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Agrometeorological Activities in Tanzania

By
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OUTLINES

• Background information
• Community involvement
• Agromet products
• Dissemination channels
• Conclusion
BACKGROUND INFORMATION
TMA Headquarters and CFO
Agromet Human Resource

Operational Agromet stations: 13
Agromet staff = 32
Out station = 2 persons/ station
TMA Hqts = 6 persons
Education level: Master degree = 1, Bachelor degree = 3, Met technician senior level = 2, Met Assistants = 26
Rainfall Seasons

Bimodal: Oct-Dec & Mar
Unimodal: Nov-Apr

Area: 947,300 sq km
land: 885,800 sq km
water: 61,500 sq km

Population: About 45 Mil
AGROMET ACTIVITIES: COMMUNITY INVOLVEMENT
AGROMET AND REMOTE SENSING SECTION

Sources of Information

• Synoptic Weather Stations (Min. & Max. temp.) etc
• Agromet (Soil temp., phenological phases etc)
• District Agricultural offices (Crops conditions)
• Agricultural stakeholders (Crop conditions)

CENTRAL FORECASTING OFFICE (TMA)
• Seasonal forecasting
• Monthly weather forecasts
• 10-days weather forecasts

• Vegetation status
• Rainfall estimates
• Evapotranspiration

AGROMET
• Surfer
• Geospatial WRSI v3
• Instat plus

Feedback

Disseminations

Weather information to farmers

Website: www.meteo.go.tz & www.wamis.org
E-mail:
Mobile phones

Dekadal Agromet bulletin
Monthly Agromet Bulletin
Seasonal Agromet Bulletin
Warning

Participatory Approach

• Community involvement
• Advisory to farmers
Downscaling Process of Climate Outlook: District level

Stakeholders’ Meeting
TMA scientists, Agriculture, Livestock, Water and Energy, Health, Disaster Management, Media, etc

Press Release
TMA Director General and Media

Development of Consensus Forecast
Core Team Members (DALDO, TMA, SUA, IK Custodians, Ward Agriculture/Livestock Extension Officers, and Input Suppliers)

Consensus Seasonal Weather Forecast and Advisory for farmers and livestock keepers

Downscaled forecast and Agromet Advisory at District level (TMA)

IK forecasts
Mhezi, Bangalala, and Ruvu Wards

TMA/SUA Project in Same District
Community participation in preparation and dissemination of weather information

Weather forecast core team, Tanzania (IK custodians, agric extension officers, SUA researchers & TMA): Integrated IK & scientific weather forecasts preparation and dissemination for MAM 2013 season- CCAFS project

School training programme
local forecasters in Ngorongoro, Monduli and Longido in action!

Use of a variety of indicators to predict the next season!!!
Economic benefits of met information

Crop conditions on 19th April 2011, Hombolo Dodoma region: Experimental farm (HEX 01): TMV1 Maize, a composite variety (left panel) and Control farm (HC01): STAHA Maize, a composite variety (right panel): WMO/TMA project on Evaluation of socioeconomic benefits of Met information and products for Agricultural sector in Tanzania
Director General of TMA Dr. Agnes Kijazi (seated at the middle) officiated a one day National Stakeholders’ workshop on Evaluation of socio-economic benefits of meteorological information and services in the Agricultural sector in Tanzania” held in Dar es Salaam on 2nd October 2013: WMO/TMA project 2010-2013 report
AGROMET PRODUCTS
Capacity building in data analysis and use of climate products for Agriculture

Training in Statistical in Applied Climatology (SIAC) in January 2014 WMO/University of Reading UK, Sokoine Univ. of Agric (SUA), Tanzania Met Agency (TMA); CCIAM project: held at SUA 13-24th Jan 2014

Training in Statistical in Applied Climatology (SIAC): Data Analysis

Training in Statistical in Applied Climatology (SIAC): Users of Agromet information
Summary

The Bulletin contains a brief review of the performance of September to December 2011 rainfall season, and evolution of the climate systems, and outlook for the March to May 2012 (MAM) rainfall season, and advices on the likely impacts. Outlook for March to May (MAM), 2012 rainfall season indicates that the Lake Victoria basin, northeastern highlands, northern coast, western (Kigoma and parts of Rubaia regions, central (much of Dodoma region) are expected to receive normal to above normal rains while Shinyanga, Tabora, Singida, Mbulu, northern Iringa, central Morogoro, and much of Lindi are expected to receive mainly normal rainfall. Southern and parts of southern coast are expected to experience normal to below normal rainfall. It should be noted that heavy and short duration episodic events are common even in below normal rainfall conditions.

