Drought was reported in Free State, Mpumalanga and KwaZulu-Natal. Locust was reported on avocado in parts of the Eastern Cape. There were mortalities due to drought and lightning in KwaZulu-Natal. Veld fires were reported in parts of the Western Cape. The level of major dams has increased in some provinces but decreased in others.

## V. MONTHLY CLIMATE OUTLOOK

### Seasonal Climate Watch: March to July 2015

**Figure 1- Rainfall**




The forecasting system does not indicate particularly strong probabilities for any category and thus the forecast as a whole remains uncertain. There is an indication of possible wetter conditions for the winter rainfall regions to the south west during early winter, however it is recommended to monitor the forecasts for early winter in the coming months to build higher confidence.

**Figure 2 - Minimum temperatures**

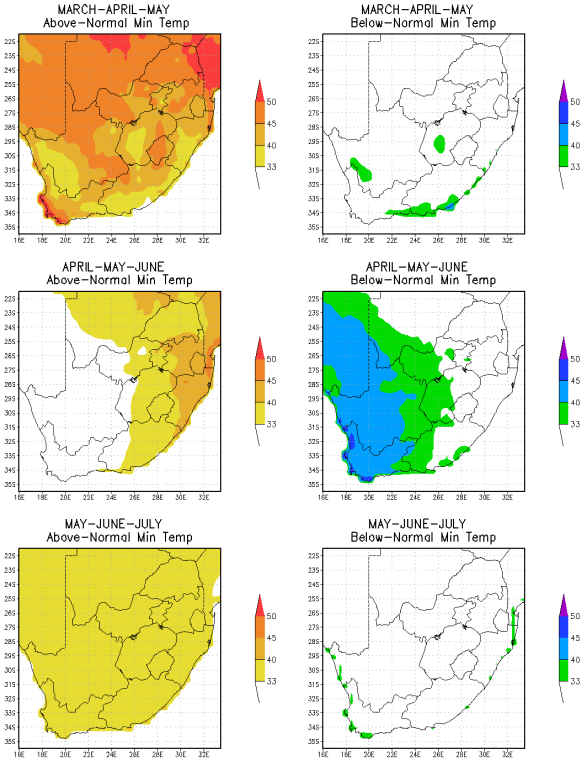
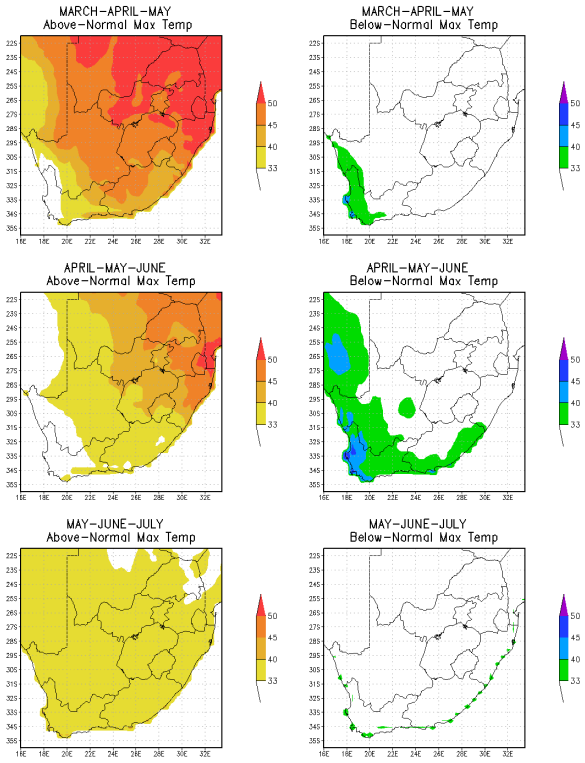



**Figure 3 - Maximum temperatures**




The forecasting system indicates above-normal maximum temperatures for most of the country during autumn and early winter. There is an indication of below-normal temperatures during autumn for the south western half of the country.

**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. MARCH-APRIL-MAY 2015.
- The forecast probabilities indicate the ***direction*** of the forecast as well as the amount of ***confidence*** in the forecast.

For further clarification using MARCH-APRIL-MAY 2015 rainfall (**Figure 1**) as an example:
Limpopo Province, for the above normal rainfall category, is shaded mainly in green **(33 - 40%)** with a patch of light blue in the east **(40-45%)**. In the below normal rainfall category it is shaded in yellow **(33 - 40%)** with a patch of white in the east **(<33%).**

Comparing the two:-

- above normal: green (33-40%), light blue (40-45%),
- below normal: yellow (33-40%), white (<33%)

The above normal rainfall and below normal rainfall categories for March to May 2015 have the same value and therefore cancel each other, but in the east the above normal rainfall category is higher and is therefore favoured. In instances where categories cancel each other, the farming community is advised to plan their activities in accordance with weather conditions that usually occur in their area during that time of the year.

