



agriculture, forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

National Agro-meteorological Committee (NAC) Advisory on the 2013/14 summer season Statement from Climate Change and Disaster Management 04 DAFF 2013

18 December 2013

In the light of the seasonal outlook as produced by the South African Weather Service (SAWS) and other centres, the following advisory guidelines are suggested. It is emphasized that these advisories are broad guidelines and should be interpreted considering the local aspects of the region such as soil types, cultural preferences and farming systems. Depending on the particular region, the prioritization of the guidelines will differ. The basic strategy to follow would be to minimize and diversify risk, optimize soil water availability and to manage the renewable resources (rain water and grazing) to uphold sound farming objectives. Long-term mitigation strategies should be considered by implementing techniques to enhance in-field water harvesting by reducing run-off and improving infiltration. Reduced tillage methods are very important in this regard, as is basin tillage, to capture rainwater in the drier areas. **The provinces should further simplify, downscale and package the information according to their language preference and if possible use local radio stations and farmers' days in disseminating the information.**

I. CURRENT CONDITIONS

Figure 1

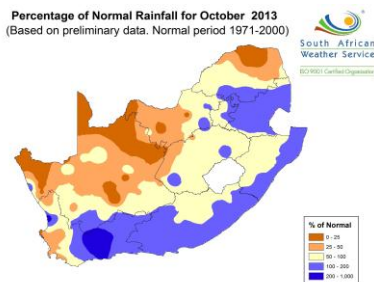


Figure 2

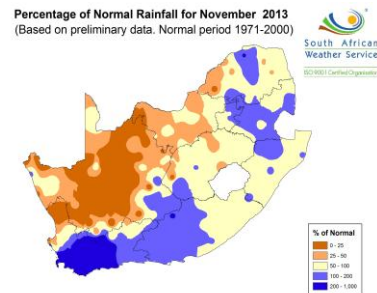


Figure 3

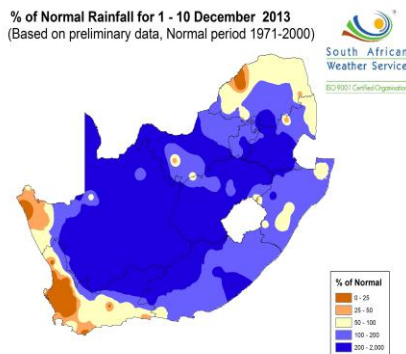
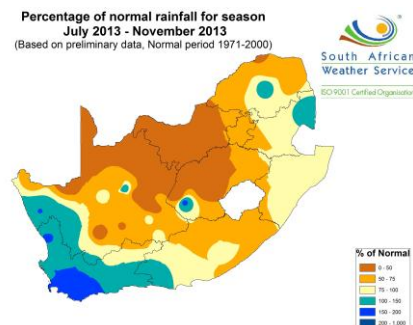
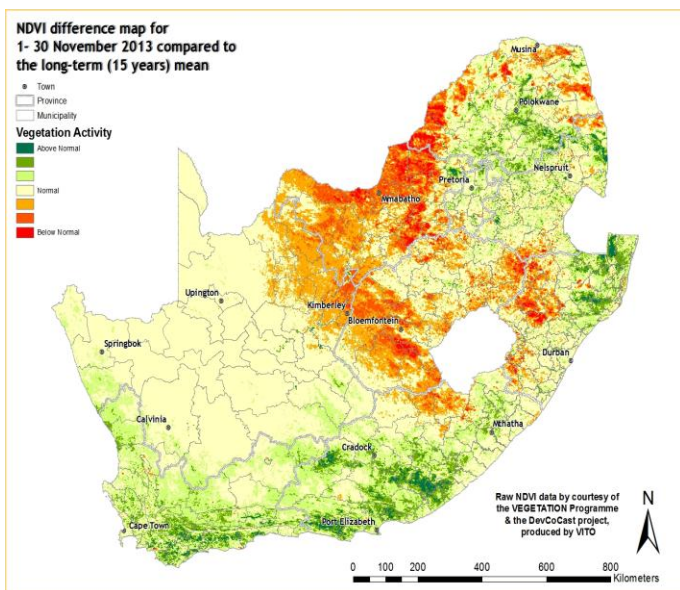


