agriculture, land reform & rural development
Department:
Agriculture, Land Reform and Rural Development
REPUBLIC OF SOUTH AFRICA

National Agro-meteorological Committee (NAC) Advisory on the 2020 spring and summer seasons
Statement from Climate Change and Disaster Risk Reduction
12 DALRRD 2019

07 September 2020

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

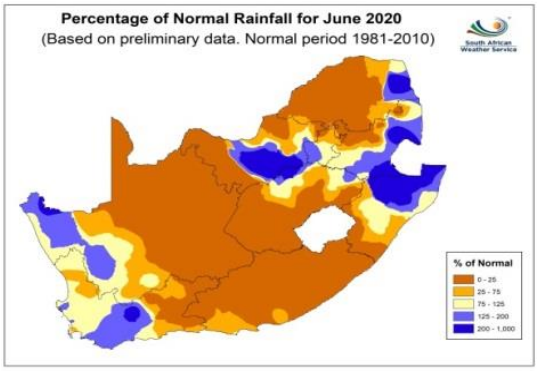


Figure 2

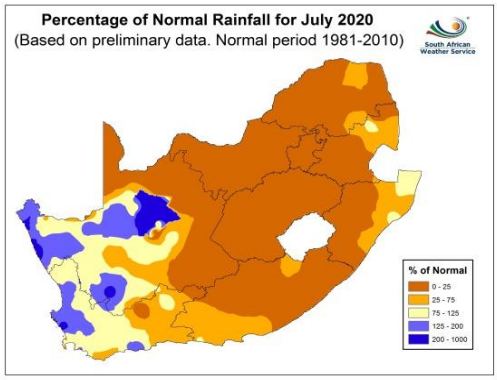


Figure 3

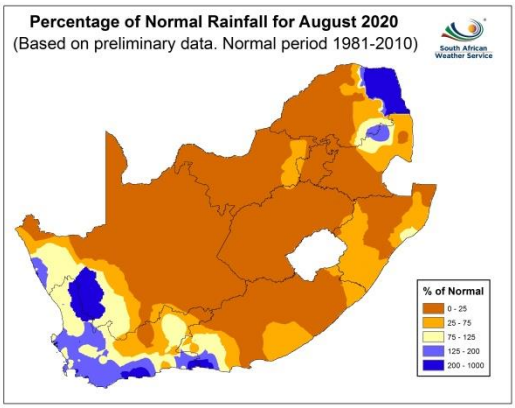
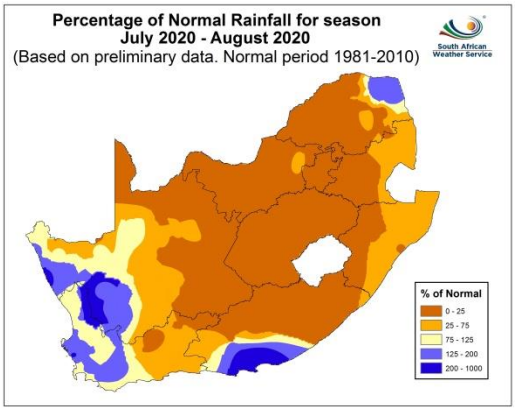
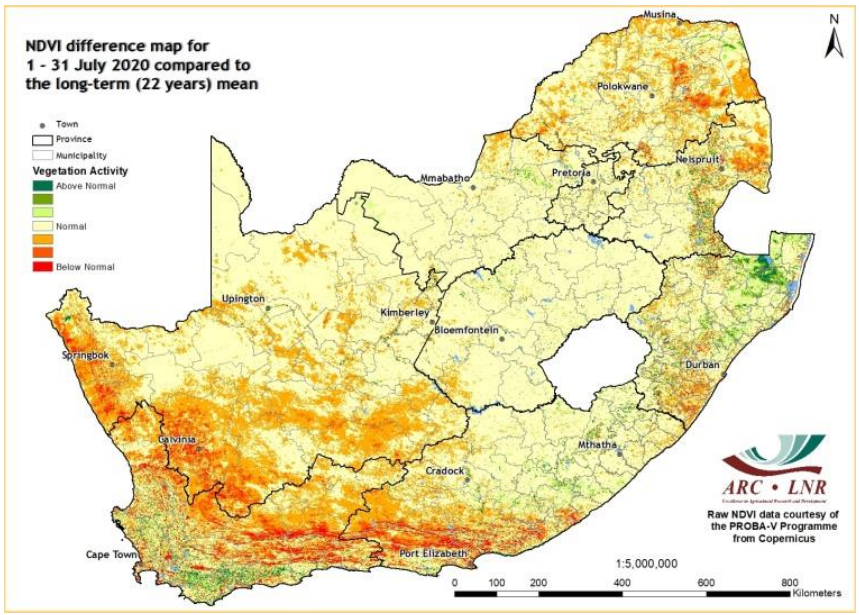


