



**National Agro-meteorological Committee (NAC) Advisory on the
2023 winter and spring seasons
Statement from Climate Change and Disaster Risk Reduction
12 DALRRD 2022**

29 August 2023

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

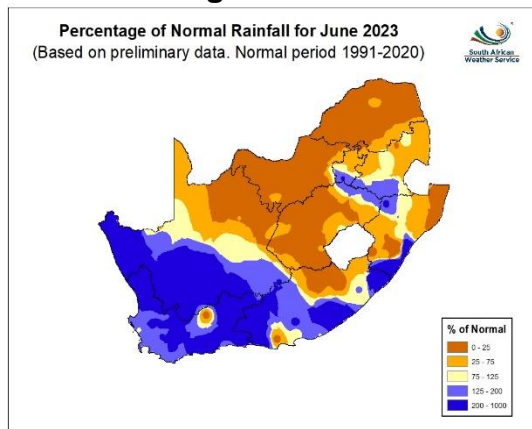


Figure 2

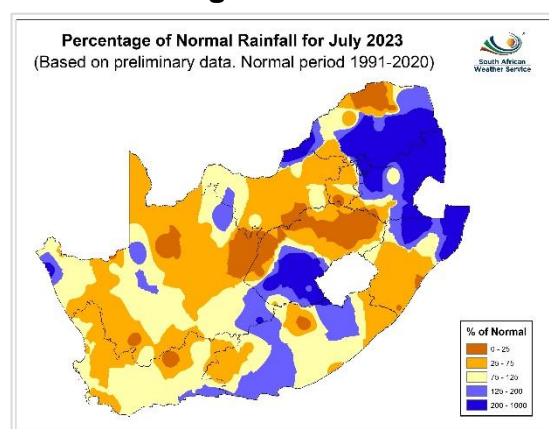


Figure 3

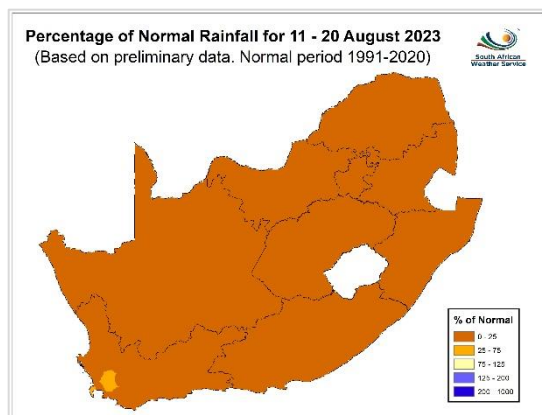
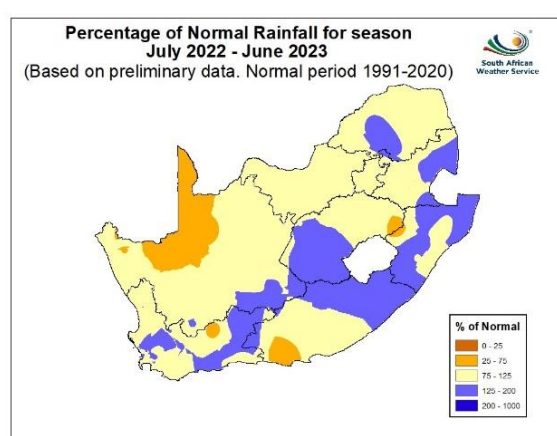
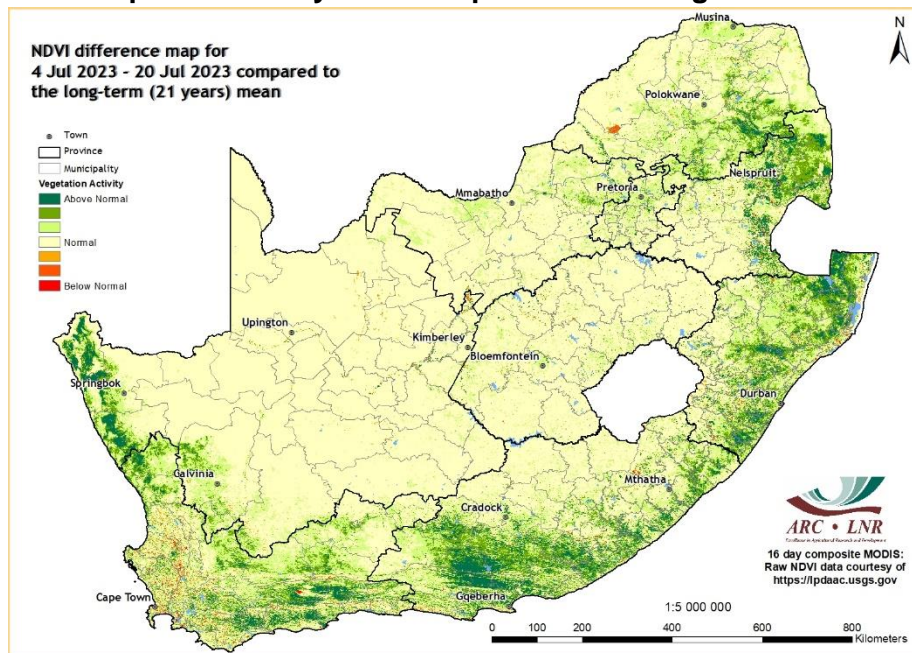


