METEOROLOGICAL SERVICES DEPARTMENT NEWSLETTER

Volume 4 . Issue 4

09-10-2024

Use of birds and wild fruits in IKS forecasting systems!

Weather: Where Science Meets The Sky

SARCOF - 29: A CONFERENCE TO REMEMBER!

From The Director's Desk

Regional climate experts convened in Harare for a six-day meeting at The Meteorological Services Department. Their goal was to review the previous SADC Seasonal Rainfall Forecast and develop rainfall predictions for the 2024/25 season. As some SADC nations, including Zimbabwe, increasingly rely on a blend of scientific and Indigenous Knowledge Systems (IKS) for forecasting, this gathering took an added significance. They analyzed data using various models to create a seasonal forecast for 2024-2025, which was unveiled the following week during the Southern Africa Climate Outlook Forum. Mrs. Manzou emphasized the growing importance of IKS, citing studies supporting its value. The Director noted that the Zimbabwe Meteorological Services Department has consistently integrated IKS into its work, acknowledging its scientific merit. Zimbabwe hosts this recurring event in the aftermath of the devastating Cyclone Idai, which spurred a complete overhaul of the Meteorological Services Department.

Mrs. R. Manzou - Director, Meteorological Services Department

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A Courtesy Call to Honorable Minister S. Nyoni During SARCOF

Praise Govere - GIS intern, MSD

During the 29th edition of SARCOF, the World Meteorological Organization (WMO) delegation accompanied by the Meteorological Services Department directorate headed by Mrs. R. Manzou had the honour of paying a courtesy call to the Honorable Minister of Environment, Climate, and Wildlife Dr. S Nyoni. This meeting symbolized a pivotal moment of cooperation and collaboration among our partners. Mrs. R. Manzou expressed the importance of unity in addressing the challenges posed by climate variability and ways to improve weather forecasting.

The discussions emphasized that by working together we can harness our collective expertise and resources to develop innovative solutions. The Honourable Minister highlighted the necessity of a collaborative approach to achieve our common goals: weather forecasting, improved disaster preparedness, and sustainable development. The spirit of partnership demonstrated during this meeting reinforced our shared commitment to building resilience to the changing climate.

The Minister's quote: "As we move forward, let us continue to strengthen these ties, ensuring that our efforts are aligned and that we remain united in our mission to safeguard the well-being of our nations and communities. Together we can pave the way for a more sustainable future."

Understanding the Language of Seasonal Rainfall Forecasts

Praise Govere - GIS Intern, MSD

As the anticipation builds for the upcoming rainfall season, it's important for the public to be well-versed in the meteorological terminology used to describe the expected conditions. This knowledge will empower communities to better interpret and plan around the seasonal rainfall outlook provided by the Meteorological Service Department (MSD). One of the most crucial terms to understand is the concept of "normal" rainfall. This refers to the average amount of precipitation typically received in a particular region during a specific time period, such as a season or a month.

Normal rainfall levels are calculated based on historical data collected over several decades. When the MSD issues a seasonal forecast, they may describe the expected rainfall as being "above normal," "normal," or "below normal." These designations provide valuable insights into the anticipated precipitation patterns: Above Normal Rainfall: This indicates that the forecasted rainfall for the upcoming season is expected to be higher than the historical average. Communities in these areas should be prepared for the potential of increased flooding, infrastructure damage, and crop yields that may exceed typical levels.

