Infrastructure and Expertise available to the Advisory Section

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Outline

• INTRODUCTION
• STRUCTURE
• PRESENT INFRASTRUCTURE
• EXPERTISE
• SPECIFIC ISSUES
• USER ACTIVITIES
• CONCLUSION
Introduction

• The National Meteorological Services of Swaziland was established in 1993, after the amalgamation of the meteorological service providers which existed then.

• MISSION: To monitor weather and climate and issue advisories for safety of life and property while vigorously leading Swaziland to a low carbon emission path in its sustainable socio-economic
-development, taking into account regional and international initiatives and standards.

VISION: To provide high quality weather and climate related services that are widely understood, available and easily accessible and greatly valued by all people of Swaziland and the world at large.
Structure

- Comprised of three units, namely Support, Operations and Advisory units.
- Climate data, observations, and long range forecasting falls under the Advisory unit of the National Meteorological Services of Swaziland.
- Climate monitoring will fall under this unit once in place.
Infrastructure (observations)

• Swazi Met maintains a network of eleven climatological stations.
• 5 of these stations are fully manned and maintained by Swazi Met.
• The rest are run by research/academic institution with the assistance from the Swazi Meteorological Service.
From these climate stations, the Advisory Section is able to receive daily maximum and minimum temperatures, rainfall, wind speed and directions.

20 Rainfall station

These are volunteer stations which provide the Met Service with daily rainfall figures.
• 15 Automatic Weather Stations (AWS).
• These automatically transmit data to the head office hourly.
• The climate data generated from the land stations is transmitted either telephonically daily to the head office or sent through the mail as monthly reports.
cont’d

• We also have a lightning sensor which covers the whole country and is linked to the regional hub in Pretoria.

• This allows us to issue Lightning warnings.
Infrastructure (Climate data)

- Clisys-A Climate Data Management System developed by Meteofrance which provide a set of tools and procedures that allow all data relevant to climate studies to be properly stored and managed.
long range forecast

• Three tools are used in the preparation of long range forecasts-SARCOF
  1. Plato IDE which is used to locate the basins with high correlation of Sea Surface Temperatures (SST’s)
  2. Grads which is used for extraction of the SST’s from the sea basins.
  3. Systat which is used for the Regression Model.
Expertise

• The unit is headed by a WMO class 1 Meteorologist.
• The long range forecasting is done by a WMO class II Meteorological Technician.
• Data base management is a responsibility of WMO class II Meteorological Technician.
• Meteorological Observations are carried out by WMO class III and IV technicians.
Cont’d

- In those stations that are fully maintained by the National Meteorological Services of Swaziland.
- For the rainfall volunteer stations, the data is handled by none experts but is subjected to some vigorous quality control measures before it can be put to use.
Specific issues

- Some times the Long range forecasts is requested long before the experts in the region have meet and issued it (before Sarcof)
- The duration of the seasonal forecast preparation is short. Experts sometimes work until midnight during those sessions.
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• The temperature forecasts are not included in the preparation of the long range forecast yet end users are interested in knowing them.
User Activities

• The department carries out regional workshops together with the Ministry of Agriculture after the issuing of each seasonal forecast sensitizing farmers on the importance and the use of the forecast for planning.

• The department also works hand in hand with National Malaria Control Unit under Ministry of Health by providing them
Cont’d

• With seasonal forecast so they are able to know areas likely to have a scourge of mosquitoes so they can plan their mitigation strategies.

• The Disaster management services is also a part our advisories clients as they are continuously advised on areas likely to be affected by extreme weather, eg Lightning prone areas, Flooding prone areas, areas likely to experience heat waves, e.t.c
The Central Forecast Office issues public warnings incase there is likelihood of extreme weather.

These warnings are usually issued through the media and the swazimet website.

They are always accompanied by mitigation procedures whenever they are
It ssued.
-There is also SMS services where relevant stakeholders are notified should there be a climate advisory-generated by Meteofactory
In addition to all of the above, the department, regularly conducts schools visits, radio and television shows where the public is advised on issues of climate change.
Challenges

• Lack of manpower—due to the fiscal difficulties our Government was facing in the last few years, we have not been able to adequately man all our weather stations.

• Non continuous data sets—Since our stations are insufficiently manned, we have difficulty in having observations carried out over the weekends.
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• We also have a shortage of skills to effectively manage our database systems. We frequently encounter problems with Clisys, which with proper staff training and skill transfer could be solved.

• AWS’s breakdown frequently. They are not fixed in time hence we continue to have data non continuous data sets.
Conclusion

• Intranet linking outstations to the main server. Officers in these stations will be able take care of preliminary data processing and key entry.
• Recruitment permission has been requested from Government.
Flooding in Mbabane
Dead cattle due to extreme cold
The End

For more visit
www.swazimet.gov.sz

Thank you!