Figure 4



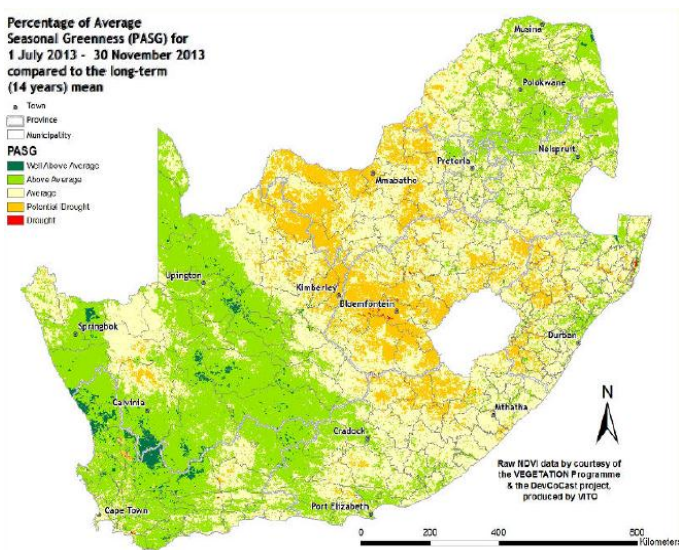
In October above normal rainfall was received mainly along coastal provinces and Mpumalanga (**Figure 1**). November month received above normal rainfall in the southern coastal regions as well as parts of Mpumalanga, Limpopo and Gauteng Provinces while the remaining parts of the country received near normal to below normal rainfall (**Figure 2**). For the first ten days of December rainfall was above normal in many areas but near normal to below normal in the northern parts of Limpopo Province and western and south-western coastal regions (**Figure 3**). For the season July to November 2013 above normal rainfall was received along the western and south-western coastal regions while the remaining parts received near normal to below normal rainfall (**Figure 4**).

NDVI difference map for November 2013 compared to long-term mean



Vegetation activity was above normal over the western and north eastern parts of the country, but remained below normal over the central areas.

Percentage of Average Seasonal Greenness for 1 July – 30 November 2013 compared to the long-term mean



While the impact of relatively dry conditions since the previous summer is still visible over the central parts of the country, cumulative vegetation activity has been above normal over especially the western parts of the country as well as the north-eastern to eastern areas to a lesser extent, where summer rainfall so far has been normal to above normal.

II. CONDITIONS IN THE PROVINCES DURING NOVEMBER 2013

Eastern Cape

NIL REPORT.

Free State

Southern, western and central parts are experiencing severe drought and as a result soil preparation and planting has been delayed. Veld condition is poor in most parts. Harvesting of wheat is underway but yield is significantly low due to drought. The level of dams has decreased as compared to the previous year during the same time (83% in 2012; 71% in 2013).

Gauteng

Normal to above normal rainfall was received over most areas. Incidents of hailstorms were reported over the central parts which resulted in damages to property. Majority of farmers are preparing for summer crops. The veld and livestock conditions are still poor. The level of dams has decreased as compared to the previous year during the same time (89% in 2012; 79% in 2013).

KwaZulu-Natal

Normal to above normal rainfall was received; however planting of maize and soybeans has been delayed due to late summer rains in the north western parts (Amajuba, Uthukela, Umzinyathi and western parts of Zululand). Sugar cane crop is in good condition. The veld condition is reasonable except around Umsinga where it is poor as a result of overgrazing. Livestock is in a reasonable condition. The level of dams has increased as compared to the previous year (78% in 2012; 81% in 2013).

Limpopo

NIL REPORT.

Mpumalanga

NIL REPORT.

Northern Cape

Generally below normal rainfall was received. Sultana wine grapes and table grapes yields are very good for export markets. Veld and livestock conditions are still poor. The average level of dams has decreased to 76% in 2013 as compared to 86% in 2012 during the same month.

North West

Most parts of the province received below normal rainfall. High mortality was reported due to drought while the veld remains in poor condition. The level of dams is lower as compared to the previous year (73% in 2012; 60% in 2013).

Western Cape

The province received normal to above normal rainfall. Various extreme conditions such as hail, floods and fires were reported and the fruit sector was affected. Harvesting of wheat and barley crop is delaying due to above normal rainfall received and as a result the quality has decreased. The level of dams indicated an increase as compared to the previous year during the same time (86% in 2012; 91% in 2013).