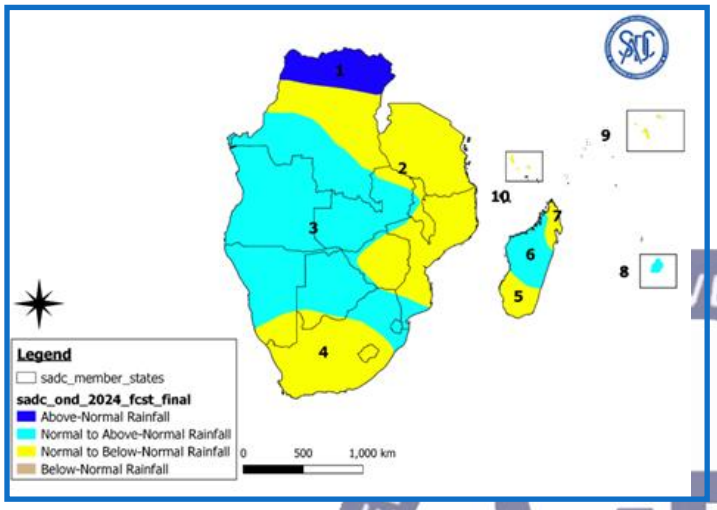
Normal Rainfall: A forecast of "normal" rainfall suggests that the anticipated precipitation for the upcoming season is expected to be within the range of the historical average. This typically means that regular agricultural practices, water resource management, and disaster preparedness plans can be implemented without the need for significant adjustments. Below Normal Rainfall: A "below normal" rainfall forecast signifies that the expected precipitation for the upcoming season is likely to be lower than the historical average. In these instances, communities should be prepared for potential drought conditions, water scarcity, and the need to implement conservation measures and contingency plans for agricultural activities and other water-dependent sectors.

MSD may also provide more detailed information about the probability or likelihood of a particular rainfall scenario occurring. For example, they may state that there is a 60% chance of above-normal rainfall or a 30% chance of below-normal rainfall. Understanding these terms and their implications is crucial for communities to effectively plan and prepare for the upcoming rainy season. By staying informed and heeding the guidance provided by the Meteorological Service Department, citizens can make informed decisions, mitigate potential risks, and maximize the benefits of the seasonal rainfall patterns. Remember, the MSD is committed to providing reliable and timely information to help safeguard the well-being of all Zimbabweans. Stay tuned for the latest seasonal rainfall outlook and be proactive in understanding the key meteorological terms that will shape your community's preparedness.

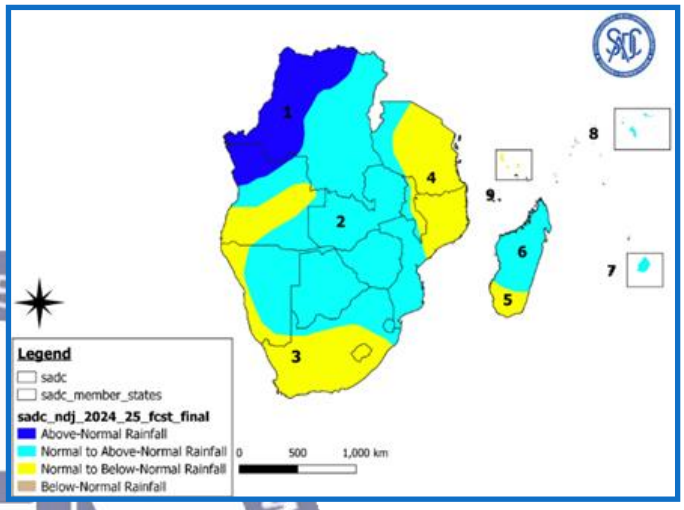
Previously, The Southern African Regional Climate Outlook Forum (SARCOF - 28) was held in Maputo Mozambique from 29 to 31 January 2024, to review the impacts of the October, November and December (OND) 2023 rainfall season's predictions and advance the establishment of Regional Sectoral User Interface Products. Before SARCOF - 28, the event was held in Mauritius from 26 - 28 September 2023. This time around, SARCOF was held in Zimbabwe at the Rainbow Towers from 26 to 28 August. Before that the Climate Experts Meeting (CEM) was held from Monday 19 August to 25 August 2024 at the Meteorological Services Department. Brace yourself for these remarkable conferences.

