

# STATUS & PRIORITY NEEDS OF MONITORING & PREDICTING CLIMATE ANOMALIES & EXTREMES BY

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# Outline:

- Introduction
- Climate Data and Observation.
- Climate Monitoring.
- Specific Issues Related to Climate Monitoring and Prediction in the Region.
- User Activities In support Of Climate Risk Management & Early Warning Systems

# Why Data Collection For Zimbabwe

One of the Meteorological Services Department's (MSD) prime functions is the measurement and collection of accurate weather records whose main purpose is to contribute to the safety, security and general welfare of the Zimbabwean community through performance of Meteorological functions.

It is also responsible for the collection and long-term custody of reliable meteorological and climate data in fulfillment of the country's and international obligations.

> 70% of Zimbabwe's population's livelihood depends on agriculture and more than 10 million people directly benefit from agriculture and sub sectors related to it, Yet weather and climate are still the key factors in agricultural productivity in Zimbabwe.

Need to increase the accuracy of the provision of weather forecasts, warnings, information and advisories for the general public and most major sectors of the society, including agriculture, aviation, tourism, environmental management and natural disaster mitigation



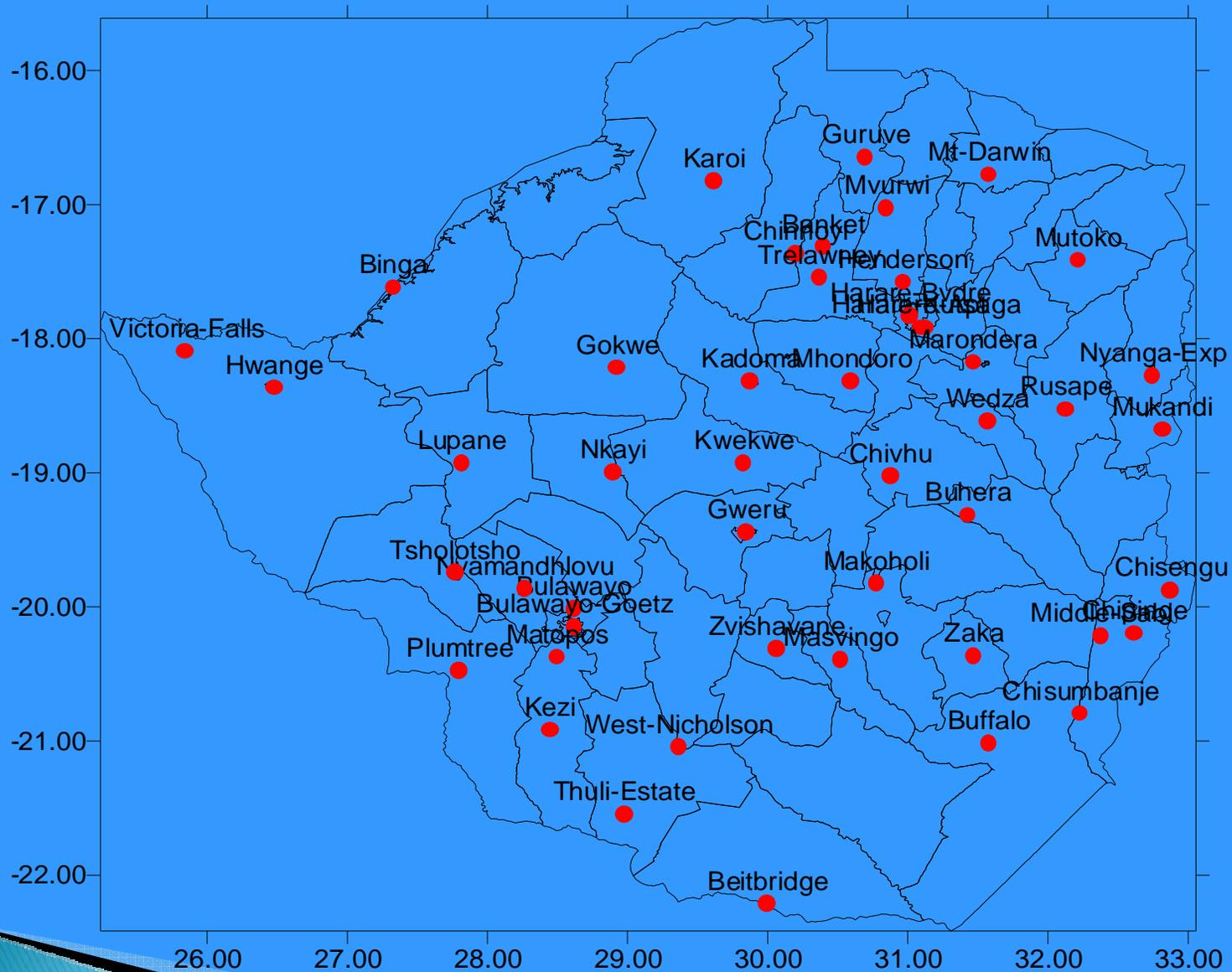
# Current Data collection Position

- 47 Manual Synoptic Stations manned by Met Personnel
- 17 Part-time Manual Synoptic Stations manned by Agriculture Extension Officers.
- ~300 Rainfall Stations (voluntary)

## MSD Strategic Plan On Data collection

- To have installed 150 AWS by 2015  
-currently at 17.
- To decentralize data capturing.
- To enter into sustainable partnerships.