III. AGRICULTURAL MARKETS

Major grain commodities

According to FNB both yellow and white maize prices showed gains on the South African markets due to the supportive Rand, price direction will be determined by the development on the weather front. Wheat retained a firmer trend. Prices are expected to trade firmer with weather being the major driver. Oilseed prices also showed gains supported by international markets and a supportive Rand. Domestic oil prices are expected to trend upwards on renewed Rand weakness.

Domestic prices per Safex (R/t)

Commodity	Futures prices as at (2013/12/10)				
	2013/12	2014/03	2014/05	2014/07	2014/09
White maize	R2766.00/t	R2718.00/t	R2430.00/t	R2168.00/t	R2192.00/t
Yellow maize	R2697.00/t	R2607.00/t	R2275.00/t	R2113.00/t	R2150.00/t
Wheat	R3622.00/t	R3690.00/t	R4870.00/t	R4950.00/t	N/a
Sunflower	R6000.00/t	R5300.00/t	R5115.00/t	R4740.00/t	N/a
Soybeans	R6780.00/t	R6110.00/t	R5554.00/t	R5580.00/t	N/A
Sorghum	N/A	R3500.00/t	R2751.00/t	R2750.00/t	N/A

SAGIS weekly bulletin: 2012/12/12

Livestock domestic markets

Local beef prices ended mostly firmer on renewed uptake across markets. Both mutton and lamb continue to show gains due to improved uptake, prices are expected to trade firmer due to increase demand ahead of December holidays. Pork also traded higher supported by improved demand. Prices are likely to increase due to increased demand during the holiday period. The broiler market traded higher on improved demand, prices are expected to retain the up momentum due to improved demand.

Producer prices for selected livestock commodities	Beef	Mutton	Pork	Poultry
Open market: Class A / Porker / Fresh whole birds (R/kg)	29.52	43.53	23.05	20.50
Open market: Class C / Baconer / Frozen whole birds (R/kg)	25.61	34.33	23.00	19.57
Contract: A2/A3* / Baconer/ IQF (*includes fifth quarter) (R/kg)	30.05	43.67	22.39	16.05
Import parity price (R/kg)	26.41	35.55	25.64	15.53
Weaner Calves / Feeder Lambs (R/kg)	16.56	22.17		

ABSA AgriCommodities: 2013/12/06

NB: Users are advised that these are just indicative prices therefore it is imperative that clients investigate their own individual basis value when marketing their products (livestock and grain).

IV. SADC REGION

The December 2013 FEWS NET outlook reported that low rainfall received in the central and eastern parts of the region resulted in a late and erratic onset of rains in southern Malawi, eastern Zambia, and parts of central Mozambique. Below normal rains have been received in parts of

Botswana, Namibia, southern Angola, and South Africa, delaying relief from drought conditions of the previous two seasons. Rainfall in the bimodal areas of Tanzania has continued to be poor, leading to low harvest expectations for the short season (*Vuli*) rains. According to short-term forecasts from the United States National Centers for Environmental Prediction (NCEP), there is a possibility of good rainfall occurring in parts of South Africa, southern Angola, and northern Namibia in the second week of December. This will bring much-needed rainfall relief if it occurs. Little rainfall is expected in the area around southern Malawi, eastern Zambia, southern Zimbabwe and central Mozambique, which could exacerbate the dry conditions currently being experienced there. The forecast suggests that rainfall in the northern bimodal areas of Tanzania may be scattered, which may do little to reverse the poor rainfall conditions currently being experienced.