Figure 4



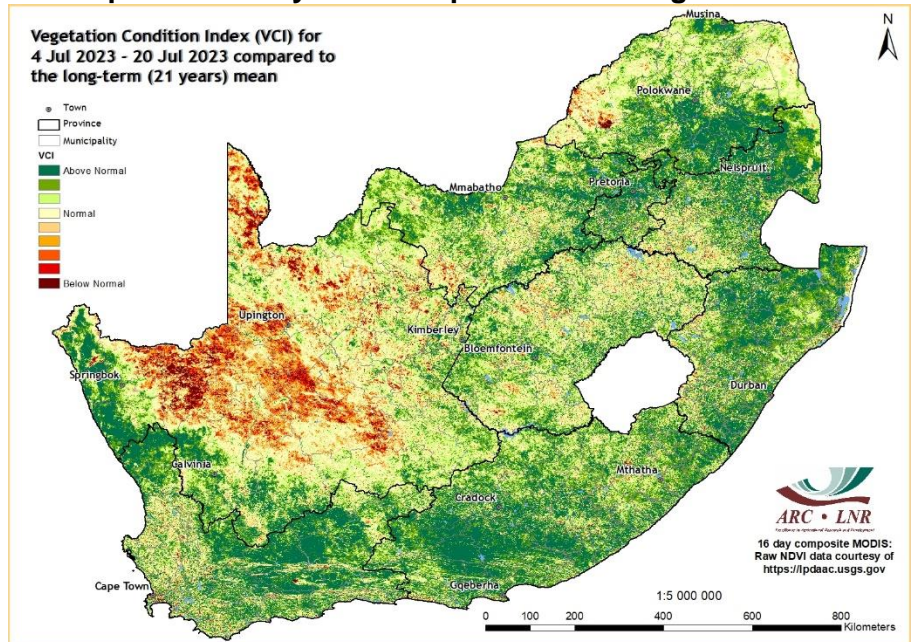
In June, the south and south-western areas of the country receiving above normal rainfall while most of the central and northern regions received below normal rainfall (**Figure 1**). July received a mixture of normal to below normal rainfall in most parts of the country (**Figure 2**). However, some eastern parts of the country as well as southern Free State and parts of the Eastern Cape received above normal rainfall. Mid-August was dry as below normal rainfall was recorded countrywide (**Figure 3**). For the season July 2022 – June 2023, near normal rainfall was received over the much of the country with above normal rainfall only over the southern parts of Free State, eastern parts of Eastern Cape as well as parts of Western Cape, KwaZulu Natal, Mpumalanga and Limpopo Provinces (**Figure 4**). ZF Mgcawu District Municipality of the Northern Cape received below normal rainfall.