# STATION DISTRIBUTION ZIMBABWE



# Specific issues related to climate monitoring & prediction in the region

- Sparse observation network that provides input to NWP models is a cause for concern as it affects quality of forecasts.
- Not an exact science-probabilistic
- Exact timing of events not known
- Understandability and interpretation of the forecast
  - If farmers do not understand the forecast (probabilistic terms), they may ignore it or use it wrongly thereby making wrong decisions. AN=floods?, BN= Drought?
- Timely communication
  - Forecast not useful if it comes when farmers have already planted or purchased certain seed varieties.
- Translation
  - Some technical terms are difficult to put into local language

# cont'd

## ➤ **Credibility:**

- If previous forecasts were viewed as “*wrong*” , people will not believe subsequent forecasts.

## ➤ **Communication Channels Used:**

- Certain media( print or electronic) not appropriate for certain communities , will not be able to reach many people.

## ➤ **Scale:**

- Farmers require a more localized seasonal climate forecast but current advances in seasonal climate forecasts only provides generalized regional climate information relevant to seasonal time scales and relatively large areas.
- Access to inputs( cost and/or availability)
- Seed ,fertilizer, draught power etc
- Farmers fail to take advantage of a favorable forecast.

## ➤ **Feedback**

- Was information provided useful and/or accurate?
- Enables tailoring of product to suit needs of different users.

# Institutional Arrangement

## Early warning systems

- ▶ The existence of an early warning mechanism involving the Meteorological Services Department and the Civil Protection organisation in Zimbabwe,
- ▶ Ministry of Local Government, Rural and Urban Development (Department of Civil Protection) plays the coordinative role in DRR activities.