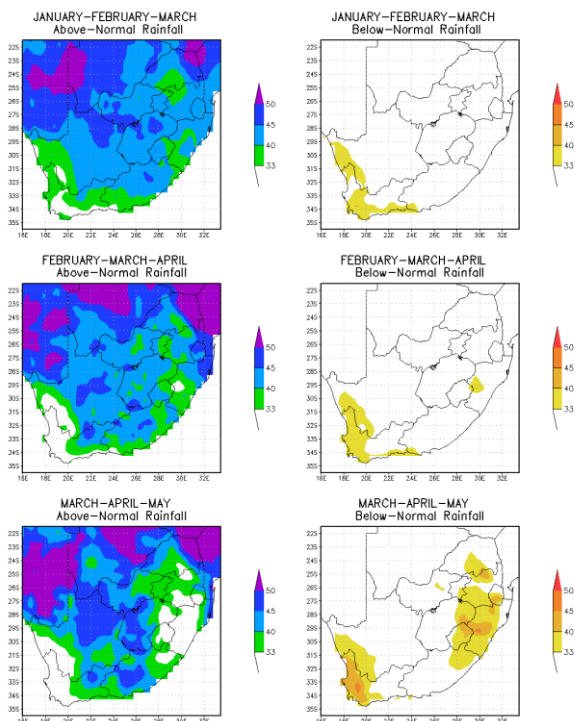
Summary of the reports

During November rainfall was above normal over the southern coastal regions as well as parts of Free State, Mpumalanga, KwaZulu-Natal, Gauteng and Limpopo Provinces, while other areas received near normal to below normal rainfall. Veld and livestock condition is poor in most parts and high mortality rate has been reported in North West due to drought. Land preparation is underway in some areas while in others it has been delayed due to late summer rainfall. Damages from hail storms have been reported in Gauteng. Dam levels have decreased in the majority of provinces. Over SADC below normal rainfall was received in the south-western and north-eastern parts of the region.

V. MONTHLY CLIMATE OUTLOOK

Seasonal Climate Watch: January to May 2014

Figure 1- Rainfall



The forecasting system indicated elevated probabilities for above-normal rainfall conditions for most parts of the summer rainfall region for late summer. There is an indication of drier conditions over the Kwazulu-Natal and Western Cape regions moving towards the autumn season.

Figure 2- Maximum temperatures

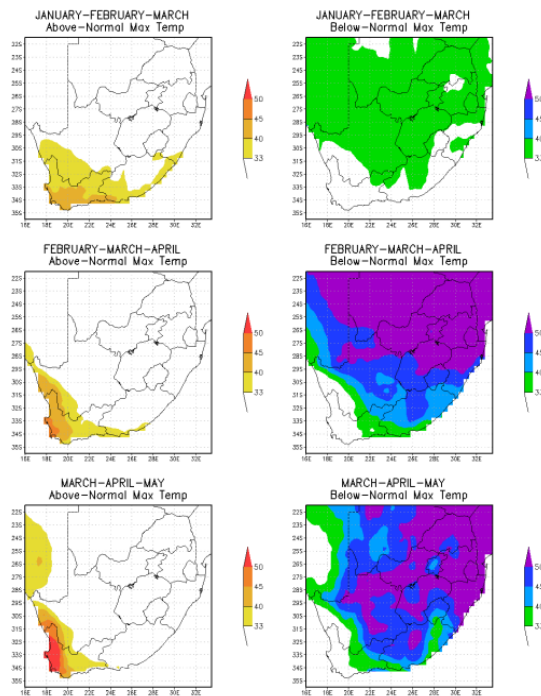
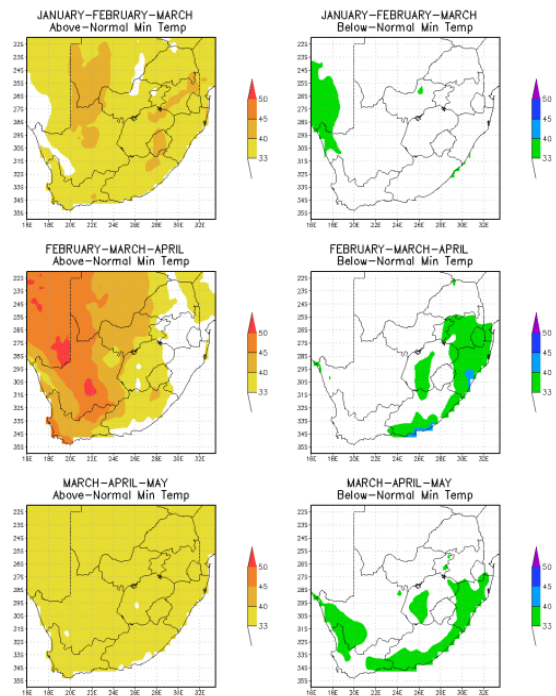


Figure 3- Minimum temperatures



Late summer temperature predictions indicate below-normal maximum temperatures for the eastern half of the country, while the western half is expected to be warmer with regards to minimum temperatures, and above-normal maximum temperatures limited to the far South-West of South Africa.