Figure 4



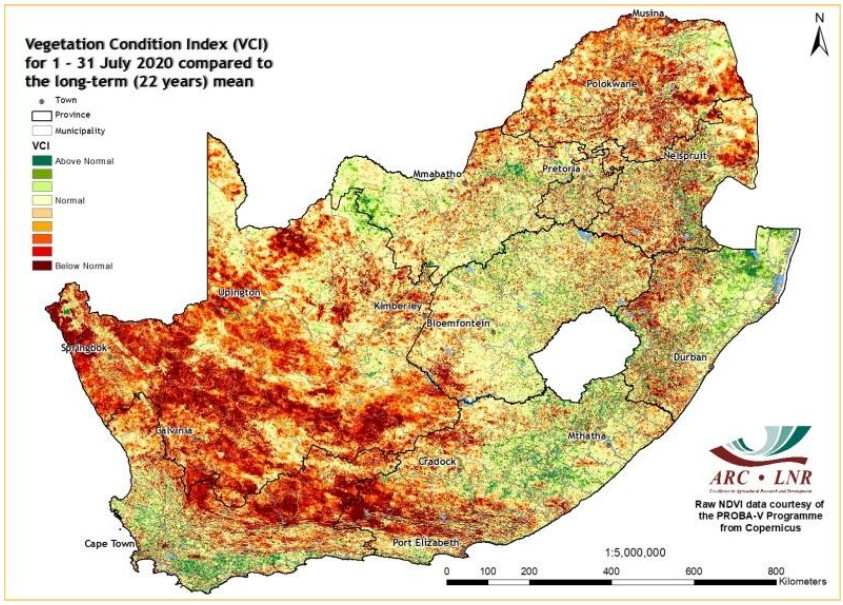
During June, below normal rainfall was received with patches of above normal rainfall in North West, KwaZulu-Natal, Mpumalanga, Limpopo, Western Cape and Northern Cape **(Figure 1)**. In July rainfall remained below normal in many parts of the country but near normal with patches of above normal rainfall in the western half of the country **(Figure 2)**. August continued to receive normal to above normal rainfall in the south-western regions of the country **(Figure 3)**. The remainder of the country experienced dry conditions with a patch of above normal rainfall over eastern Limpopo **(Figure 3)**. For the season July to August 2020, rainfall remained similar to the month of August **(Figure 4)**. However parts of Nelson Mandela Bay Metropolitan Municipality of the Eastern Cape received above normal rainfall.

NDVI map: July 2020 compared to the long-term mean



Compared to the long term mean, the NDVI difference map for July shows that normal vegetation activity occurred over many areas in the country with some areas of below normal activity mainly over the Northern Cape, Western Cape, Eastern Cape, Mpumalanga and Limpopo.

VCI map: July 2020 compared to the long-term mean



The VCI map for July indicates that severe drought continues in larger parts of the Northern Cape; Central Karoo, northern parts of the West Coast, north-eastern and western parts of the Eden District of the Western Cape, the western half of the Eastern Cape and much of Limpopo. Isolated areas in the western parts and the southern coastal areas of the Western Cape and eastern half of the Eastern Cape continue to experience pockets of good vegetation conditions.

(**The VCI is a better indicator of water stress than the NDVI**).

II. CONDITIONS IN THE PROVINCES DURING JULY/AUGUST

Eastern Cape
NIL REPORT.

Free State
Below normal rainfall was received. Conditions have improved in the central and southern parts. The veld has wilted due to winter frost. Livestock condition has deteriorated but remains in reasonable condition. Most crop farmers are now harvesting both maize and sunflower while others are finalizing planting of winter wheat mainly in the eastern and central parts. Flowering of early maturing fruit trees such as peaches and cherries is taking place particularly in the eastern parts of the province. Winter and spring pastures are in very good condition especially those that are under irrigation. There were reports of veld fires in all districts. The average level of major dams has decreased as compared to the previous year during the same period (78% in 2020; 81% in 2019).

Gauteng
NIL REPORT.