NDVI map: 04 – 20 July 2023 compared to the long-term mean



Compared to the historical averaged vegetation conditions, the 16-day NDVI map for July shows that many parts of the country continue to experience normal to above normal vegetation activity.

VCI map: 04 – 20 July 2023 compared to the long-term mean



The 16-day VCI map for July indicates that most parts of the Northern Cape and the western parts of Limpopo experienced below normal vegetation conditions. Much of the remainder of the country experienced above normal conditions.

II. CONDITIONS IN THE PROVINCES DURING JULY/AUGUST

Eastern Cape

Rainfall received in July was mainly near normal with patches of below normal. The western parts received above normal rainfall in some areas. As a result, there has been improvement on irrigation, however loadshedding is having a converse effect. Vegetables are in full production in the Blue Crane Local Municipality. In the Great Kei Local Municipality in Amathole District a lot of maize was harvested and farmers will utilise it as feed for livestock. Pastures are in poor to reasonable condition but good in the Blue Crane Local Municipality. Rangeland is in poor condition and livestock is in poor to reasonable condition. The average level of major dams has increased to 81% in 2023, as compared to 71% of 2022.

Free State

Rainfall received was predominantly below normal. The veld has slightly improved compared to the same period during the previous year. Winter pastures are in good condition especially those that are under irrigation. Winter pruning has been completed especially in the eastern Free State where most fruit is produced. It is anticipated that the yield of apples will be higher due to cold units experienced during winter. Livestock conditions are reasonable. There were veld fires in Zastron, Barage, Rosendal, Botshabelo, Viljoenskroon, Thaba Nchu, Kroonstad, Warden, Ventersburg, Steynsrus, Brandfort, Winburg, and Tweespruit. Assessments are underway. The average level of major dams has decreased as compared to previous year (96% in 2023; 99% in 2022).

Gauteng

Rainfall received was below normal. Most grain farmers have harvested their crops. There were veld fires in Midvaal and Tshwane that burnt grazing land. Assessments are being conducted. Livestock is in reasonable to poor condition. There were new African Swine Fever cases reported on the West Rand and in Germiston and have been attended to. Highly pathogenic avian influenza was reported on a few commercial poultry layer farms in Tshwane and Ekurhuleni. The birds have been culled and disposed of. There was also an outbreak of Salmonella enteritidis and controlled slaughter of broiler birds was conducted. The average level of major dams has slightly decreased to 97% as compared to 98% of 2022.

KwaZulu-Natal

Typical winter conditions have prevailed with continuing decrease in rainfall however King Cetshwayo and uMkhanyakude reported heavy rains and strong winds. Farmers are establishing winter pastures. Due to winter rains, the moisture content of the soil is high. Many farmers have made bales and hailage. The veld and vegetation conditions are good due to the extended rains and warm temperatures. Livestock condition is fair to good. Dipping and deworming schedules should be adjusted according to sound veterinary and/or Extension Officials advice. Farmers should continue with winter feeding schedules. The average level of major dams remained the same as the previous year at 89%.

Limpopo

Above normal rainfall was received with patches of below normal. Vegetable production is continuing. The veld and livestock are in reasonable to poor condition. There were veld fires in the Waterberg District and assessments are being conducted. The average level of major dams is at 87%, remaining at the same level as the previous year during the same period.

Mpumalanga

Above normal rainfall was received in July. Crops are in good condition and harvesting is completed, while winter crops are growing well. The veld condition is fair to poor, and livestock condition ranges

from good, reasonable to poor. The average level of major dams has increased to 97% 2023 compared to 94% in 2022.

Northern Cape

NIL REPORT.

