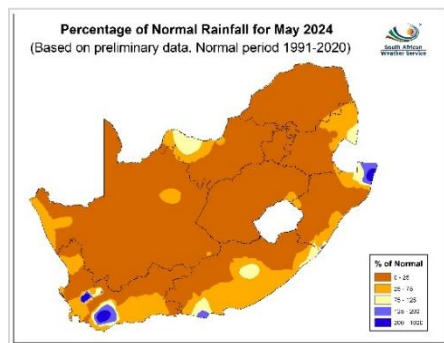


**National Agro-meteorological Committee (NAC) Advisory on the  
 2024 winter season  
 Statement from Climate Change and Disaster Risk Reduction  
 11 DALRRD 2023**

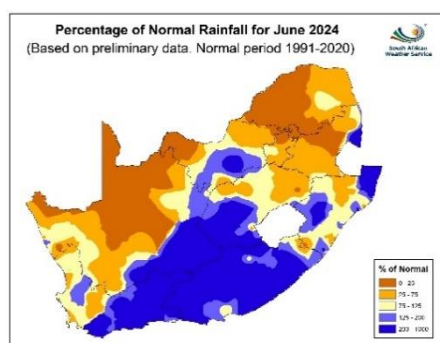
**02 August 2024**

Considering the seasonal climate watch as produced by the South African Weather Service (SAWS), 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 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 (rainwater 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 media and farmers' days to disseminate the information. Users are advised to be on the look-out and act on the daily extreme weather warnings as well as the monthly advisory.**