KwaZulu-Natal
Below normal rainfall was received over most parts except for the coastal area and the far north-eastern districts. The drought monitor for July indicates the two districts, Umzinyathi and Harry Gwala deteriorating to severe drought level. Winter season pastures are not exhibiting significant growth and irrigation is being used to keep them alive. Supplementation with licks, hay and silages is ongoing. Winter crops (wheat) in Uthukela District were planted later than normal, even where centre pivot irrigation is used and growth is approximately 10cm. Livestock condition ranges from fair to poor. Veld and vegetation condition has been below normal in most areas. Veld fires have been reported in some areas. The average level of major dams has decreased as compared to the previous year (56% in 2020; 58% in 2019).

Limpopo
The province received no rain during July. Most farmers within various districts are harvesting and some have already harvested winter crops. Vegetables planted are mixed peppers, tomatoes, beets, onions and spinach. Winter grains were also planted in Capricorn. The condition of livestock in Lephalale and Mogalakwena areas within Waterberg District is deteriorating. Vhembe and Capricorn Districts have reported an improved livestock condition. The condition of the veld/grazing in all districts is deteriorating, with the exception of some areas in Vhembe where it has improved. Some farmers, particularly in Waterberg District have resorted to purchasing supplementary feeds for livestock. Farmers are continuously advised to reduce the number of livestock per grazing area, as well as to stock pile grass bales where possible. Incidences of tick bites as well as internal parasites in calves have been reported mostly by communal livestock farmers. Stock theft is also prevailing since people who were helping with patrolling are observing the lock down rules. The average level on major dams has increased to 61% in 2020, as compared to 55% of 2019.

Mpumalanga
Below normal rainfall was received. Planted vegetables, such as beetroot, spinach, onions and cabbage are in good condition and harvesting of maize continued in various municipalities. Farmers have begun to harvest winter crops which are in good condition. Livestock condition ranges from poor in drought persistent areas such as Dr JS Moroka and Thembisile Hani while livestock condition is reasonable to good in the other parts of Nkangala District. The veld condition

is in reasonable to poor condition due to dry winter conditions. Availability of resources has greatly depreciated in most areas in Nkangala District. Invader plants still remain a challenge and pose a threat to good pastures and grazing animals. Incidents of veld fires were reported. Earth dams have begun drying out and the average level of major dams has slightly increased (69% in 2020; 66% in 2019).

Northern Cape
NIL REPORT.

North West
Below normal rainfall was recorded. The veld and livestock are in reasonable to poor condition due to winter conditions. Veld fires were reported in a number of areas. The average level of major dams has increased as compared to the previous year during the same period (67% in 2020; 62% in 2019).

Western Cape
NIL REPORT.

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 2020/08/31

III. AGRICULTURAL MARKETS

Livestock domestic markets
According to FNB beef continues to show marginal gains, however the yearly trends shows weakness across most categories except for class C prices. It is expected that the return of warmer conditions in the weeks ahead promise demand. Lamb and mutton prices showed marginal gains in line with the renewed strength in the meat complex. It is expected that prices will retain the sideways trend but with further upside in the medium term on improved seasonal demand. Pork and bacon prices continued to show gains as the sector slowly recovers from the earlier onset of the COVID-19 lockdown. The current uptick in pig carcass prices will continue supported by renewed demand as economic activity garners momentum following the easing of lockdown restrictions. Poultry renewed demand provided help to reduce the impact that has kept the market on the downside in the past.

Producer prices for selected livestock commodities	Beef	Mutton	Pork	Poultry
Open market: Class A / Porker / Fresh whole birds (R/kg)	45.58	87.88	26.75	24.33
Open market: Class C / Baconer / Frozen whole birds (R/kg)	39.54	65.89	25.52	24.76
Contract: A2/A3* / Baconer/ IQF (*includes fifth quarter) (R/kg)	43.76	87.58	37.49	22.98
Import parity price (R/kg)	57.14	95.12		17.66
Weaner Calves / Feeder Lambs (R/kg)	33.38	41.88		