North West

Below normal rainfall was received. The veld and livestock are in reasonable to poor condition. Veld fires were reported in parts of Dr Ruth Segomotsi Mompati District Municipality and assessments are being conducted. The average level of major dams has increased to 88% when compared to 80% of 2022.

Western Cape

Rainfall received was normal to below normal in July. However, the southern and eastern summer rainfall areas received normal to above normal rainfall. The temperatures decreased in July but were within the normal range. Conditions for the fruit season improved due to the accumulation of above normal cold units and good rainfall during winter. The citrus harvesting season is continuing well. Winter crops are in good condition. However, water-logged fields due to the heavy rains prevents farmers from applying fertilizers and spraying fungicides. Veld and planted pasture conditions are good. The livestock condition is good. Occurrences of rabbit haemorrhagic disease in wild and domestic rabbits was reported, low pathogenic avian influenza viruses was detected on two ostrich farms in the Beaufort West and Oudtshoorn areas. These have been attended to. The average level of major storage dams has increased to 91% in 2023 as compared to 69% in 2022 during the same period.

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 2023/08/21

III. AGRICULTURAL MARKETS

Livestock domestic markets

According to FNB these are the latest price trends for livestock domestic markets.

Producer prices for selected livestock commodities	Beef	Mutton	Pork	Poultry
Open market: Class A / Porker / Fresh whole birds (R/kg)	52.85	88.78	32.18	34.48
Open market: Class C / Baconer / Frozen whole birds (R/kg)	47.80	66.04	31.16	34.65
Contract: A2/A3* / IQF (*includes fifth quarter) (R/kg)	52.60	87.08	-	32.45
Import parity price (R/kg)	53.34	92.45	55.36	35.19
Weaner Calves / Feeder Lambs (R/kg)	34.15	41.18	-	-

FNB: 2023/08/21

Major grain commodities

According to ABSA, SAFEX maize prices showed a reduced-price trend, falling by 0.3% for yellow maize and white maize respectively. Wheat prices followed the global increasing price trend while Soybean prices followed a decreasing price trend.

Commodity	Future Prices (2023/08/22) R/ton				
	Aug-23	Sep-23	Dec-23	Mar-24	May-24
White maize	3 615.00	3 631.00	3 751.00	3 824.00	3 870.00
Yellow maize	3 634.00	3 653.00	3 781.00	3 840.00	3 870.00
Wheat	6 762.00	6 702.00	6 455.00	6 601.00	n/a
Sunflower	9 137.00	9 171.00	9 398.00	9 220.00	8 732.00
Soybeans	9 592.00	9 624.00	9 835.00	9 685.00	8 972.00

SAGIS: 2023/08/24

IV. SADC REGION

The July Famine Early Warning Systems Network (FEWS NET) reported that harvesting of the main cereal season has mostly been completed under mixed conditions in the region resulting in improved availability and access to food. Minimal (IPC Phase 1) outcomes are expected in surplus-producing areas of Zimbabwe, Lesotho, Madagascar, DRC, central and northern Mozambique, and central and northern Malawi through most of the projection period. However, in areas where the 2023 harvest was impacted by cyclones, flooding, or prolonged dry spells, Stressed (IPC Phase 2) and Crisis (IPC Phase 3) outcomes are expected through the projection period. Households in conflict-affected areas of Cabo Delgado and internally displaced households in Ituri, North Kivu, and South Kivu in the DRC continue to experience Crisis (IPC Phase 3) outcomes due to limited agricultural production and access to income. Similarly, most returnees are continuing to recover their typical food and income sources and are likely continuing to face Crisis (IPC Phase 3) outcomes. Improved market supply of maize grain following the 2023 harvest has resulted in the price stability of staple foods across much of southern Africa. Most households are relying on their harvests for food, reducing market demand for grain.