#SARCOF-29ZIMBABWE

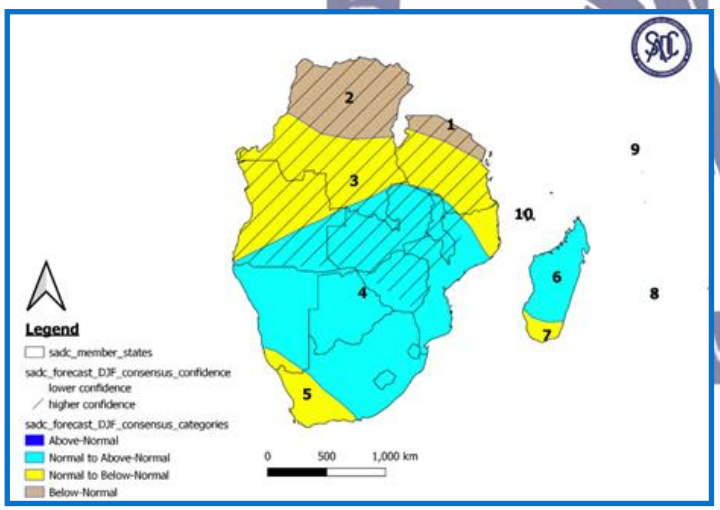
Statement From the Twenty-Ninth Southern Africa Regional Climate Outlook Forum (SARCOF-29)



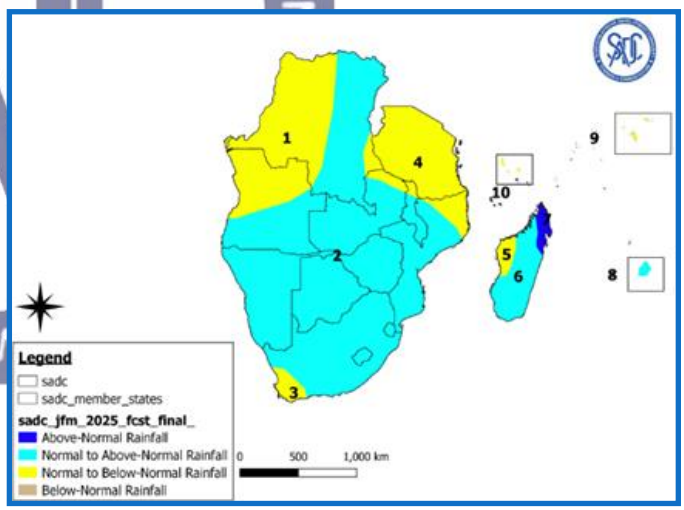
October November December rainfall forecast



November December January rainfall forecast



December January February rainfall forecast



January February March rainfall forecast

SUMMARY OF THE 2024 TO 2025 RAINFALL SEASON

The bulk of the SADC region is likely to receive normal to above-normal rainfall for most of the period of October to December (OND) 2024 including Mauritius and central Madagascar, apart from the north-western part of the Democratic Republic of Congo where above-normal rainfall is expected. The remainder of the region, the island states of Comoros and Seychelles, are likely to have normal to below-normal rainfall during the same period. The period January to March (JFM) 2025, is expected to have normal to above normal rainfall for most of the region except for the south-western fringes of South Africa, south-eastern and westernmost parts of DRC, north-western Angola, Tanzania, northern Zambia, northern Malawi, northern Mozambique, the central western tip of Madagascar, Comoros and Seychelles where normal to below-normal rains are expected. Northern Madagascar is likely to receive above-normal rainfall during this period of the 2023/24 rainfall season. The temperature outlook for the entire 2024/25 rainfall season is expected to be mostly above long-term averages over the whole SADC region.

#SARCOF-29ZIMBABWE

We Fought and We Conquered!

Tinetariro Chikati

August 2024 was a very hectic month for the Meteorological Services Department. A lot of activities were occurring at the same time. That is the only time you would wish if human beings could be photocopied so that all people could do their tasks 2 times faster depending on the number of copies that would have been made. From 19 to 23 August, the Climate Experts Meeting (CEM) was held at the Meteorological Services Department HQ. This event saw MSD hosting multiple climate experts from the 16 SADC states. The Climate Experts Meeting acted as the harbinger to the Southern Africa Climate Outlook Forum, which would succeed it in the following week.

In preparation for the events some house keeping issues had to be addressed at the Meteorological Services Department to support the larger number of people who would be at the premises. To provide sufficient clean water, another borehole was drilled to supplement the one which was already in commission. In addition to the borehole, the boardrooms were also given some love. The boardroom refurbishments included outfitting the windows with new blinders, as well as installation of new furniture to create a professional ambience.