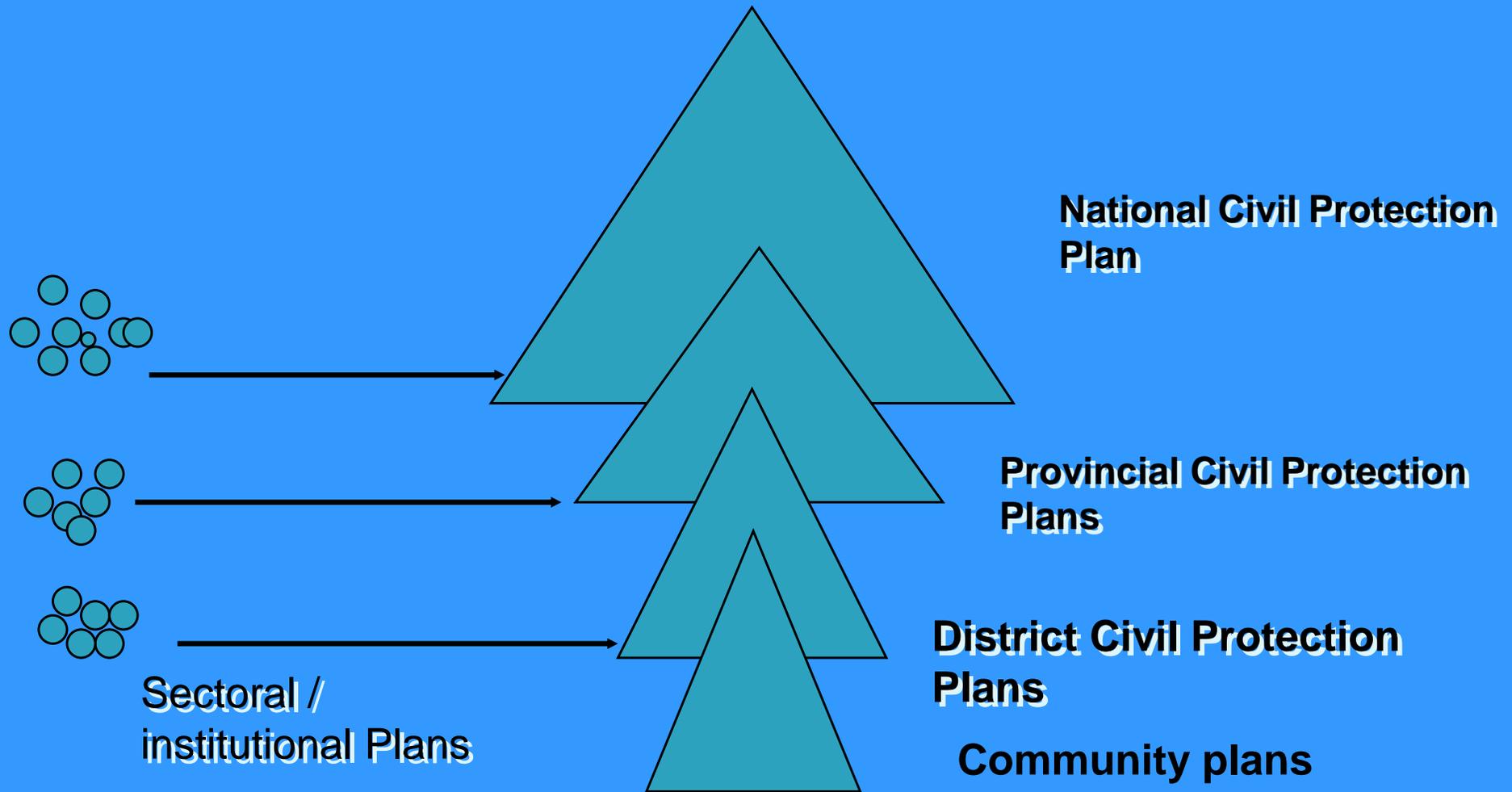
## Regional

- SADC-CSC

# Cont..

- ▶ –Many Disaster Risk Reduction and adaptation projects are currently being driven by the Governments and local and international NGOs, NGO's and self-help groups have started initiatives to reduce vulnerability to drought.
- ▶ –Rehabilitation, better land-use planning and building regulation at the community level
- ▶ –Integration of DRR into the education system of the country

# Levels of Emergency Preparedness Planning



# *Capacitation of Communities*

- ▶ –Local (affected) communities have a much bigger role to play. As a result, they are involved in planning.
- ▶ –They are the custodians of local coping strategies (Indigenous Knowledge Systems) that can be used as initial early warning and response mechanisms.
- ▶ –Vulnerable communities are being capacitated in DRR activities

# vacate homes to avoid floods: Met

By Kuda Bwini

HEAVY RAINS living in low-lying areas have been predicted to relocate to higher ground as the heavy rains are expected to persist for several more days. The Civil Protection Unit (CPU) and the Meteorological Services Department have warned that the rains, which started falling across the country on Thursday, will continue into the week. Low-lying areas are likely to be hit hardest by the forecasted floods, which pose serious risks to human life, stock and property.

