OBSERVED CLIMATE DATA IN TANZANIA

Presenter: Sarah Emerald Osima
Principal Meteorologist, Head Environment, Tanzania Meteorological Agency
Email: sarah.osima@gmail.com
Tanzania Meteorological Agency

• Tanzania Meteorological Agency (TMA) is a Government Agency since December 1999 to date.
• Before it used to be the Directorate of Meteorology (from 1978) under Tanzania Government, which was earlier operated by the East Africa (E.A) Meteorological Department of the former E.A. Community. The Headquarters were in Nairobi, Kenya.
Some function of TMA

• To organize and manage surface and upper air observation networks and record the climate conditions of the United republic of Tanzania

• To issue and disseminate forecasts and other weather information such as warnings, etc for the safety of life property

• To collect, process, store and disseminate meteorological information

• To take part world wide (or global exchange) of meteorological data and products for the safety of humankind and to enhance the understanding of the global atmosphere
Objectives

• The role of climate data
• Status of observation stations in Tanzania
The role of climate data

- To enable understanding of the past and current climate of a given region.

- In the evaluation of the climate models in the simulation of the present and future climate change projections.
The role of climate data

Needs

- Reliable observed climate data
- **Climate model data (preferable regional climate models)**
Example: Evaluation of a regional climate model (osima’s PhD thesis 2014)

(a) Bimodal rainfall regime

(b) Unimodal rainfall regime
TMA observation network stations

130 climate stations (req. 250)

28 synoptic stations (req. 70)

14 Agromet stations (req. 35)

15 automatic weather stations (req. 80)

1 Weather Radar (req. 7)

1549 rainfall stations (req. 2500)
Examples of TMA Meteorological Offices
Mbeya Meteorological station, Tanzania
Kilwa Meteorological station, Tanzania
Meteorological equipment in TMA
Challenges faced in TMA obs. networks

- Inadequate observation stations
- Insufficiency of funds to run the available stations (incentives stations)
- Inadequate modern equipment: automatic weather stations, radar, telecommunication, working facilities computers ..etc
- Inadequate experts
Case study: Great Ruaha River sub basin (PhD thesis 2014)

- How often do we visit the climate station for the purpose of the MAINTENANCE?
- Do we have facilities to maintain the available stations?
What about data storage?

??

(a) Data collection from the observation station

(b) Data archives — Dodoma
Number of available stations with rainfall data in GRR

- X-axis: Years (1930 to 2010)
- Y-axis: Number of observation stations (10 to 60)

The graph shows the trend of available stations with rainfall data in GRR over the years from 1930 to 2010. The number of observation stations increased significantly until around 1980, then showed fluctuations until 2010.
TMA 5 Year Plan: Modernization of Met. Services in Tanzania
TMA Plan in the improvement of the Met. Services in Tanzania

• To highlight key areas towards Modernization of Met. Services in Tanzania;
• To improve Meteorological Infrastructure
• Improve capacity building
• Improve data processing and archiving
• Implementation plan and Financial requirements.
THANK YOU FOR YOUR ATTENTION

ASANTE KWA KUNISIKILIZA

Rwanda, Kigali 2014