The 1st day of the Climate Experts Meeting at MSD

The Meteorological Services Department's core activity is the provision of weather and climate services, therefore it would be quite weird if the instrument site was neglected. The Stevenson's Screens were revamped with a fresh coat of vibrant white paint, while the rain gauges were given a silver coat. From afar you could assume that all the instruments are new. One of the best decisions which was made was the removal of the rusty fence which bordered the instrument site and the entrance road. The site now looks better with that small alteration. The palm trees which used to lie alongside the old fence are providing enough makeup for the place.

MSD instrument site without the old fence

After the Climate Experts Meeting, the 29th edition of SARCOF was held from Monday 26 - 28 August 2024 at the Rainbow Towers. This event was an absolute hustle, without the right amount of muscle, team MSD could have been tackled. On Saturday delegates started flying into the country, and they had to be ferried to their abodes which were mostly Saint Tropez and Rainbow Towers. Some MSD personnel were given the responsibility of ushering the visitors. Some ushers and drivers were posted to the Robert Mugabe International Airport, while some were stationed at the different lodges and hotels.

The ushers who were stationed at the accommodations had to take note of each delegate's room number, so that they could take them there. Since some of the delegates had evening flights, some ushers and drivers had to stay up to very late hours, so that the delegates would have very little friction settling in the country. During this period a very high level of team work was observed.

ALL HAIL THE USHERS AND DESIGNATED DRIVERS!

The Utility of Indigenous Knowledge Systems In Weather Forecasting

Tinetariro Chikati

Indigenous Knowledge Systems (IKS) utilize historical environmental signs that have been observed for many years in each region. Despite merely using sensible observations, IKS is to some extent scientific, since it is predicting the probability of an event based on the occurrence of another. In Mathematics that is conditional probability. In Zimbabwe, IKS are usually disseminated through workshops and meetings that are held in a particular time frame that is unique to each area, be it a ward or district. Currently, it is still too early to tell whether it is going to be a good rainfall season using indigenous knowledge systems.

People normally start predicting the oncoming season after trees have shed their leaves and they start flowering. In Indigenous Knowledge, a good rain season can be predicted based on the behavior of the wind direction and a hazy atmosphere in some areas. Suppose the above-mentioned weather characteristic appears, for example. In that case, the wind starts blowing in the direction where it brings heavy rains and a hazy atmosphere prevails, there will be a high probability of a very good rainfall season. In other parts of the country, fire can be seen blazing on a mountain at night. But after going up the mountain for close inspection, there would be an absence of any sign of a fire.

In these areas if fires are observed in mountains, wind blazes in a different direction, thick haze, and dew no longer appears on grass and other surfaces, this would signify an early start in the rainfall season. If certain insects like nyenze do not make the sound they usually make at a certain time of the year, and trees delay their blooming, this signifies a year with poor rains. In some areas, if the moon sets in the absence of clouds, this also signifies a poor rainfall season. As strange as it may sound, in some areas if more males are born compared to females, it would be a sign of an impending drought, and this has actually happened. In Chipinge Valley, they call the north easterly winds Mugurasave. If these winds change to easterlies there would be rain, matching the scientific forecast. This pattern applies to areas in the southern parts of Mutare.

Burma Valley, and Vumba under Chief Zimunga down to Marange in Mutare West. In other areas when you hear a certain species of birds called mariti or dendera making their unique sound in the morning, this would signify that the first rains are very near. Another sign which can be used for rainfall forecast is the presence of a certain group of insects. Their absence or abundance during a specific period before a season would signify a good or bad season. Over the 2023-2024 rainfall season, there was an abundant supply of the indigenous mazhanje fruit in Masvingo, which signified a poor rainfall season.

This Indigenous Knowledge forecast matched the scientific forecast: The 2023 – 2024 season was nationally declared a drought. In conclusion, Indigenous Knowledge should be incorporated into seasonal forecasts. This is because they consider another dimension of the environment which is not considered by scientific forecasts. A fusion of the two will produce a potentially better forecast.

Muzhanje fruits | Source - Pinterest

Ruzivo rweChivanhu runotibatsirei pakuongorororora mamiriro ekunze?