[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

Winter crops are in good condition, whereas the veld and livestock are in poor to reasonable condition. Veld fires were reported in Gauteng, North West and Free State and assessments are underway. In Gauteng there were cases of highly pathogenic avian influenza and African Swine Fever. In the Western Cape low pathogenic avian influenza was reported on a few ostrich farms. The average level of major dams in the winter rainfall areas remains high.

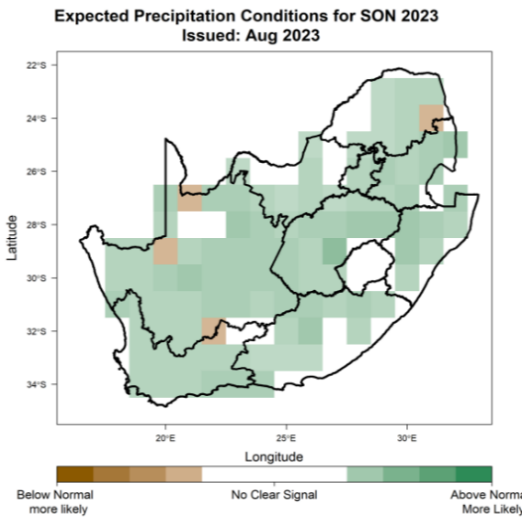
IV. MONTHLY CLIMATE OUTLOOK

Seasonal Climate Watch: September 2023 to January 2024

State of Climate Drivers

The El Niño-Southern Oscillation (ENSO) is currently in an El Niño state and according to the latest predictions is expected to persist through most of the summer months. ENSO's typical impact on Southern Africa is in favour for generally drier and warmer conditions during the summer seasons from October to March. Current global forecasts indicate a great deal of uncertainty for the typical drier conditions that South Africa experiences during an El Niño.

Figure 1 – Rainfall



The multi-model rainfall forecast indicates above normal rainfall for most of the country during mid-spring (Sep-Oct-Nov) and late-spring (Oct-Nov-Dec). The early-summer (Nov-Dec-Jan) however, indicates below normal rainfall over the central parts of the country and above normal rainfall for the north-east.