October to December 2011 Rainfall Season

The performance of the October to December 2011 short rains (Goha) varied well over most parts of the country. However, both temporal and spatial distribution was not good in some areas. Towards the end of the season in December some areas received heavy rainfall that caused catastrophic disasters mainly over some parts of Dar es Salaam, Mara, Manyara, Indian Ocean is projected to persist through March, 2012 leading to weak easterlies towards East African coast. The northern subtropical systems are projected to be relatively weaker than the southern systems that suggest the possibility of fast retreat of the Inter Tropical Convergence Zone (ITCZ) from south to north. Due to projected slight warming over South-western Indian Ocean and due to the likelihood of factors favoring the development of tropical storms, the number of tropical storms is projected to increase and this may have impact on the MAM seasonal rains.

SYNOPSTIC SITUATION


Handeni (10.5 mm). The remaining areas received rainfall below 10 mm.

MEAN AIR TEMPERATURE

MEAN MAXIMUM TEMPERATURE DURING THE MONTH RAN BETWEEN 15.6°C AND 29.0°C AS INDICATED IN FIGURE 1A BELOW. THE HIGHEST ABSOLUTE MAXIMUM TEMPERATURE OF 31.2°C WAS OBSERVED AT JULIUS NYERE INTERNATIONAL AIRPORT DURING THE FIRST DECADE OF THE MONTH. THE LOWEST ABSOLUTE MAXIMUM TEMPERATURE WAS 16.1°C OBSERVED DURING THE SECOND DECADE OF THE MONTH OVER IGGI IN THE SOUTHWESTERN HIGHLANDS. TEMPERATURES WERE RELATIVELY LOW OVER...
DISSEMINATION
CHANNELS
## Info. Dissemination channels

<table>
<thead>
<tr>
<th>S. No</th>
<th>Channel</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Radio</td>
<td>Well Used but limited to number of radio stations</td>
</tr>
<tr>
<td>2</td>
<td>Email</td>
<td>Indirect through DALDO, VEO and Village gathering</td>
</tr>
<tr>
<td>3</td>
<td>Television</td>
<td>Few individuals</td>
</tr>
<tr>
<td>4</td>
<td>Family to family</td>
<td>Well used after village gatherings</td>
</tr>
<tr>
<td>5</td>
<td>Personal</td>
<td>Well used after and during village gatherings</td>
</tr>
<tr>
<td>6</td>
<td>Religious</td>
<td>Moderately used during religious gatherings</td>
</tr>
<tr>
<td>7</td>
<td>SMS</td>
<td>Poorly used</td>
</tr>
<tr>
<td>8</td>
<td>Extension Services</td>
<td>Well used</td>
</tr>
<tr>
<td>9</td>
<td>Internet</td>
<td>Poorly used</td>
</tr>
</tbody>
</table>

*Churi et al, 2012*
TMA weather info. dissemination channels

- 27 stations
- TanzaniaMetAgency
- 6 newspapers
- @tmaservices
- 5 TV stations
- @tma_services
- www.meteo.go.tz
- www.wamis.org

Largely used for agromet information: more than 500 farmers and agric extension officers are registered in FarmSMS/mobile phone
FarmSMS: Main components

- Application Engine
- Database
- Knowledge base
- SMS Interface
- Web interface
- Application Engine
- Input suppliers
- Extension Service
Dekadal weather forecast

New  View

Lushoto

Rain forecast: Normal
Advisory: Wakulima waendele na palizi, na kilimo cha kuhifadhi unyevu, Fuata ushauri wa Afisa Ugani
From (date): 21-04-2013
To (date): 30-04-2013

2013-04-24 17:06:11  Delete
Monthly Weather Bulletins

Click on the download link to download the Weather Bulletin to view this document. Click here to download Acrobat Reader.

Dekadal weather Revier 21-30, September, 2011 (28KB)
Dekadal weather Revier 1-10 September, 2011 (253KB)
Seasonal Weather Forecast October - December 2011
Dekadal weather Revier 1-10 August, 2011 (329KB)
Monthly Weather Bulletin for July, 2011 (329KB)

World AgroMeteorological Information Service

United Republic of Tanzania
Dekadal Weather Review
Monthly Weather Bulletin

The Tanzania Meteorological Agency (TMA) produces a decadal (10 day) and monthly weather bulletin. The Dekadal Weather Review provides a 10 day summary of the synoptic situation, rainfall, agrometeorological and hydrometeorological impacts, and a weather outlook for next decade. The Review also provides a rainfall map and relevant graphs and is only produced during the crop growing season. The Monthly Weather Bulletin provides a synoptic and weather summary; information on temperature, sunshine hours, and windspeed; satellite information including NDVI; an agrometeorological and hydrometeorological summary; and the expected synoptic and rainfall situation for the next month. The monthly bulletin is produced every month of the year. A Seasonal Weather Forecast Bulletin is also produced every few
CONCLUSION

Much efforts are on:

• Weather forecast products for Agromet application
  – Reliable forecast
  – Specific

• Have well established communication pathways

• Capacity building: have sufficient knowledge to information user groups

GFCS programme, SWFDP (EA) and other /partners to reach the farming community
ASANTE

THANK YOU