Praise Govere – GIS Intern, MSD

Indigenous Knowledge Systems (IKS) kana kuti Ruzivo rweChivanhu runoshandiswa kuongorora mamiriro achange akaita kunze muchinguvana chinenge chichazotevera, kana mumwaka yegore inotevera pachishandiswa ruzivo rwezvakamboitika kune imwe mwaka yakapfuura munzvimbo iyoyo. Munyika yedu yeZimbabwe ruzivo urwu runokosheswa zvikuru ruchizobatanidzwa neruzivo rweScience zvinova zvinozowedzerawo hunyanzvi pakuongorora mamiriro ekunze mumwaka inotevera zvikuru sei yekurima. Tiri pakushandisa ruzivo urwu, chinoratidza kuti mwaka wemvura uchange uine maguta, mafambiro emhepo anoshandiswa kuona kuti kuchange kuine mvura zhinji here kana kuti shoma. Mhepo. Ikavhuvhuta ichibva nekunobva mvura zvinoratidza kuva pedo kwemvura. Kune dzimwe nzvimbo chinoratidza kuti kuchange kuine mvura, kuonekwa kwemoto uchipfuta mugomo, asi panozoenda vanhu kunoongorora paipfuta, vanowana pasina kunyangwe dota zvaro. Izvi zvinoratidza kuti mwaka unotevera mvura ichazenge ichikurumidza kuturuka.

Zvipukanana zvakaita senyenze zvinoshandiswa zvakare kuziva kuti mwaka wemvura wavepedyo. Nyenze hadzi-wanzorira kana mvura isati yave pedyo kunaya. Shiri dzemusango ndedzimwewo, dzinotoshandiswawo kuwana ruzivo maererano nekunaya kwemvura. Kune shiri inonzi jesa inowanzo vakira dendere rayo mujinga merwizi, shiri iyi ikavakira dendere rayo munyasi nyasi zvinoratidza kuti mwaka unenge uchitevera kunenge kuine mvura shoma, dzikavakirawo pakakwirira zvinoratidza kuti mwana unotevera kunenge kuine mvura yakawanda munzvimbo iyoyo. Hunhu hweimwewo shiri zvakare inonzi shuramurove hunoshandiswa kuziva kuti mvura ichange yakamira sei mum-waka unouya. Shuramurove inozivikanwa kuti inobhururuka kubva kunzvimbo isina mvura achienda kune mvura. Kuuya kweshuramurove kunoratidza kuti mvurawo yava pedyo nekunaya munzvimbo iyoyo. Dendera ukanzwa rofuma kurira zvinoratidza kuuya kwemvura yemudenga.

Tichitarisawo miti neimwe michero yesango: Muzhanje ndeumwe wemiti inoshandiswa kuziva kuti mwaka uno-tevera kuchange kuine mvura yakafanira here. Gore rinenge rakabereka muzhange zvakanyanya rinotarisirwa kuti rinenge riine kushomeka kwemvura yemudenga mumwaka wezhizha. Gore rinoitawo mazhenje mashoma rinenge riine mvura yakawanda mumwaka wezhizha. Gore rapfuura munzvimbo yeMasvingo kwakanga kwakazara mazhan-je, uye mvura haina kuzonaya zvakanaka munguva yezhizha. Izvi zvinoratidza kuti zvakakosha kuti vaongorori vema-miriro ekunze vashandisewo ruzivo rwechivanhu pakupa veruzhinji tarisiro dzavanenge vawana.

Carmine Bee Eater imwe yeshiri dzinobhururuka dzichienda kunzvimbo dzichanaya mvura| Source - Phillip Briggs

Proceedings of the Southern Africa Regional Climate Outlook Forum

Praise Govere - GIS Intern, MSD

The Meteorological Services Department (MSD) of Zimbabwe proudly hosted the 29th Southern Africa Regional Climate Outlook Forum (from 26 to 29 August 2024), marking a significant milestone in regional weather forecasting and climate resilience efforts. The forum held in Harare at the Rainbow Towers Hotel, brought together meteorologists, climate scientists, and various experts from around the 16 countries of SADC to discuss and disseminate seasonal climate forecasts for the upcoming rainfall season. The event was officially opened by the Honorable Minister of Environment, Climate, and Wildlife, Dr. Sthembiso Nyoni, who emphasized the critical role of climate forecasting in promoting sustainable development and resilience in the region. Among the distinguished attendees was the Zambian Permanent Secretary, a respected foreign delegate, who contributed valuable insights to the discussions.

