National Agro-meteorological Committee (NAC) Advisory on the 2020/21 summer season
Statement from Climate Change and Disaster Risk Reduction
05 DALRRD 2020

02 February 2021

In light of 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 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 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](image1.png)

**Figure 1**
Percentage of Normal Rainfall for November 2020
(Based on preliminary data. Normal period 1981-2010)

![Figure 2](image2.png)

**Figure 2**
Percentage of Normal Rainfall for December 2020
(Based on preliminary data. Normal period 1981-2010)

![Figure 3](image3.png)

**Figure 3**
Percentage of Normal Rainfall for 11-20 January 2021
(Based on preliminary data. Normal period 1981-2010)

![Figure 4](image4.png)

**Figure 4**
Percentage of Normal Rainfall for season July 2020 to December 2020
(Based on preliminary data. Normal period 1981-2010)
In November, North West Province, the north-eastern parts of the Northern Cape and parts of the Western Cape received above normal rainfall (Figure 1). Remaining regions in the central interior received near normal rainfall, while other areas experienced below normal rainfall. December received normal rainfall but above normal mainly over the central interior (Figure 2). The south-western parts of the country remained dry. During mid-January much of the country received normal rainfall but above normal towards the west (Figure 3). Some areas did receive below normal rainfall. Near normal rainfall was received from July to December 2020 (Figure 4). However, the rainfall was below normal largely over parts of the Northern Cape. Above normal rain fell over the western parts of North West and north-eastern Northern Cape.

**NDVI map: December 2020 compared to the long-term mean**

Below normal vegetation activity can be observed mainly in parts of the Western Cape, south-eastern areas of the Northern Cape, Sarah Baartman District of the Eastern Cape, northern KwaZulu-Natal and some isolated areas in Limpopo and Mpumalanga. Most of the interior experienced normal to above normal vegetation activity.

**VCI map: December 2020 compared to the long-term mean**

Far below normal vegetation conditions continue to prevail over much of the Northern Cape, northern parts of the Western Cape and Sarah Baartman District of the Eastern Cape. Above normal vegetation conditions can be observed over the remainder of the country.

(The VCI is a better indicator of water stress than the NDVI.)
II. CONDITIONS IN THE PROVINCES DURING DECEMBER/JANUARY

Eastern Cape
NIL REPORT.

Free State
Normal to above normal rainfall was received but water restrictions remain in place. Flooding occurred in Fezile Dabi, Thabo Mofutsanyane and Lejweleputswa. This resulted in damages to infrastructure such as silos, houses, workshops, vehicles, planted crops, soil and various farm mechanization and farm roads. Harvesting of wheat is complete but the yield is far below normal due to fewer hectares being planted. The veld and livestock are in good condition due to rain received. However, most farmers still have to vaccinate their herds against pulpy kidney especially sheep due to the abundance of fresh and green grass. Summer and spring pastures are in very good condition especially those that are under irrigation. The average level of major dams has increased as compared to the previous year during the same period (95% in 2021; 69% in 2020).

Gauteng
NIL REPORT.

KwaZulu-Natal
Near normal rainfall was received. In Umkhanyakude, UMgungundlovu and UMzinyathi Districts there was livestock mortalities and human lives lost due to lightning strike and drowning respectively. The Drought Monitor for December 2020 indicates an improvement in the districts of Amajuba, Zululand, Uthukela, UMgungundlovu and Ethekwini to level 1 Drought Advisory. The remaining districts are at level 3, Minor drought. Maize has germinated well and early-planted maize is already tasselling. Summer pastures are green and starting to show signs of good growth and bulk accumulation. Livestock condition is improving because of the rains received. The quantity of grazing and pastures has improved. Farmers are urged to dip regularly for ticks to prevent tick-borne diseases which result in lower productivity as well as mortalities. Regular deworming is also vitally important especially in younger animals. Veld fires were reported in Kokstad and the areas of Mkhabathini, Richmond, Mid-Ilovo and Mpfana. The average level of major dams is at 59% as compared to 57% of 2020 during the same period.