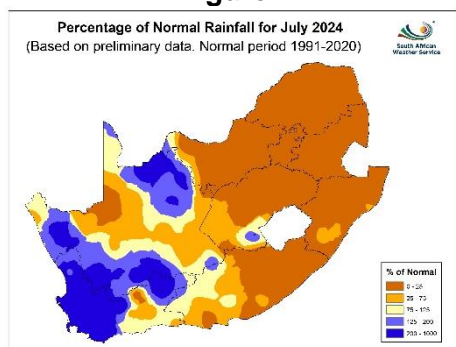
**I. CURRENT CONDITIONS**



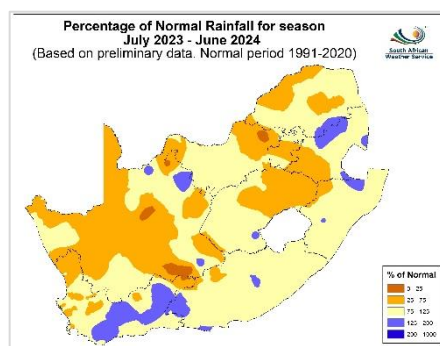
**Figure 1**



**Figure 2**



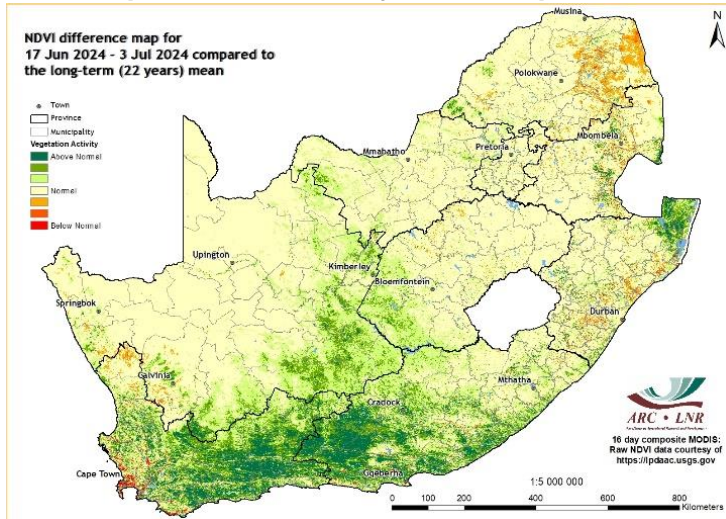
**Figure 3**



**Figure 4**

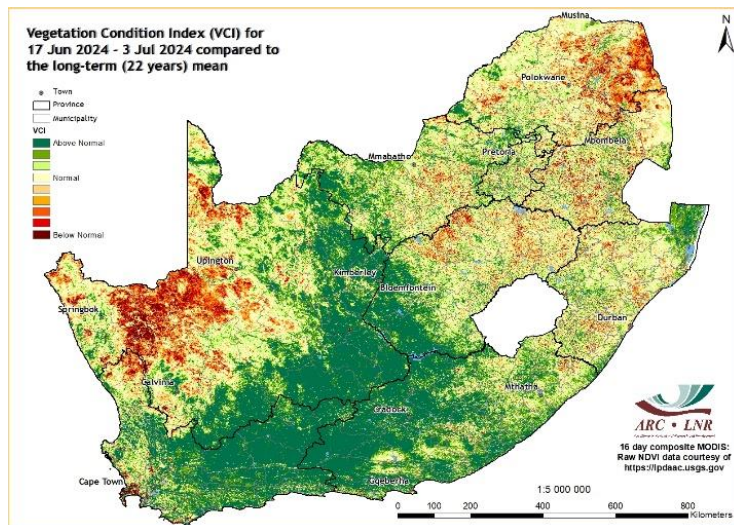
During May, below-normal rainfall was received over most parts of the country (**Figure 1**). In June, rainfall increased resulting in above-normal rainfall over the southern parts of the country (**Figure 2**). July received above-normal rainfall in the southwestern parts of the country including parts of the Northern Cape (**Figure 3**). The remainder of the country received below-normal rainfall. The season July 2023 - June 2024 received near-normal rainfall in many areas but below-normal over the Northern Cape, eastern Free State, eastern North West, parts of Gauteng, south-western Mpumalanga, and parts of Limpopo (**Figure 4**).

#### NDVI map: 17 June – 3 July 2024 compared to the long-term mean



Compared to the historical averaged vegetation activity, the 16-day NDVI map for mid-June into early July shows that the central interior and northern parts of the country experienced mostly normal vegetation activity while the Cape provinces experienced mostly above-normal conditions.

#### VCI map: 17 June – 3 July 2024 compared to the long-term mean



The 16-day VCI map for mid-June into early July indicates that the western parts of the Northern Cape, majority of Limpopo experienced below-normal vegetation conditions. The eastern parts of Northern Cape, most of the Western Cape and Eastern Cape experienced above-normal vegetation conditions.

## **II. CONDITIONS IN THE PROVINCES DURING JUNE/JULY**

### **Eastern Cape**

**NIL REPORT.**

### **Free State**

Above-normal rainfall was received in the south in June but below-normal in other areas. Snow occurred in the eastern Free State. Winter pastures under irrigation are in good condition. Livestock condition is fair. Farmers have been advised to continue with supplementary feeding especially protein rich feed for lambing sheep. Fruit tree farmers have been advised to conduct winter pruning during this dormant period to control vigour of their orchards especially in Bethlehem, Ficksburg and Clocolan. At the beginning of July veld fires burnt many hectares of veld in Thabo Mofutsanyana, Xhariep, Lejweleputswa, and Fezile Dabi Districts. Assessments are being conducted to determine the extent of damages. The average level of major dams has decreased as compared to the previous year (83% in 2024; 97% in 2023).

### **Gauteng**

The province received below-normal rainfall. Summer crop farmers have completed harvesting maize and soyabeans. Other farmers baled the organic debris while others allowed livestock to graze. Some farmers were negatively affected by frost which destroyed crops. The veld and livestock conditions remain reasonable. Veld fires have been reported and assessments are underway. The average level of major dams has decreased to 85% when compared to 97% of 2023.

### **KwaZulu-Natal**

The province had sporadic storms that cause havoc with above-normal rainfall along the coast while large parts of the province received near-normal to normal rainfall in June. Planted wheat and winter pastures are in good condition. The veld and vegetation conditions across the province are good due to rain and warm temperatures. Livestock condition is also good across the province. There were veld fires in King Cetshwayo, uThukela, and uMzinyathi Districts. The veld fires destroyed homes in rural areas. Livestock and farms were also affected. Assessments are being conducted to verify the extent of damages. The average level of major dams has decreased as compared to the previous year (88% in 2024; 90% in 2023).

### **Limpopo**

The province received below-normal rainfall. Farmers utilising irrigation have planted vegetables such as spinach and beetroot while others continue with harvesting. Dry land farmers harvested their crops and winter crops are growing. Veld conditions in most areas have improved. The conditions of livestock are reasonable to poor and farmers have been advised to provide feeds to supplement and to destock older animals to prevent mortalities and production loss. Incidents of very dry conditions, frost damages and veld fires were reported in various parts of the province. Due to that, the department is conducting awareness campaigns on disaster risk reduction measures and conducting risk assessments. The average level of major dams is at 79% in 2024, as compared to 88% of 2023.