The CPU urged people in areas such as Middle Sabi, Muzarabani, Chikwatalakwala, Tsholotsho and Gokwe to consider relocating to safer ground to avoid the floods. The department advises people in low-lying areas close to dams, lakes and rivers to monitor water levels and move to safe ground immediately. It also urged members of the public, especially children and public transport operators, to avoid crossing flooded rivers as this could cause drowning.

The Met Department said the heavy rains that have been falling in most parts of the country would continue for much of this week, adding that the

cloud system responsible for the rains would continue to hover over most parts of the country. The Meteorological Services Department wishes to advise that copious rain has occurred across the country with heavy falls in places. Mountains, the remains anchored over Zimbabwe, thereby further increasing the prospects of more rain across the country up to November 24 or beyond," said the Met Department's acting director, Mr. Teravanh.

Mr. Mubvumba said heavy rains, which initially started in the provinces of Matabeleland, Bulawayo and Masvingo, would be experienced in all parts of the country by today, increasing the risks of flash

floods. "Because of the heavy falls and risk of localised flash flooding in parts of the department. A violent storm, which was accompanied by winds of up to 40 knots and left a trail of destruction in Bulawayo and Masvingo, is expected to continue in Zimbabwe. Mr. Mubvumba, however, said the forecasted because the current wet season of the middle level trough deepened. According to the weather update on Friday, the three provinces of

# Heavy rains expected

HEAVY rains are expected to pound most parts of the country starting tomorrow, ending a prolonged dry spell that has seen many farmers anticipating heavy losses.

Meteorological Services Department senior forecaster Mr. Jonathan Chifuma yesterday said some areas would receive in excess of 50mm of rain over 24-hour periods from tomorrow until Monday next week. "The rains should start from the north moving southwards by Thursday. Heavy falls are expected in areas such as Masvingo province by Thursday," he said.

Parts of Manicaland, Matabeleland South, Masvingo and Midlands provinces have not received rains in the past three weeks and crops have been withering.

In many areas, crops have started withering. The Met Department, which started cloud seeding last year, predicted normal to above normal rainfall for the first part of the wet season and normal to below normal rainfall in the second part, which spans from late January to March. The country has been experiencing successive droughts during the past few years, adversely affecting agricultural production. Meanwhile, Government will not allow

local milling companies to import genetically modified grain and will insist that all importers buy produce grown under natural conditions. Agriculture Minister Joseph Made yesterday said Zimbabwe was not yet ready to handle genetically modified grain.

"Government will not allow the industry to import genetically modified grain because it will contaminate the environment if mishandled. We will only allow non-genetically modified grain into the country," he said.

Minister Made's comments were triggered by reports that the Grain Millers' Association was seeking permission to import genetically modified grain.

The association said this was necessitated by the likelihood that farmers might not meet national cereal demand this season due to poor rains.

GMAT chairman Mr. Tafadzwa Musarara yesterday said: "We are only waiting for approval from Government and once approval is granted, we will start (importing) immediately."

He said some of the mealie-meal being imported was from genetically modified maize and hence there was no need to stop importation of grain.

The Herald 26/01/10 HARARE ZIMBABWE

# Cabinet to meet over dry spell

By Emilia Zindi and Itai Mazire

CABINET will soon discuss the dry spell which has rendered about 54 families homeless and in desperate need of shelter and food. The storm swept across the country, earlier this month. In the latest case, 54 homesteads were destroyed while about four hectares of mature tobacco was damaged. Addressing the affected families, Adv Dinha

undertaken with the Ministry of Agriculture and Forestry. "The Cabinet will discuss the issue had not yet been debated in Cabinet while Agriculture was yet to be discussed. The Ministry of Agriculture has yet told us if it is a drought or if it is the cause of delayed rains. The importation of grain has to be discussed. We will start preparing the other logistic requirements of grain

# Hailstorm leaves 54 Muzarabani families homeless

THE hailstorm that hit parts of Muzarabani at the weekend rendered about 54 families homeless and in desperate need of shelter and food. The storm swept across the country, earlier this month. In the latest case, 54 homesteads were destroyed while about four hectares of mature tobacco was damaged.