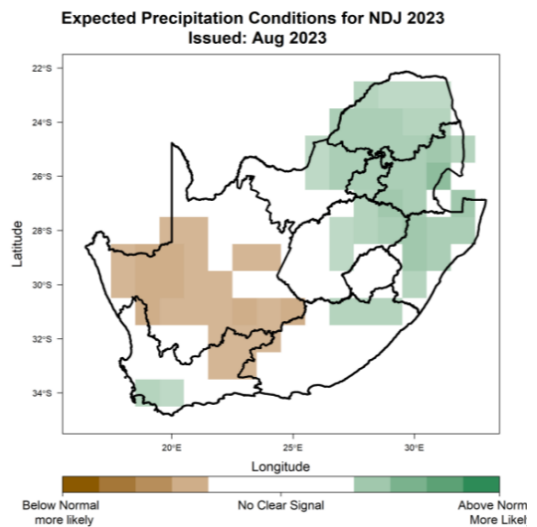
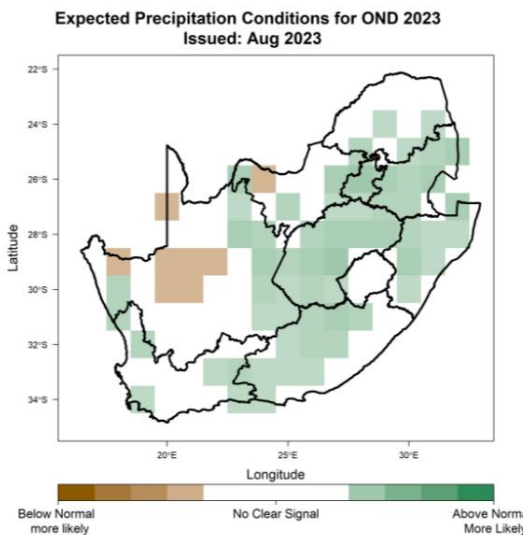
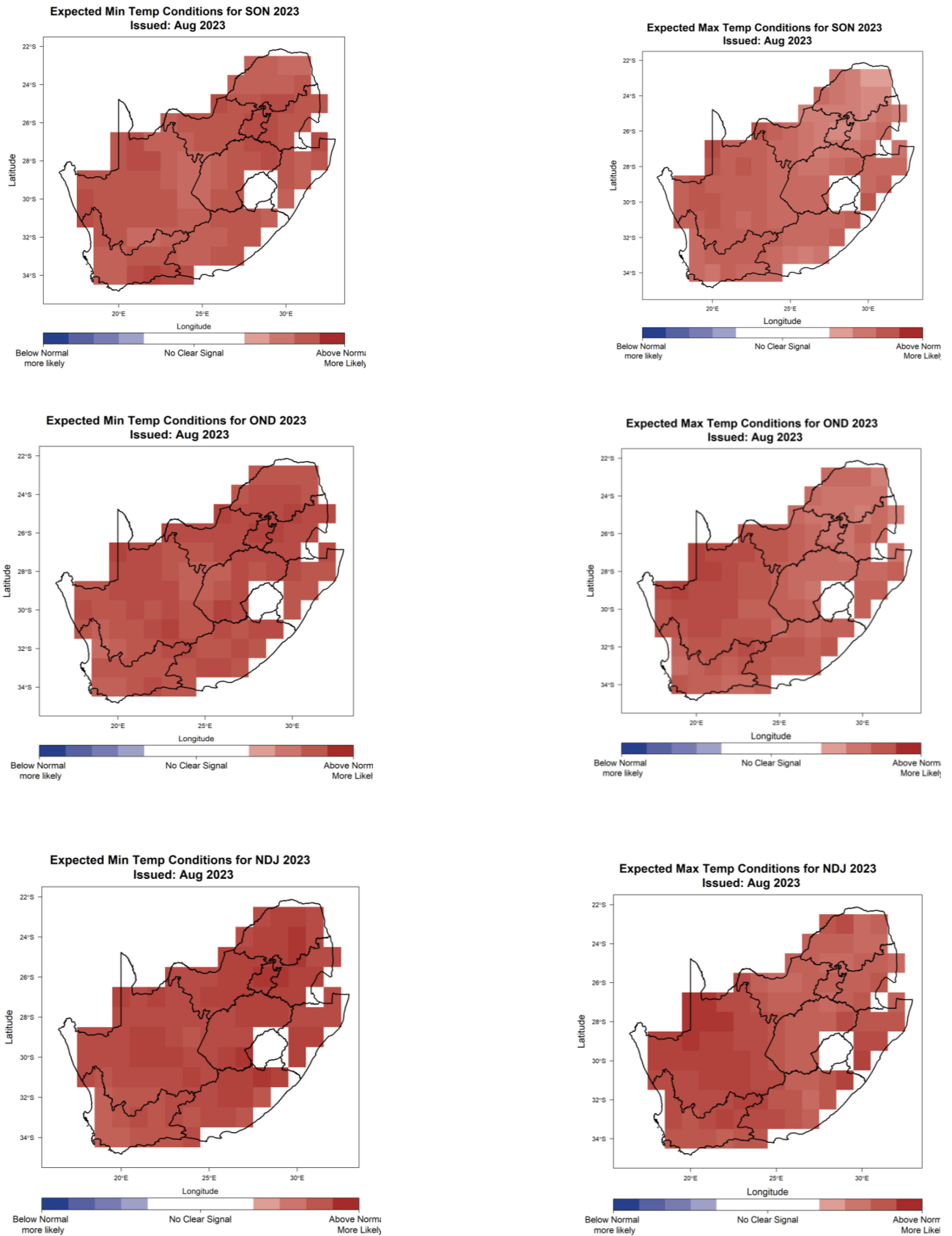


Figure 2 – Minimum and Maximum temperatures



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

In summary, above normal rainfall is expected during spring. Towards early summer, below normal rainfall is anticipated over the central parts of the country but above normal in the north eastern part of the country. 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. **Rain-fed crop production**

Soil choice:

- Choose suitable soil type.
 - ✓ Suitable soil and land use management practices that would control wind and water erosion in cultivated lands are suggested.
- Roughen the soil surface to enhance rain water penetration and reduce runoff.
- Minimise compaction by reducing the passing of heavy machinery in the field.