How to interpret the forecast maps

- There are three sets of forecast maps: the rainfall, maximum and minimum temperatures.
- Each set consists of maps showing the probabilities for above-normal (left panels) and below normal (right panels) conditions to occur.
- For each forecast map a probability percentage is given on a scale of 0-50% and above (the colour bars on the right hand side of each map) for the rainfall or temperatures for the season, i.e. JANUARY-FEBRUARY-MARCH 2014.
- The forecast probabilities indicate the **direction** of the forecast as well as the amount of **confidence** in the forecast.

For further clarification using JANUARY-FEBRUARY-MARCH 2014 rainfall (**Figure 1**) as an example:

Mpumalanga Province, for the above normal category, is shaded in green and light blue (**33 - 40% and 40 - 45%**). In the below normal category it is shaded in white (**less than 33%**).

Comparing the two:-

- above normal: 33 - 40%; 40 - 45%.
- below normal: <33%.

The above normal rainfall category for January to March 2014 has the higher percentage and is therefore favoured. However, when a category is less than 45% it is considered uncertain and is therefore unusable. In such instances farmers are advised to plan their activities in accordance with weather conditions usually associated with that particular period/season in their areas.

State of Climate Drivers

Most of the set of dynamical and statistical model predictions predict neutral ENSO conditions through the rest of 2013 and into early 2014, with a warming tendency during summer and autumn 2014. Development of weak El Nino conditions appears possible by the middle of 2014.

In summation, above normal rainfall is anticipated countrywide during the second part of summer. Maximum temperatures are expected to be below normal for most summer rainfall areas in the second half of 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:

IV. SUGGESTED STRATEGIES:

A. Rain-fed crop production

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.
- 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:

- Consider mulching to minimize evaporation.
- Control weeds regularly.
- Scout for pests and diseases regularly and control where necessary.

B. Irrigation farming

- Remove all weeds containing seeds, but keep other vegetative rests on the land because that will reduce evaporation.
- Check and repair all tools and machinery.
- Irrigate during cool conditions to avoid evapotranspiration.
- Consider using drip irrigation as it saves water by allowing it to drip slowly straight to the roots.
- Avoid over irrigation because that can create problems e.g. water logging and diseases.
- **Adhere to water restrictions when issued.**

C. Domestic and home garden water use

- Conserve existing water supplies.

- Eradicate water weeds.
- Limit water waste and losses.
- Repair leaking pipes.
- Re-use water and retain high quality.
- Harvest water during rainy days.

D. Stock farming (very important)

For most of the country, if the correct farming practices have been followed and stocking rates have been kept in balance with carrying capacity, animals should be in relatively good condition.

- Never exceed carrying capacity of plant associations and densities – keep conservative stocking rates even during favourable climate conditions.
- Provide lots of drinking points.
- Enhance nutritional value of dry grazing/feed with licks:
 - Phosphorous deficiency is a major problem.
 - Licks should (in most cases) provide:
 - Phosphorous.
 - Urea (to help with the break-down of dry vegetation).
 - Salt.
 - Molasses.
 - Deficiencies differ according to vegetation composition/soil properties/climate.
 - Analysis of vegetation/soil samples can benefit the decision for supplement composition.
- Sell mature, marketable animals (to help prevent overstocking).
- If grazing is in danger, herd animals into pens where different animals can be segregated and fed separately.

E. Grazing (very important)

- Subdivide your grazing area into camps of homogeneous units (in terms of species composition, slope, aspect, rainfall, temperature, soil and other factors) to minimise area selective grazing as well as to provide for the application of animal management and veld management practises such as resting and burning.
- Determine the carrying capacity of different plant associations.
- Calculate the stocking rate of each, and then decide the best ratios of large and small animals, and of grazers or browsers.
- Provide periodic full growing-season rests (in certain grazing areas) to allow veld vigour recovery in order to maintain veld productivity at a high level as well as to maintain the vigour of the preferred species.
- Do not overstock at any time to avoid overgrazing.
- Eradicate invader plants.
- Periodically reassess the grazing and feed available for the next few months, and start planning in advance.
- Spread water points evenly.