Addressing the affected families, Adv Dinha

visited the affected villages to assess the damage caused by the hailstorm. Addressing the affected families, Adv Dinha

opened in Dotto," he said. Adv Dinha assured the community that by the time the schools open in February, after the walls collapsed. "Some of the parents of the children

# Better season for Sadc forecast

LATEST rainfall forecast points to improved season for most of SADC. The January to March 2010 climatic projections just released show more rainfall for most parts of Southern Africa than in the first half of the season, October to December 2009. The predictions are still largely consistent with the forecast of the 13th Southern African Regional Climate Outlook Forum held in August 2009. As forecast in the SACORF 13, normal to above-normal rainfall is expected across the northern half of continental SADC, Madagascar and Mauritius.

ern Botswana, northern Lesotho, southern Mozambique, northern South Africa, Swaziland and southern Zimbabwe. Areas with a high likelihood of below-normal to normal rainfall include southwest Angola, western Namibia and south-western South Africa. From a farming perspective, the long dry spells usually come when rainfall is most required by crops, particularly cereals and thus negatively affecting crop production. Climate experts, however, point out that this update is relevant only for three-month time scales

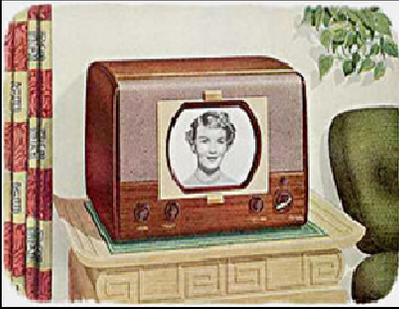
the climate of the Sade region including the Indian Downpour and atmospheric circulation processes that bring moisture into the region. In view of these factors, the wetter than normal conditions in some parts of the region and the drier than normal in the other parts are linked to the effects of the El Niño phenomenon. The impact of El Niño in the Sade region has varied significantly in its severity, though it generally has a greater impact in the southern half. El Niño events have historically produced extreme weather conditions in Southern Africa.

global warming. Records provide evidence that during the last four decades the number of El Niño events increased while the number of La Niña events decreased. The former phenomenon is known to occur approximately every four to seven years, but the last four El Niños including the current one, have occurred every two to three years. While well established, climate experts note that the current El Niño condition is rather weak and Southern Africa is expected to start to see normal rainfall in the next few months.

# Experts predict normal to above normal rains

The Herald 05/02/2010 Harare Zimbabwe.

likely in the remainder of the 2010 season. In line with the earlier forecast, this covers east temperature anomalies over the Pacific, Indian and Atlantic oceans as well as areas that affect Studies of historical climate data show that the recent El Niño variation is most likely linked to



## EXAMPLE OF WARNING THAT CAN BE ISSUED:

- IMMEDIATELY GET OFF ELEVATED AREAS SUCH AS HILLS, MOUNTAIN RIDGES OR PEAKS
- NEVER LIE FLAT ON THE GROUND
- NEVER USE A TREE FOR SHELTER
- NEVER USE A CLIFF OR ROCKY OVERHANG FOR SHELTER
- IMMEDIATELY GET OUT AND AWAY FROM PONDS, LAKES AND OTHER BODIES OF WATER
- STAY AWAY FROM OBJECTS THAT CONDUCTS ELECTRICITY (BARBED WIRE FENCES, POWER LINES, WINDMILLS, ETC.)



**THANK YOU**  
**TATENDA**  
**SIYABONGA**