FNB: 2020/09/02

IV. SADC REGION

The Famine Early Warning Systems Network (FEWS NET) report issued in August 2020 indicates that mixed food security conditions continue and are expected to persist across Southern Africa. In Malawi and parts of DRC, Mozambique, Madagascar, and high producing areas of Zimbabwe where the harvest was favorable, Minimal (IPC Phase 1) and Stressed (IPC Phase 2) outcomes are expected to continue. However, food security conditions are poor and Crisis (IPC Phase 3) outcomes persist or are expected to emerge in southern parts of Zimbabwe, Mozambique and Madagascar. In these areas, many households are atypically market dependent with below-average purchasing power. Conflict in areas of DRC as well as Cabo Delgado in Mozambique is also decreasing engagement in normal livelihood activity and households are expected to have difficulty meeting their non-food and food needs. The confirmed COVID-19 infections continued to significantly increase in several Southern Africa countries in July. With the increase in confirmed cases, Zimbabwe and Madagascar re-instated some restriction measures, mostly concentrated in urban areas. This has resulted in the decline of income for many poor households in both formal and informal employment. This has resulted in more households facing difficulty meeting their non-food and food needs primarily in urban centers.

FEWS NET further reported that red locusts and African Migratory Locusts have been observed near the Lake Chirua Border region of Mozambique and in south-eastern Zimbabwe. There are reports of some villagers in Zimbabwe consuming locusts. Swarms of locusts are present in Botswana, Zambia, and Namibia and are likely migrating, posing a risk to the entire region. There have been no notable impacts in FEWS NET monitored countries; however, locusts pose a risk to winter crops and the 2020/21 cropping season. Staple food prices in June across the region were generally above the five-year average. In Lesotho, Mozambique, and Malawi prices of maize grain remain up to 50 percent above average with similar trends reported in Madagascar. The high prices in Malawi are triggered by traders buying significant stocks for future sales, while in Madagascar this is mainly due to below-average stocks as rice imports are low and lower production of maize. In Zimbabwe, high inflation and scarcity of commodities on the market are driving extremely high prices on the market.

[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

Maize, vegetables and fruit crops are being harvested and winter crops planted. The veld and livestock are in reasonable to poor condition. There were reports of veld fires in Mpumalanga, Free State, North West and KwaZulu-Natal. Stock theft remains a challenge in Limpopo. The average level of major dams has increased in most provinces as compared to the previous year during the same period. Over SADC mixed food security conditions continue and are expected to persist across Southern Africa.

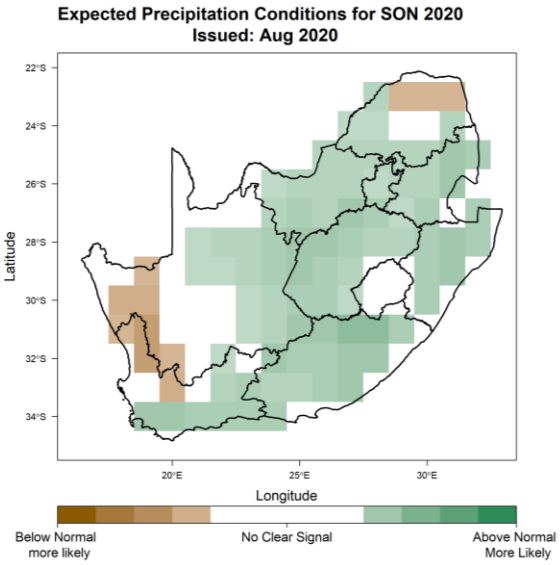
V. MONTHLY CLIMATE OUTLOOK

Seasonal Climate Watch: September 2020 to January 2021

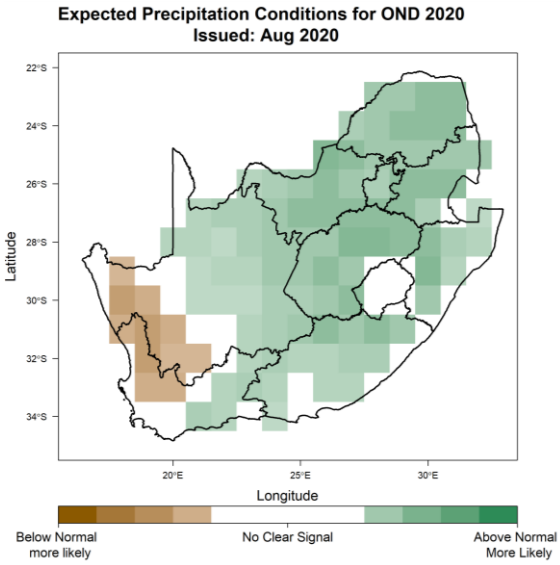
State of Climate Drivers

The El Niño-Southern Oscillation (ENSO) is currently in a Neutral state and the forecast indicates that it will most likely move towards weak La Niña state during spring and early summer. The likelihood of a La Niña phase during the coming summer months has drastically improved in the last few months, and it will be continuously monitored as we move closer to the summer forecasts.