### **Mpumalanga**

Below-normal rainfall was received. Harvesting of summer grain crops is complete. Vegetable crops are in good condition, however very cold conditions damaged crops in parts of Bushbuckridge and Nkomazi Local Municipalities. The veld is in reasonable to poor condition and planted pastures are in good condition in Gert Sibande District. Livestock is in reasonable to poor condition. There were veld fires in various districts that burnt grazing, infrastructure and resulted in livestock mortalities. Assessments are underway to determine the extent of the damage. The average level of major dams

has decreased when compared to the previous year during the same period (92% in 2024; 97% in 2023).

### **Northern Cape**

Below-normal rainfall was received but above-normal in the south-east. Crops under irrigation are in good condition and normal yields are expected. Grazing is deteriorating in some areas and livestock is still fair to good. Most dam levels are decreasing as compared to last year this time. The average level of major dams has decreased (83% in 2023; 95% in 2024).

### **North West**

Mainly below-normal rainfall was received. The veld and livestock are in reasonable to poor condition. There were veld fires in Bojanala and Dr Kenneth Kaunda and assessments are being conducted. The average level of major dams has decreased (73% in 2023; 88% in 2024).

### **Western Cape**

Wet and cold conditions prevailed during June. Rainfall varied from normal in the western parts to above-normal in the eastern regions. Heavy rainfall caused widespread flooding in the Cape Winelands, Overberg, and Garden Route Districts. The harvesting of citrus fruit was seriously affected by the flooding. The conditions for winter grain improved to support plant germination, growth, and development. However, the excessive rain caused widespread flood of fields. The effect of the late onset of the rain on the grain yield will only be seen later in the season. Natural veld and planted pasture conditions are good. Livestock conditions is good. The average water level in major storage dams stands at 93%, 3% above the year-on-year value of 90%.

### **Information on level of dams is obtained from the Department of Water and Sanitation**

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

**Dam levels as at 29/07/2024**

## **III. SADC REGION**

According to the June Famine Early Warning Systems Network (FEWS NET) the impacts of the 2023/24 El Nino are likely to drive and expand the area that may experience Crisis (IPC Phase 3) outcomes from June 2024 to January 2025 in Zimbabwe, southern Mozambique, southern Malawi, southern Zambia, and southern Angola. Also, the lean season is expected to start earlier.

[The Integrated Food Security Phase Classification (IPC) is a set of standardized tools that aims at providing a "common currency" for classifying the severity and magnitude of food insecurity.]

Source: <http://www.fews.net/southern-africa>

### **Summary of the reports**

Planted winter crops are mostly in reasonable to good condition. However, flooding in the Western Cape could have negative impacts on the yields. Harvesting of summer crops has concluded. The veld and livestock are in reasonable to poor condition. Very cold conditions resulted in frost damages to crops in Gauteng, Mpumalanga, and Limpopo Provinces. Veld fires caused extensive damages to veld, infrastructure, livestock mortalities in the Free State, Mpumalanga, Gauteng, Limpopo and in KwaZulu-Natal there was also loss of human lives. Assessments are being conducted to determine the extent of damages. The average level of major dams has increased in the Western Cape and Eastern Cape but decreased in other provinces.



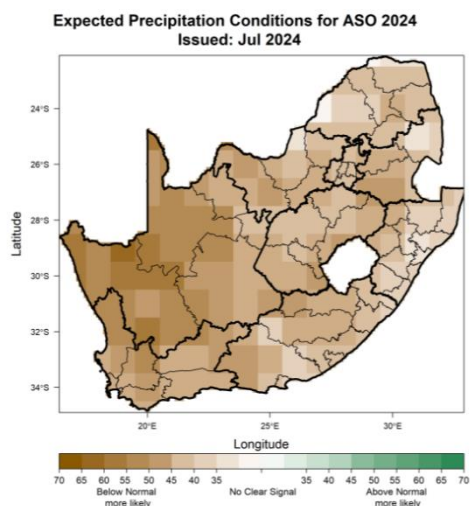
## IV. MONTHLY CLIMATE OUTLOOK

### Seasonal Climate Watch: August to December 2024

#### State of Climate Drivers

The El Niño-Southern Oscillation (ENSO) is currently still in a Neutral state and is predicted to weaken further. However current predictions are mixed in whether it will weaken towards a La Niña state during our next summer season. It is advised to monitor the ENSO system, as significant changes in the system may occur after the winter period due to increased prediction skill.