F. Veld fires

The provinces and farmers are advised to create and maintain firebreaks in winter rainfall areas. An owner of the land who is obliged to prepare and maintain a firebreak must ensure that, with due regard to the weather, climate, terrain and vegetation of the area, the

following is taken care of in terms of installing firebreaks (Chapter 4 of the National Veld and Forest Fire Act No. 101 of 1998):

- It has to be wide enough and long enough to have a reasonable chance of preventing a veld fire from spreading to or from neighbouring land.
- It does not cause soil erosion and
- It is reasonably free of inflammable material capable of carrying a veld fire across it.
- Firebreaks may be temporary or permanent.
- Firebreaks should consist of fire-resistant vegetation, inflammable materials, bare ground or a combination of these.
- Firebreaks must be located in such a way as to minimize risk to the resources being protected.
- Erosion control measures must be installed at the firebreak.

Firebreaks can be made through the following methods:

- Mineral earth firebreak:
 - Through ploughing, grading, other earth movement.
- Use of herbicides.
- Use animals to overgraze specifically to minimise fuel.
- Strategic placement of burned areas,
 - Not to be done on days with fire hazard (windy and dry/hot).
- Plant fire resistant plants.
- Plant species selected for vegetated firebreaks must be non-invasive and capable of retarding the spread of fire.

Maintaining firebreaks:

- Mow, disk, or graze vegetative firebreaks to avoid a build-up of excess litter and to control weeds.
- Inspect all firebreaks for woody materials.
- Inspect firebreaks at least annually and rework bare ground firebreaks as necessary.
- Repair erosion control measures as necessary.
- Access by vehicles or people must also be controlled.
- Bare ground firebreaks, which are no longer needed must be stabilized i.e.
 - Sow grass.
 - Mulch.

What to do when conditions favorable for veldfire are forecast:

- Prohibit fires in the open air during periods of high fire hazard and establish a fire control committee.
- To control fires, an alarm system, firefighting teams, and beaters must be organized in advance and plans prepared.
- Livestock should be moved out of grazing land to a safe place.

What to do during veldfire:

- Water is generally not available in sufficient quantities or at adequate pressure for the control of major fires; however, sand or other loose mineral soil material can be an effective method of control.
- Tree branches can be used to beat fire.

G. Heat stress – bad for productivity (very important)

Signs of heat stress:

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

What to do:

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

H. Severe thunderstorms/flash floods

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.




Many summer rainfall areas are still dry although some rain has been received. As the seasonal forecast suggests above normal rainfall during the second half of summer in most regions, farmers are advised to continue to conserve water and other resources in accordance with the Conservation of Agricultural Resources Act (No. 43 of 1983). Farmers still intending to plant are advised to consider short season, locally adapted cultivars. Severe thunderstorms with damaging winds and hail, localized flooding as well as heat waves have occurred and are likely to re-occur occasionally; therefore measures to combat these should be in place. Damages by veld fires have been reported in some winter rainfall areas, hence preventative measures for these should be in

place i.e. creation/maintenance of firebreaks. Precautionary measures should also be maintained for pests and diseases and regularly scout for these.

The users are urged to continuously monitor, evaluate, report and attend to current Disaster Risk issues. It is very important and mandatory for farming communities to always implement disaster risk measures and maintain good farming practices.

The climate advisory should be disseminated widely. Users are advised to be on the look-out and act on the extreme daily warnings as well as the advisory update next month. Information sharing groups are encouraged especially among farming communities for sustainable development. It is the responsibility of farmers to implement disaster risk measures.

The Disaster Management Act (Act No. 57 of 2002) urges Provinces, individuals and farmers, to assess and prevent or reduce the risk of disasters using early warning information. The current advisory can be accessed from the following websites: www.daff.gov.za and www.agis.agric.za. **For more information contact:-**

<p>DAFF, Directorate: Climate Change and Disaster Management Private Bag X93 Pretoria 0001 Tel: 012 309 5722/23; Fax: 012 309 5878 Email: MittaA@daff.gov.za</p> 	<p>SAWS: Private Bag X097 Pretoria 0001 Tel: +27 (0) 12 367 6000 Fax: +27 (0) 12 367 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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