Figure 1 – Rainfall



The multi-model rainfall forecast for spring, late spring and early summer (Sep-Oct-Nov, Oct-Nov-Dec and Nov-Dec-Jan) indicate increased chances of above-normal rainfall over most parts of the country with the main focus being on the summer rainfall areas in the north east of South Africa.



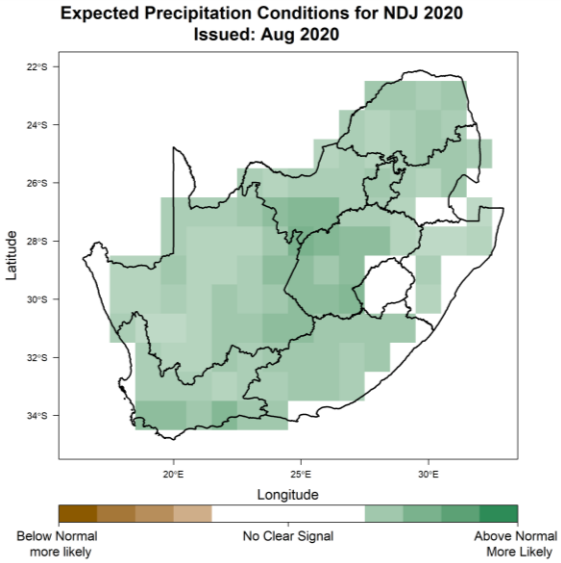
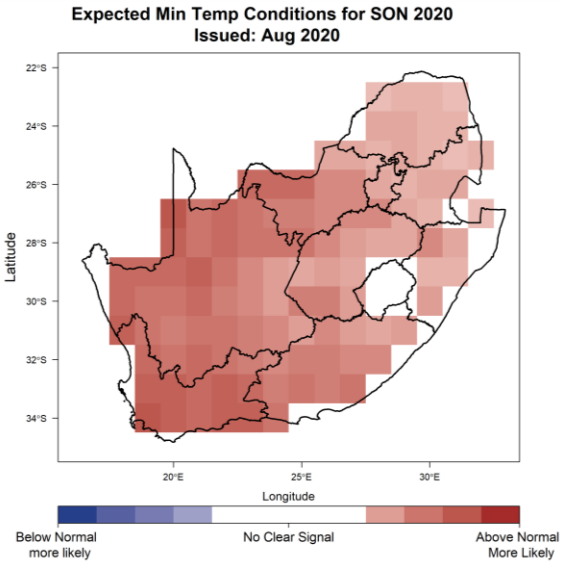
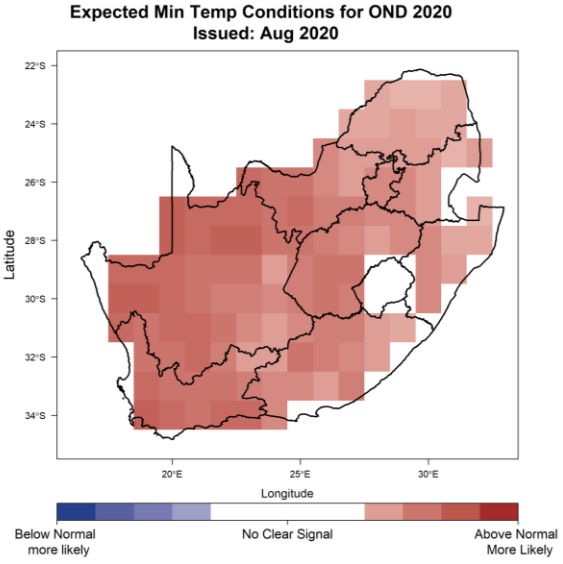
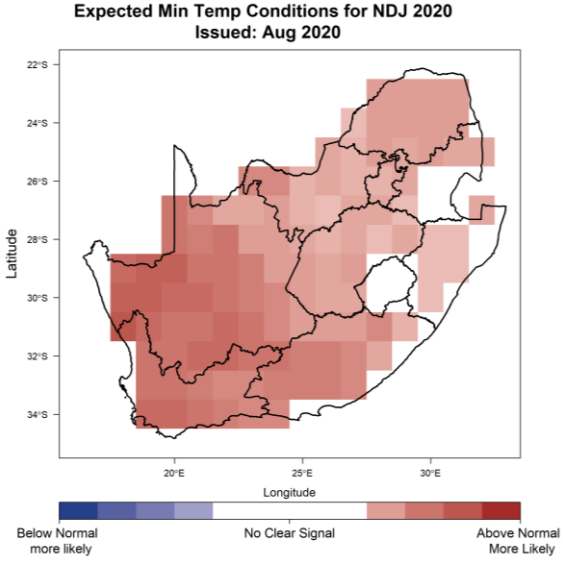