**Figure 1 – Rainfall**



With a potential La Niña event on the horizon to affect the next summer season and early indications of above-normal rainfall over most of the summer rainfall areas during Oct-Nov-Dec (OND), the initial outlook is positive for good rainfall in summer. There is an exception however for the Limpopo region which still indicates below-normal rainfall that can be expected going into the early summer period. Mostly drier conditions are still expected over the country during spring.

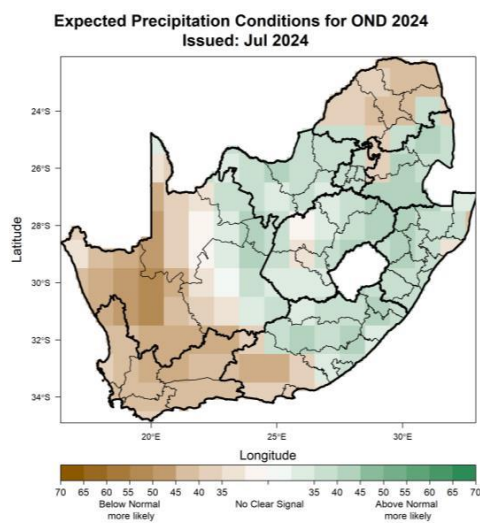
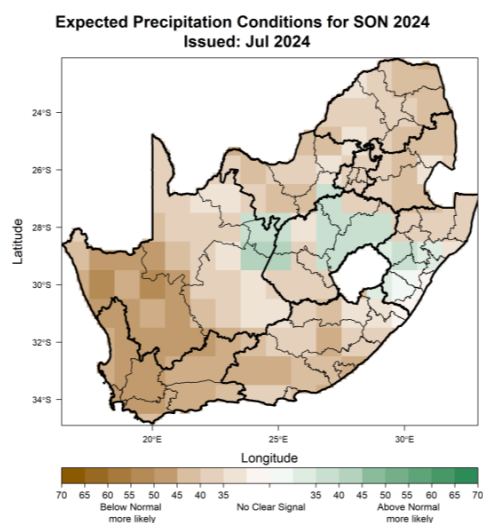
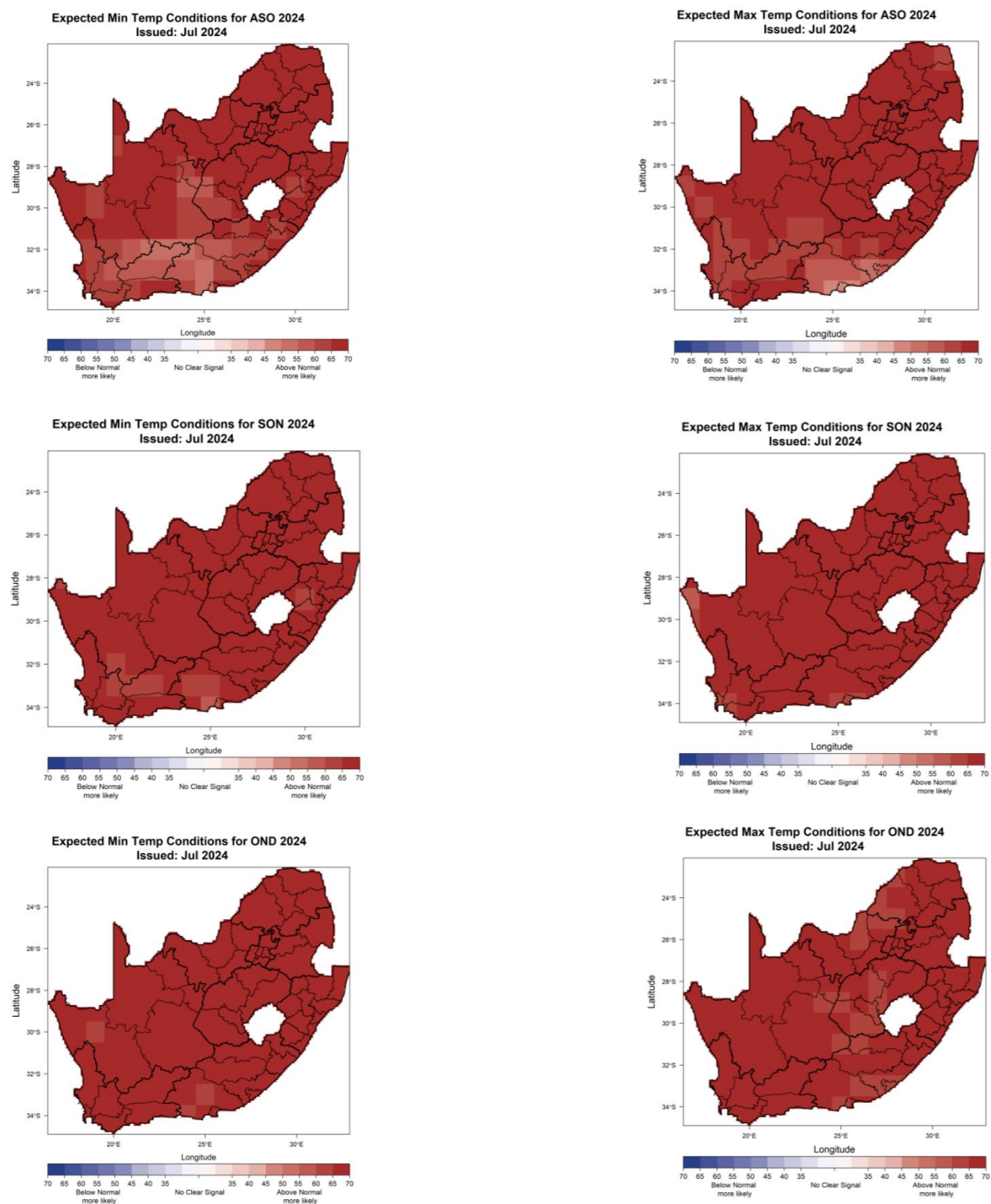