Limpopo
Rainfall in December was near normal. Tropical cyclone Eloise resulted in heavy rain that caused flooding in most farming areas and many fields are immersed in water. Most agricultural activities have since been disrupted and agricultural property damaged. Livestock conditions are slowly deteriorating in areas where grazing is not enough. The veld condition is also poor in some areas. The average level of major dams has increased (65% in 2021; 62% in 2020).

Mpumalanga
The province received mainly normal rainfall. Planted crops are in good condition. The veld and livestock are in reasonable to good condition due to rain received. In other areas the veld continues to recover. Tropical cyclone Eloise resulted in heavy falls that led to flooding. The average level of major dams has decreased to 72% as compared to 74% of 2020 during the same period.

Northern Cape
NIL REPORT.
North West
Normal to above normal rainfall was received. Severe thunderstorms caused livestock mortalities in JB Marks Local Municipality. In Dr Ruth Segomotsi Mompati there was flooding where livestock structures were destroyed. The veld and livestock conditions have improved due to rain received. There was a report of veld fire in Bojanala District. The average level of major dams is at 64%, as compared to 67% of 2020.

Western Cape
NIL REPORT.

Information on level of dams is obtained from the Department of Water and Sanitation
Dam levels as at 2021/01/25

III. AGRICULTURAL MARKETS

Livestock domestic markets
FNB reported that beef prices saw further losses due to weak seasonal demand but still significantly higher as compared to last year. Good rains bode well for the cattle market as good pastures boost animal conditions. Prices are expected to retain the sideways trend in the short to medium term. Seasonal demand pressure continued to maintain lamb and mutton prices on the downside in recent trades. It is anticipated that prices will retain the current momentum. Pork and baconer prices retreated, and the short to medium term price outlook indicates limited upside. Poultry prices surprised with a slight uptick and prices are expected to trade at current levels in the short to medium term.

<table>
<thead>
<tr>
<th>Producer prices for selected livestock commodities</th>
<th>Beef (R/kg)</th>
<th>Mutton (R/kg)</th>
<th>Pork (R/kg)</th>
<th>Poultry (R/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open market: Class A / Porker / Fresh whole birds</td>
<td>51.18</td>
<td>83.94</td>
<td>34.19</td>
<td>25.63</td>
</tr>
<tr>
<td>(R/kg)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Open market: Class C / Baconer / Frozen whole birds</td>
<td>44.48</td>
<td>66.53</td>
<td>30.37</td>
<td>26.39</td>
</tr>
<tr>
<td>(R/kg)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract: A2/A3* / Baconer/ IQF (*includes fifth quarter)</td>
<td>50.12</td>
<td>82.96</td>
<td>25.47</td>
<td></td>
</tr>
<tr>
<td>(R/kg)</td>
<td></td>
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</tr>
<tr>
<td>Import parity price (R/kg)</td>
<td>45.01</td>
<td>87.20</td>
<td>33.81</td>
<td>18.71</td>
</tr>
<tr>
<td>Weaner Calves / Feeder Lambs (R/kg)</td>
<td>37.90</td>
<td>39.56</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FNB: 2020/01/27

IV. SADC REGION

The Famine Early Warning Systems Network (FEWS NET) report issued in January 2020 states that Southern Africa has been hit by a second, more severe wave of COVID-19, as most countries started economic recovery in late 2020. The most affected countries are South Africa, Zimbabwe, Lesotho, Mozambique, and Malawi, where the high case positivity rate led to reinstating restriction measures limiting people movement and closing some borders. This led to a reduction in access to income among some households; however, agricultural activities are generally continuing as typical. Most poor households are accessing food and income from agricultural labour, although wage rates remain below average. Most of the region is expected to continue facing Stressed (IPC Phase 2) and Crisis (IPC Phase 3) outcomes until the harvest beginning in April. Rainfall
across most Southern Africa has been average to above average, becoming one of the best in recent years. However, significantly below-average rainfall is of high concern in Madagascar, northern Mozambique, and central and southwestern Angola, where rainfall deficits are up to 50 percent of normal. In southern Madagascar, a drought is currently ongoing, negatively impacting crops and water availability. Rainfall over areas of eSwatini and northeastern South Africa, which touches the maize triangle, is somewhat below-average; however, due to high mechanization, these rainfall deficits are not of high concern. In January, Tropical Cyclone Eloise made landfall over northern Mozambique, decreasing rainfall deficits; however, destruction to crops and infrastructure were also reported.