**State of Climate Drivers**

Observations show that ENSO is currently near the border of neutral condition. Most of the forecast model's predictions indicate the persistence of a weak El Niño condition through the austral autumn to winter seasons. The impact of ENSO on the climate of our region at the vicinity of summer season is extensive.

In summation, generally, climatology rainfall conditions are anticipated for the end of summer into autumn over most areas with above normal temperatures. When rainfall is considered to be climatology, farmers are advised to plan their activities in accordance with weather conditions that usually occur in their area during that time of the year, also taking into consideration the high temperatures expected. 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

**Crop management:**

- Consider mulching to minimize evaporation.
- Control weeds regularly (especially during dry conditions between crops as competition for water resources will lower yields in the end).
- 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 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. 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. Heat stress – bad for productivity (very important)

Signs of heat stress:

- Bunching in shade, high respiratory rates, open mouth breathing.

What to do:

- Offer shade. Facilities/shelters for animals must be planned to give maximum protection from direct solar radiation during the day, yet allow for maximum radiative cooling during the night.
- Avoid handling animals during periods of high temperatures (typically between 12:00 and 16:00 in mid to late summer).
- Increase water availability and supply.
  - If higher water intake results in increase urine production, a loss of certain minerals may occur (sodium, potassium and magnesium) – higher concentrations of these minerals then need to be supplied within the diet.
- Wet with sprinklers/hose.
- Water ground.
- Feed less in the morning, more in late afternoon/early evening – reduce metabolic heat production during day. Alter diet if possible, to improve biological efficiency of converting feed units into production units.
- Control insects. Biting insects, such as flies can further stress livestock and interrupt their cooling. If pastures or buildings draw insects to livestock during times of extreme heat, provide proper insecticides or consider relocating livestock.

**Poultry**

- Provide cool, clean, quality drinking water as it will help keep poultry cool.
- Always make sure your poultry is in a well-ventilated area in which there is nothing to obstruct the airflow.
- Provide feed during the coolest part of the day.
- Supplement drinking water with electrolytes.
- Reduce the number of birds kept in a house or in an area.
- Avoid excessive activity during the hottest part of the day.

## H. Severe thunderstorms/flash floods

Severe thunderstorms occur frequently over the South African summer rainfall region during spring and summer.

The following may build resilience:

- Identify resources/facilities within 50 km that can be utilized and can be of help during emergencies.
- Be sure to have legal and adequate markings to identify your livestock.
- Stay well informed about livestock in your possession and conduct an inventory after the event.
- Monitor television and local radio stations for information regarding severe storms/flash floods in your 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.
- Keep pesticides and other chemicals in areas where water will not be contaminated during extreme rainfall/storm events.
- Inspect/repair farm dams
    - Before rainy season and after each event.

Dry conditions have been reported in many areas as a result of poor rainfall since the beginning of the year and high temperatures that led to heat waves in some areas. Crops have been adversely affected, the veld has deteriorated but livestock remains in reasonable to good condition. The seasonal forecast anticipates climatology in terms of rainfall and above normal temperatures. When climatology conditions are expected farmers are advised to plan their activities in accordance with weather conditions that usually occur in their area during that time of the year.

With climatology rainfall conditions and higher temperatures in mind, and current conditions in provinces, farmers are advised to conserve resources including water in accordance with the Conservation of Agricultural Resources Act (Act No. 43 of 1983). Water restrictions should also be adhered to when issued. Livestock should continually be kept in line with carrying capacity of the veld and additional feed including licks should be made available to give livestock sufficient nutrition. Firebreaks in winter rainfall areas should be maintained as the fire season continues. Severe thunderstorms with damaging winds and hail have been reported and are likely to continue during the remainder of summer; measures to combat these should be in place. Precautionary measures for heat waves should also remain in place. Localised flooding is also possible in summer rainfall areas; preventive measures for these should be maintained.

**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:-**

| | | |
|---|---|---|
| DAFF, Directorate: Climate Change and Disaster Management<br>Private Bag X93<br>Pretoria 0001<br>Tel:012 309 5722/23;<br>Fax: 012 309 5878<br>Email: MittaA@daff.gov.za | SAWS:<br>Private Bag X097<br>Pretoria<br>0001<br>Tel: +27 (0) 12 367 6000<br>Fax: +27 (0) 12 367 6200<br>http://www.weathersa.co.za | ARC:<br>Institute for Soil, Climate and Water<br>Private Bag X79<br>Pretoria 0001<br>Tel: 012 310 2500<br>Fax: 012 323 1157<br>Email: iscwinfo@arc.agric.za, http://www.arc.agric.za |