Figure 2 – Minimum and Maximum temperatures



Minimum and maximum temperatures are expected to be mostly above-normal countrywide for the forecast period.

In summary, below-normal rainfall is anticipated for the end of winter. Early indications anticipate favourable conditions during the summer season as above-normal rainfall is likely. Temperatures are expected to be above-normal. 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:

## **V. SUGGESTED STRATEGIES**

### **A. Winter crops: rain-fed crop production**

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 especially where there are water leaks.
- Be aware of the state of regional water resources and whether it will be adequate for irrigation.
- Timing of irrigation - rather late afternoon or early evening to reduce evaporation.
- Manage irrigation so that the plant receives water only when needed.
- 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**

- Keep stocking rates conservative and even lower to protect grazing.
- Never exceed carrying capacity of plant associations.

- Provide lots of drinking points where possible.
- Provide additional fodder and 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). However, ensure that urea does not come into contact with water as it can become toxic.
    - 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/ overgrazing).
- If grazing is in danger, herd animals into pens where different animals can be segregated and fed separately.

## **E. Grazing**

- 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 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.
- Spread water points evenly.

## **F. Pests and diseases**

### **Crops**

- Fruit crop farmers should regularly scout for pests and diseases and contact the local agricultural office for advice on best control measures. Farmers should further implement phytosanitary measures.

### **Livestock**

- Follow the vaccine routine and consult with the local veterinarian.

## **G. Veld fires**

Provinces and farmers are advised to maintain firebreaks in all 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 must 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 flammable material capable of carrying a veld fire across it.
- Firebreaks may be temporary or permanent.
- Firebreaks should consist of fire-resistant vegetation, non-flammable materials, bare ground or a combination of these.
- Firebreaks must be 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 favourable for veld fire 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 veld fire:**

- 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.

**H. Flooding**

Heavy rainfall raises the water level. When the water level is higher than the riverbanks or the dams, water flows out from the river and flooding occurs.

**Preventive measures:**

- Construction of proper drainage systems. Drains must be cleaned constantly as they ensure proper water irrigation.

- Mechanical land treatment of slopes such as contour ploughing or terracing to reduce the runoff coefficient.
- Construction of small water and sediment holding areas.
- Construction of floodways (man-made channels to divert floodwater).
- Terracing hillsides to slow flow downhill.
- Water pumps in rivers likely to be affected should be lifted from the riverbanks when a warning for heavy rain has been issued.