Their presence, alongside other prominent figures, underscored the collaborative spirit of SARCOF-29 and highlighted the importance of regional cooperation in addressing the challenges posed by climate variability and change. Climate Experts from the SADC National Meteorological and Hydrological Services and the SADC Climate Services Centre were all part of the delegation that was present for the proceeding of the forum. Inputs were acquired from the African Centre for Meteorological Application for Development (ACMAD) and Global Producing Centers (GPCs) namely, the European Centre for Medium Range Weather Forecast (ECMWF), National Oceanic and Atmospheric Administration (NOAA), Beijing Climate Centre, Mateo-France, Australian Bureau of Meteorology, UK Met Office, Japan Meteorological Agency and Korea Meteorological Agency .

Inputs from the International Research Institute for Climate and Society (IRI) and the National Centre for Atmospheric Research (NCAR) were also used in formulating the seasonal forecast. This seasonal forecast covered the period from October 2024 to March 2025. The Outlook was presented in overlapping three-month periods as follows: October-November-December (OND), November-December-January (NDJ), December-January -February (DJF), and January-February-March.

The Meteorological Services Department Celebrates a Joyous Union

Praise Govere - GIS Intern, MSD

Mr. Nolan Marumura putting a ring on his bride's finger, on their wedding day.

Marriage is an immensely significant milestone in one's life, marking the beginning of a new and profoundly meaningful chapter. The Meteorological Service Department (MSD) is thrilled to congratulate Mr. Nolan Marumura who embarked on the wonderful journey of marriage. Mr. Marumura a Meteorologist trainee at MSD training school, Harare headquarters, exchanged vows with his long-time partner in a beautiful ceremony held at Peter`s Lodge in Masvingo. The couple, were surrounded by family, friends and their cherished MSD family as they celebrated the beginning of their new chapter. Their colleagues described them as compassionate, hard working and always willing to go the extra mile in support of their communities. The MSD leadership and staff extend their heartfelt congratulations to the newlywed couples, wishing them a lifetime of love, laughter and endless blessings.

Well done Nolan!

A Dark Cloud Overshadows The MSD Family!

Tinetariro Chikati

Recently the Meteorological Services Department went through a rough patch due to the unfortunate circumstances which were faced by some of our colleagues. In the evening of 22 September 2024, we were notified of the loss that had occurred to Mr. Moyo's family, one of our Accountants who had lost his wife. On 30 September we lost Mr. Manyonga's mother, and she was buried at Zororo cemetery on 02 October 2024. On Friday 04 October we were also hit by another loss when we were notified of our Director's mother passing on. As usual, the MSD family attended the burials to support our colleagues in their time of grief.