Figure 2 - Minimum and Maximum temperatures

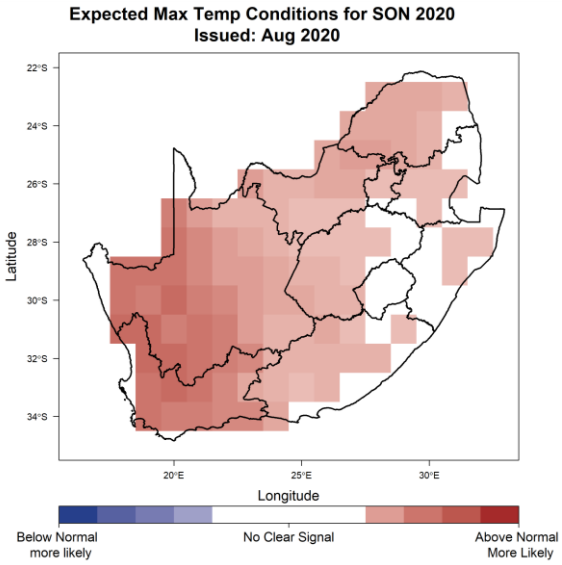
Minimum

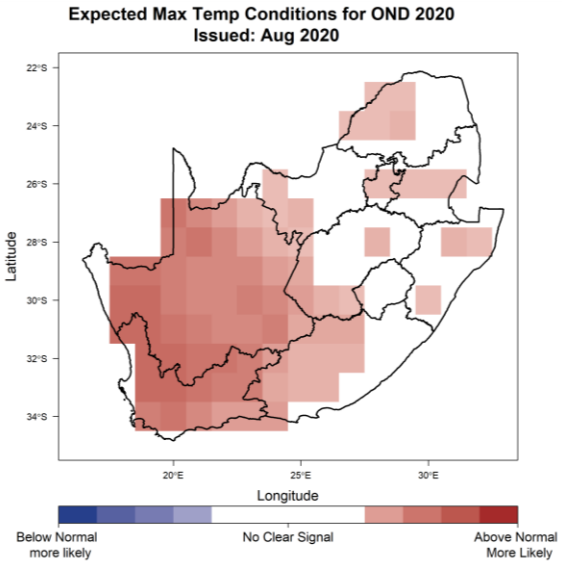


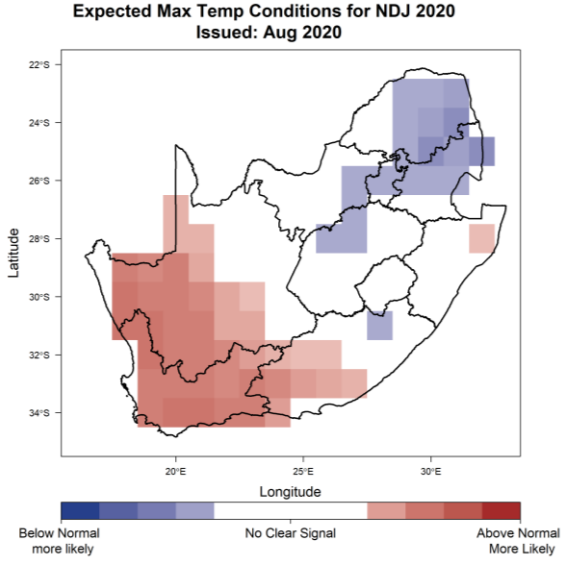




Maximum





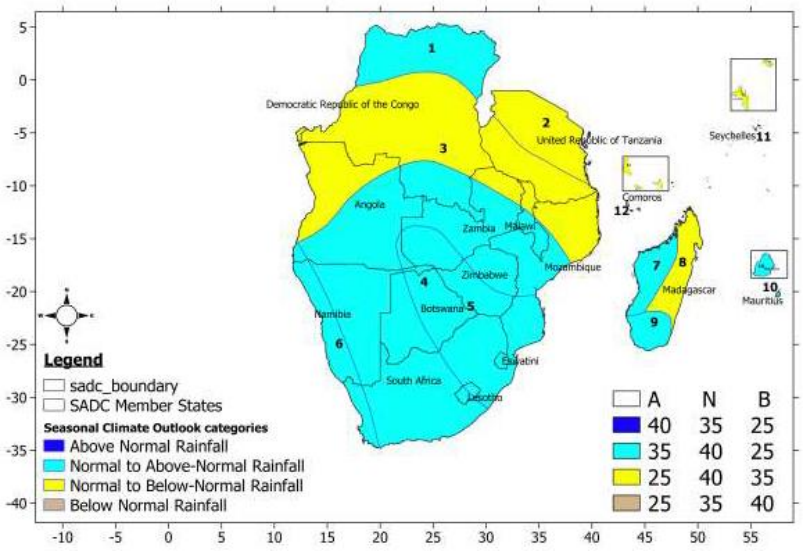


In general, most of the country is expected to experience above-normal temperatures during spring and late spring, with below-normal maximum temperatures predicted for the north-eastern parts of the country during early summer.

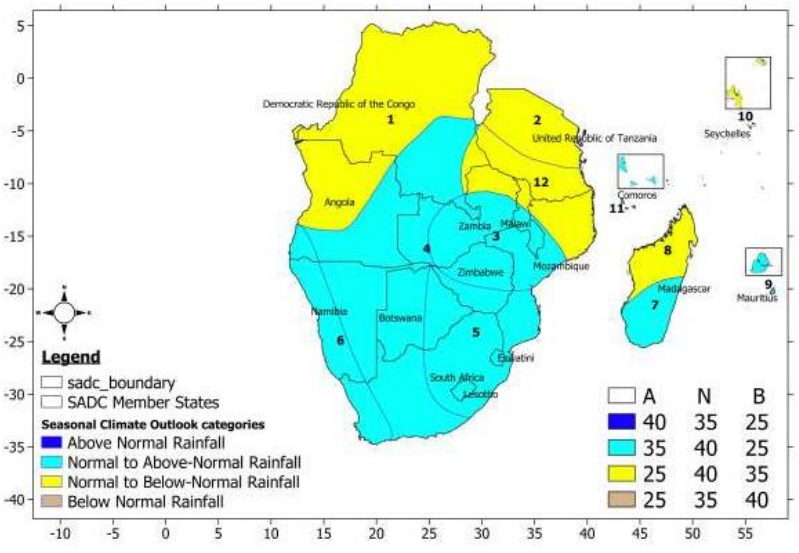
Southern Africa Regional Climate Outlook Forum (SARCOF-24) forecast

Bulk of SADC is likely to receive normal to above-normal rainfall for most of the period October to December (OND) 2020, with north-western Angola, bulk of Democratic republic of Congo, most of eastern