Land preparation:

- Avoid where possible soils with pronounced plough pans.
- For sequestration of atmospheric carbon in the soil, for increased biological activity, and to better conservation of water, zero or minimum tillage is advised where possible.
- Do not expand land under crop production unnecessarily.
- Prioritise fallow land.

Crop choice and planting:

- Choose short season, locally adapted cultivars as a precautionary measure.
- Provide flexibility and diversification.
- Stick to normal planting dates if appropriate and follow the weather and climate forecast regularly.
- Consider staggered planting-spreading over weeks.
- Do not experiment with new and unknown cultivars and also avoid unnecessary capital investments.
- Always practice crop rotation.
- Consider intercropping for improved soil structure and pest/diseases control.
- Planting in a controlled environment (e.g. green house) is advisable where possible.

Crop management:

- Adjust planting density accordingly.
- Consider mulching to minimise evaporation.
- Control weeds regularly.
- Consider a conservative fertilizing strategy during dry conditions.
- Consider organic fertilization.
- Scout for pests and diseases regularly and control where necessary.

- Wheat: The strategy proposed is to scout the plants regularly, correctly identify any pests or diseases and make informed decisions regarding reaction.

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 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 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. 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.

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.

I. 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.

J. Severe thunderstorms/flash floods

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:
 - 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.

The veld and livestock are in poor to reasonable condition in most areas. Above normal rainfall is anticipated in spring across the country becoming below normal in early summer over the central parts of the country. Above normal rainfall is anticipated for the north eastern parts of the country during early summer. Temperatures are expected to be above normal countrywide.

Land preparations for summer crops have begun in some areas. Dryland farmers are advised to wait for sufficient moisture before planting. Areas that have been constantly experiencing dry conditions should prioritise drought tolerant cultivars. In regions that are in reasonable condition, farmers are advised to prepare in line with the expected conditions i.e., in line with the seasonal forecast. However, they should not expand planting land unnecessarily. In addition, farmers should note that rainfall distribution remains a challenge, therefore not all areas might receive the anticipated above-normal rainfall that is well distributed. Farmers are also advised to put measures in place for pests and

diseases associated with wet and hot conditions as above-normal rainfall and high temperatures are anticipated during spring. Moreover, it is important for farmers to follow the weather forecast regularly to make informed decisions. Farmers using irrigation should comply with water restrictions in their areas. Farmers must continually conserve resources in accordance with the Conservation of Agricultural Resources Act 1983, (Act No. 43 of 1983).



Livestock should be kept in balance with carrying capacity of the veld and provided with additional feed such as relevant licks. Also, livestock should be provided with enough water points on the farm as well as shelter during bad weather conditions. Veld fires have been reported in several provinces and the risk remains, especially in summer rainfall areas. Therefore, the maintenance of fire belts should be prioritized as well as adherence to veld fire warnings. Episodes of flooding resulting from rain bearing weather systems are likely during spring and preventative 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: MittaA@Dalrrd.gov.za</p> 	<p>SAWS: Private Bag X097 Pretoria 0001 Tel: 012 367 6000 Fax: 012 367 6200 http://www.weathersa.co.za</p> 	<p>ARC: Institute for Soil, Climate and Water Private Bag X79 Pretoria 0001 Tel: 012 310 2500 Fax: 012 323 1157 Email: iscwinfo@arc.agric.za, http://www.arc.agric.za</p> 
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