Rejoice with those who rejoice

Weep with those who weep

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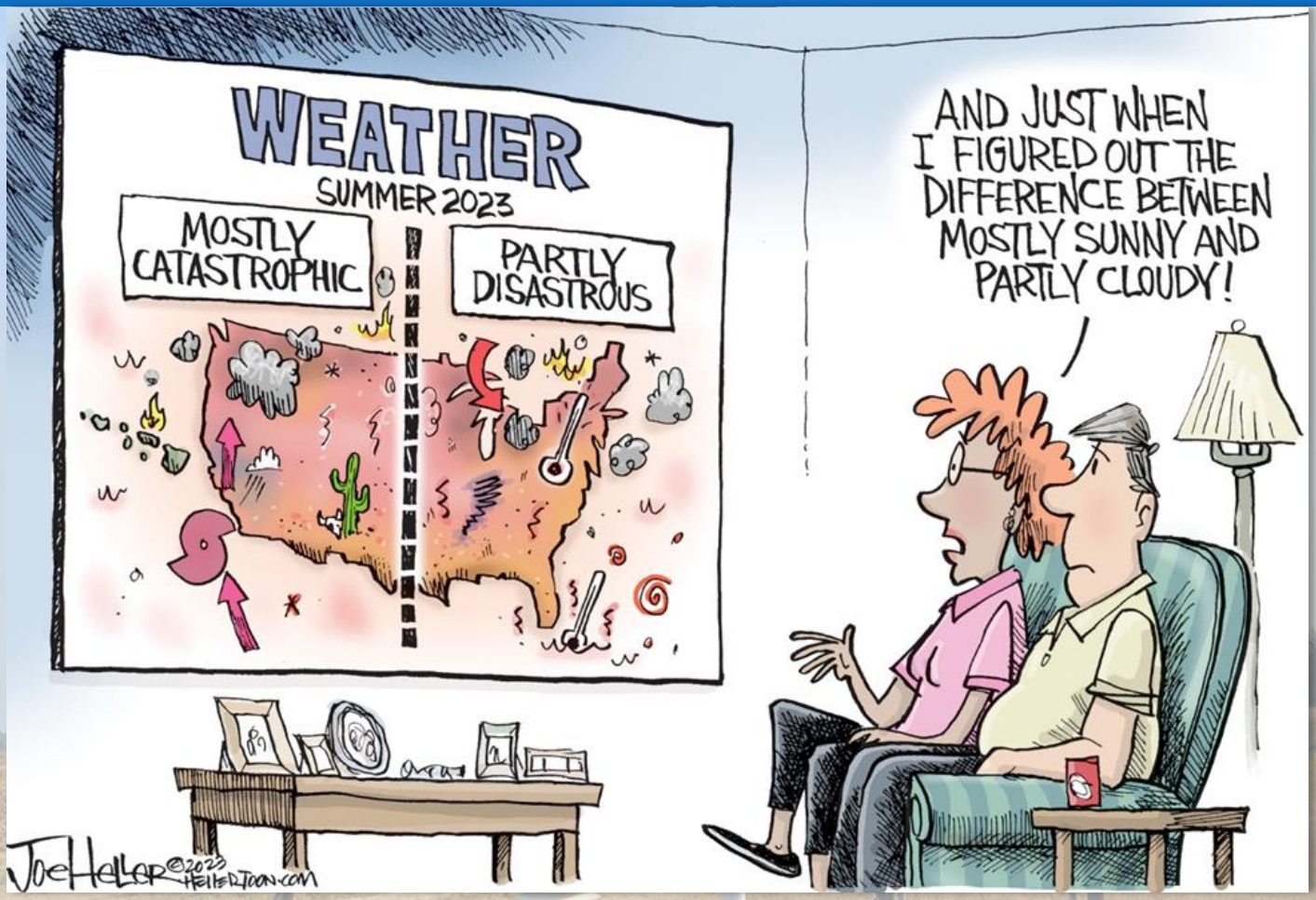
Activities Section



Quiz: How much do you know about Meteorology?

1. What is the study of weather called ?
2. What instrument is used to measure atmospheric pressure?
3. What is the term for a large body of air that has similar temperature and moisture characteristics?
4. What do we call the boundary where two different air masses meet ?
5. Which airborne instrument is used to measure and transmit data about the atmosphere?
6. What type of cloud is typically associated with thunderstorms ?
7. What is the phenomenon called when warm air rises and cool air sinks ?
8. What do we call a long-term average of weather patterns in a particular area ?

Answers

1. Meteorology **2.** Barometer **3.** Air mass **4.** Front

5. Radiosonde **6.** Cumulonimbus **7.** Convection **8.** Climate

METEOROLOGICAL SERVICES DEPARTMENT

'Where Science Meets The Sky'

ZIMBABWE

Vision

A world class provider of meteorological, climatological and seismological products and services by 2025.

Mission Statement

To provide customer and stakeholder driven quality seismological, weather and climate services for socio economic development.

Core Values

- **Teamwork:** We value unity of purpose
- **Equality:** We offer equal status, rights and opportunities to all
- **Customer focus:** We prioritize and address customer needs.
- **Transparency:** We are open to scrutiny
- **Integrity:** We have strong moral principles
- **Creativity:** We focus on innovation and continuous improvement.
- **Accountability:** We take responsibility for one's own actions.