#### **What to do when flooding is forecasted:**

##### **Avoid:**

- Cutting grass in the rainy season as this can result in nutrient depletion.
- Applying fungicides and pesticide (plants and animals).
- Applying Nitrogen fertilizer as this can burn plants. Dumping fertilizer in one spot can cause the roots below the fertilizer to be burnt and die.
- Irrigation, this can result in waterlogging leading to nutrient depletion.

##### **Other measures to implement:**

- Cover Urea licks to prevent them from becoming toxic.
- Provide shelter for animals (young ones can die easily).
- Leave cultivated areas coarse.
- Relocate/ move animals to a safe place.
- Be extra cautious for pest and diseases after rain has fallen, as high moisture content and high temperatures may trigger these.
- Assume that flood water contains sewage and might be harmful for human and livestock consumption.
- Before leading livestock across a river, check whether the water level is rising. This is especially necessary if it is already raining.

## **I. Erosion**

Erosion is the wearing away of soil and rocks by the action of natural forces, for example, water and wind. The loose and dissolved materials move from one location to another. Erosion therefore may reduce agricultural production potential.

##### **Preventative measures for erosion:**

- Do not burn vegetation.
- Keep vegetation cover – e.g., shrubs, grass, small trees; a cover crop may be used to increase organic material and increase soil structure.
- Plant permanent vegetation e.g., perennial grasses where possible.
- Maintain any remaining vegetative cover, e.g., maize stubble during winter wheat sowing, as it acts as a blanket, traps eroded particles and reduces the wind speed at ground level.
- Plant evergreen trees growing densely and perpendicular to the typical wind direction during winter and spring as wind breaks.
- Increase water infiltration by correct management of soil e.g., reduce frequency of plough and use minimum tillage.
- Mulch: to increase infiltration, reduce evaporation, and reduce raindrop impact as well as wind erosion.

- Construct retaining walls around gardens.
- Avoid soil compaction by roughening the soil surface,
  - Furrows and tillage ridges can trap loose soil.
- Farm along contours as this reduces slope lengths.
- Prevent overgrazing.
- Practice conservation farming
  - Maximize retention of crop residues.

## **J. Cold spells (snowfall and frost)**

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 several 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 windbreak, 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.

Planted winter crops are generally in reasonable to good condition. The veld and livestock are in reasonable to poor condition but good where supplementary feed is provided. Veld fires caused extensive damages in many summer rainfall areas and assessments are being conducted. The seasonal forecast anticipates below-normal rainfall at the end of winter into spring and above-normal temperatures are expected countrywide.

Farmers are advised to follow the weather and climate forecasts regularly to make informed decisions, and continually conserve resources in accordance with the Conservation of Agricultural Resources Act 1983, (Act No. 43 of 1983).

The veld is dry in summer rainfall areas and therefore livestock should be kept in balance with carrying capacity of the veld and provided with additional feed such as relevant licks. Also, the livestock should be provided with enough water points on the farm as well as shelter during bad weather conditions including during very cold conditions. Veld fires have been reported in many provinces. Therefore, the creation and maintenance of fire belts should be prioritised along with adherence to veld fire warnings. Episodes of cold spells and localized flooding resulting from frontal systems have occurred and are still likely; therefore, measures should be in place. Farmers are encouraged to implement strategies provided in the early warning information issued.

**The users are urged to continuously monitor, evaluate, report, and attend to current Disaster Risk Reduction 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 monthly advisory. 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 2002, (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: <https://www.dalrrd.gov.za/>.

**For more information contact:-**

<p>DALRRD, Directorate: Climate Change and Disaster Risk Reduction Private Bag X250 Pretoria 0001 Tel: 012 319 6775/ 6794 Email: <a href="mailto:MittaA@Dalrrd.gov.za">MittaA@Dalrrd.gov.za</a></p> 	<p>SAWS: Private Bag X097 Pretoria 0001 Tel: 012 367 6000 Fax: 012 367 6200 <a href="http://www.weathersa.co.za">http://www.weathersa.co.za</a></p> 	<p>ARC: Institute for Soil, Climate and Water Private Bag X79 Pretoria 0001 Tel: 012 310 2500 Fax: 012 323 1157 Email: <a href="mailto:iscwinfo@arc.agric.za">iscwinfo@arc.agric.za</a>, <a href="http://www.arc.agric.za">http://www.arc.agric.za</a></p> 
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