FEWS NET further reported that the harvest is expected to be favourable across much of the region due to favourable rainfall performance and likely continued average rainfall. Crops across most of the region are in good condition at the vegetative to reproductive stage. Although in southern Madagascar, production is expected to be below average. As rainfall continues in much of the region, there is a risk of waterlogging and flooding in some areas, particularly Zimbabwe, central Mozambique, and areas of DRC and Malawi. While the rains are good, access to fertilizers remains limited to poor households. Pests and diseases also remain a threat. Despite the good rainfall season, the factors mentioned above will most likely contribute to a reduction in crop yields, especially for poor households. Most water bodies have recharged, with some reaching maximum capacity in Zimbabwe, Mozambique, and Malawi. Water availability for humans and livestock is well above past years in many areas; however, it remains poor in far south Madagascar. Pastures have also improved across the region due to good rains, driving improvements in livestock body conditions. It is expected that livestock production will improve with the improved pasture, with some households restocking livestock after multiple poor seasons in areas of the region. However, continued poor pasture in southern Madagascar is driving lower than normal livestock conditions.

[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
Normal rainfall was received but above normal mainly over the central interior during December. Tropical cyclone Eloise brought heavy rainfall over parts of Limpopo, Mpumalanga and KwaZulu-Natal in January that resulted in damages to agricultural infrastructure. Flooding was also reported in a number of provinces. Crops that have not been affected by flooding are reportedly in good condition. The veld and livestock are also in good condition due to rains received. Veld fires were reported in KwaZulu-Natal. The average level of major dams has increased in the majority of provinces. Over SADC, most of the region is expected to continue facing Stressed (IPC Phase 2) and Crisis (IPC Phase 3) outcomes until the harvest beginning in April.
V. MONTHLY CLIMATE OUTLOOK

Seasonal Climate Watch: February to June 2021

State of Climate Drivers
The El Niño-Southern Oscillation (ENSO) is currently in a La Niña state and the forecast indicates that it will most likely weaken but remain in a weak La Niña state towards the autumn season. The influence on South Africa from ENSO however is expected to dissipate as we move towards the autumn and winter months.

Figure 1 – Rainfall

The multi-model rainfall forecast for early autumn (Feb-Mar-Apr) indicates mostly above normal rainfall for most of the country with the exception of parts of Limpopo and the Eastern Cape to expect below-normal rainfall. Above-normal rainfall is also widely expected in mid- (Mar-Apr-May) and late-autumn (Apr-May-Jun) with the only exception again for parts of the Eastern Cape in mid-autumn.
Figure 2 – Minimum and Maximum temperatures

Minimum

Expected Min Temp Conditions for FMA 2021
Issued: Jan 2021

Expected Min Temp Conditions for MAM 2021
Issued: Jan 2021

Expected Min Temp Conditions for AMJ 2021
Issued: Jan 2021

Maximum

Expected Max Temp Conditions for FMA 2021
Issued: Jan 2021

Expected Max Temp Conditions for MAM 2021
Issued: Jan 2021

Expected Max Temp Conditions for AMJ 2021
Issued: Jan 2021
Mostly above normal minimum temperatures are expected in the north-eastern half of the country for the entire forecasts period with the south-western parts expected to be below-normal. Maximum temperatures show a similar pattern however the below-normal maximum temperatures are expected further north into the interior of South Africa.

In summary, above normal rainfall is anticipated but below normal in parts of Limpopo and Eastern Cape during early autumn (February to April). Below normal maximum temperatures are anticipated but above normal in the north-eastern parts of the country. 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. **Crop management**

- Consider mulching to minimize evaporation.
- Control weeds regularly.
- Scout for pests and diseases regularly and control where necessary.
- Practice water harvesting techniques e.g. construction of basins, contours, ridges.