Madagascar, northern Malawi, northern Mozambique, Seychelles, United Republic of Tanzania and north-eastern Zambia where normal to below-normal rains are expected. The January to March (JFM) 2021 period is expected to have normal to above normal rainfall for the entire region.

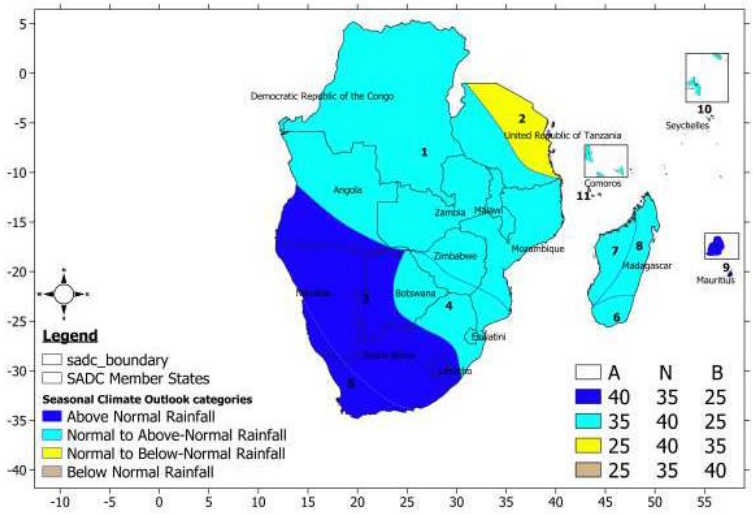
NOTE: This Outlook is relevant only to seasonal (overlapping three-monthly) time-scales and relatively large areas and may not fully account for all factors that influence regional and national climate variability, such as local and month-to-month variations (intra-seasonal). Consequently, ***Users are strongly advised to contact the National Meteorological and Hydrological Services for interpretation of this Outlook, additional guidance and updates.***