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).
    - 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 practices 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. 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.
• Irrigation farmers should monitor for pests and diseases especially those associated with humid and hot conditions.

Livestock
• Follow the vaccine routine and consult with the local veterinarian.

G. Veld fires

The 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 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 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. Heat stress – bad for productivity

- Signs of heat stress:
  Bunching in shade, high respiratory rates, open mouth breathing.
- What to do:
  - Offer shade.
  - Offer water - keep good quality water in front of animals.
  - Wet with sprinklers/fire hose.
  - Water ground.
  - Avoid overworking animals.
  - 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 considering relocating your livestock.

Poultry

- Provide cool, clean, quality drinking water to your poultry. Water will help keep your birds 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.

I. Wind Erosion

Wind erosion reduces agricultural production potential

Preventative measures for wind 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: Act as blanket, trap eroded particles –and reduce wind speed at ground level.
- Plant evergreen trees growing densely and perpendicular to 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 over grazing.
• Practice conservation farming
• Maximize retention of crop residues.

J. Severe thunderstorms

Building 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
  o Sufficient height to be above water level,
  o 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.

K. Flooding

• Safeguard belongings by relocating movable assets to safer areas i.e. irrigation equipment and livestock.
• Farmers should not to apply any production inputs.
• Protect horticultural crops to avoid damages by the storm.
• Cover feeds especially those contacting urea to avoid poisoning.
• Lift water pumps in the affected rivers from the river banks.
• Create waterways on access roads and in the fields.
• Open spillways to reduce pressure in the earth dams.
• Construct proper drainage systems – drains must be cleaned constantly as they ensure proper water irrigation.
• Construct small water and sediment holding areas.
• Terrace hillsides to slow flow downhill.
• Extra precaution needs to be taken for pests and diseases after rain has fallen, as the high moisture content may trigger population explosions.
• Before leading livestock across a river, establish whether the water level is rising. This is especially necessary if it is already raining.
• When flooding is forecast avoid:
  o Cutting grass as it may lead to nutrient depletion.
  o Applying fungicides and pesticide (plants and animals).
  o Applying nitrogen fertilizer, it can burn plants.
  o Dumping fertilizer in one spot, this can cause the roots below the fertilizer to be burned and die.
  o Irrigating as waterlogging can occur leading to nutrient depletion.
Copious rains have been received over the majority of summer rainfall areas. Tropical cyclone Eloise also brought more rainfall that resulted in flooding especially in Limpopo, Mpumalanga and parts of KwaZulu-Natal. Planted summer crops are in good condition except those impacted by floods. Also, other summer rainfall areas received heavy rains that resulted in flooding. Therefore measures should be in place to address the affected areas. The seasonal forecast anticipates above normal rainfall except for parts of Limpopo and Eastern Cape during early autumn (February to March). Maximum temperatures are expected to be below normal but above normal in the north-eastern parts of the country. With the seasonal forecast in mind, precautionary measures should be in place for localised flooding as the seasonal forecast indicates that rain is expected to continue for the remainder of the summer season. The veld and livestock conditions have recovered in many areas prior the impacts of floods. However farmers are still advised to keep livestock in balance with the available grazing and provide additional feed such as relevant licks. They should also provide enough water points on the farms as well as shelter during bad weather conditions. The farming community is advised to be on the lookout for the episodes of rain-bearing weather systems and respond accordingly.

Farmers are advised to put measures in place for pests and diseases particularly those associated with wet conditions following heavy rain in the country as well as the anticipated above normal rainfall in summer rainfall areas. Although abundant rain has fallen, farmers must continually conserve resources in accordance with the Conservation of Agricultural Resources Act 1983, (Act No. 43 of 1983). All farmers should follow the weather and climate forecasts regularly so as to make informed decisions.

Conditions conducive for veld fires remain in some areas, particularly the western parts of the country. Therefore, maintenance of fire belts should be prioritized as well as adherence to veld fire warnings. Incidents of heat waves are possible and therefore measures to combat these 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/.
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