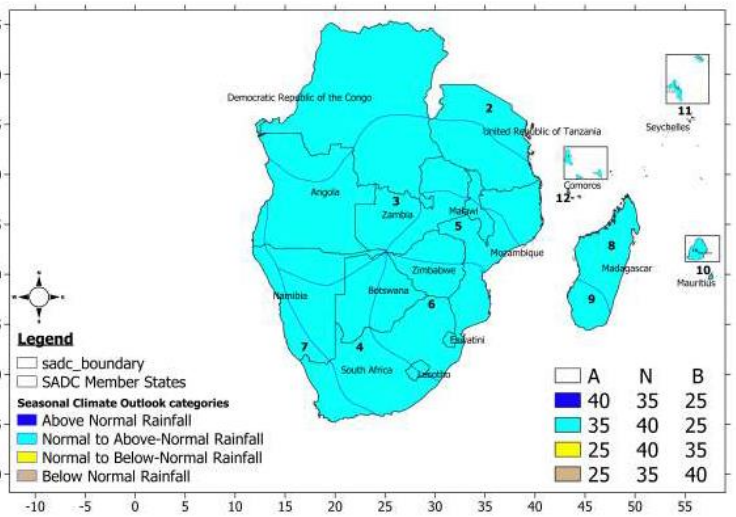
Rainfall forecast: October - December 2020



Rainfall forecast: November-January 2020/21



Rainfall forecast: December - February 2020/21



Rainfall forecast: January – March 2021

In summary, above normal rainfall is anticipated over most of the country in spring, late spring and early summer. Temperatures are expected to be above normal but the north-eastern parts of the country can anticipate below normal daytime temperatures during early summer. 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

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.
  - Avoid marginal soils - shallow and low water holding capacity soils.
  - Rather plant in soils with high water holding capacity or with shallow water table.
- Ascertain that the soil profile has enough water when planting commences.
- Roughen the soil surface to enhance rain water penetration and reduce runoff.
- Minimise compaction by reducing the passing of heavy machinery in the field.
- Add organic material to improve soil structure.

Land preparation

- Avoid where possible soils with pronounced plough pans.
- Consider practicing conservation agriculture such as zero or minimum tillage.
- Cover soil with organic matter or cover crops.
- Practice crop rotation.
- Do not expand land under crop production unnecessarily.
- Prioritise fallow land.

Crop choice and planting

- Choose drought resistant cultivars.
- Provide flexibility and diversification.
- Rather plant early in the season than late, but stay in the normal planting window and follow the weather and climate forecast regularly so as to make informed decisions.
- Consider staggered planting - spreading over weeks.
- Do not experiment with new and unknown cultivars and also avoid unnecessary capital investments.
- 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 minimize 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.
- 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 practises such as resting and burning.
- Determine the carrying capacity of different plant associations.
- Calculate the stocking rate of each, and then decide the best ratios of large and small animals, and of grazers or browsers.
- Provide periodic full growing-season rests (in certain grazing areas) to allow veld vigour recovery in order to maintain veld productivity at a high level as well as to maintain the vigour of the preferred species.
- Do not overstock at any time to avoid overgrazing.
- Eradicate invader plants.
- Periodically reassess the grazing and feed available for the next few months, and start planning in advance.
- Spread water points evenly.

F. 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/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 bbefore rainy season, and after each event.

The south-western parts of the country have received good rainfall during winter. Other parts of the country have reported a dry winter with generally reasonable to poor veld and livestock conditions. Planted winter crops are in good condition. The seasonal forecast anticipates above normal rainfall over most of the country in spring, late spring and early summer. Temperatures are expected to be above normal but the north-eastern parts of the country can anticipate below normal daytime temperatures during early summer.

With the current conditions in mind as well as the seasonal forecast, farmers are advised to continually conserve water and other resources in accordance with the Conservation of Agricultural Resources Act 1983, (Act No. 43 of 1983). Farmers should follow the weather and climate forecast regularly so as to make informed decisions.

Farmers are advised to keep livestock in balance with carrying capacity of the veld, 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 risk of veld fires remains in all areas and a number of provinces have recorded incidents of veld fires. Therefore, maintenance of fire belts should be prioritized as well as adherence to veld fire warnings in all areas. 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:-

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