



Short Report on Observing Networks

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Workshop on Regional WIGOS Centers for East Africa, 3-5 December 2019, Nairobi, Kenya

TANZANIA METEOROLOGICAL AUTHORITY

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Introduction to national observing networks

- TMA has the power to regulate and coordinate meteorological activities including observing network in the country.
- TMA is a National Authority responsible for establishing and maintaining meteorological observation networks



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Introduction to national observing networks

- The Authority has established surface and upper air observation networks including:
- Synoptic stations, Agromet stations, Automatic weather stations, Rainfall stations (mostly voluntary)
- Upper air stations and
- Weather Radars



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Intro...

Some synoptic stations are GTS registered for international Exchange

Some synoptic stations are Oscar Surface registered for international visibility.



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Data availability

TMA continues to maintain the available stations and install new mostly automatic weather stations to increase data availability for true representation of the grounds.



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Improved Meteorological Instrument workshop

TMA has enhanced capacity of the instrument workshop that is used to calibration and comparison of readings from the instruments

This aims at improving of quality of observation data from individual stations.



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Improving communication

Tanzania Meteorological Authority has continued to improve internet communications from the observation stations for both Manned and unmanned stations all the country and the progress is impressive.

The improved internet connectivity via connections to the national fiber back-borne has improved national and international data availability.



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International Data sharing

Tanzania Meteorological Authority is committed to improve international data availability through GTS and WIS for regional and international access.

TMA will continue to improve its international data availability through registration of more stations in the GTS and OSCAR platform.



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Observation Network

Stations	Number	GTS Exchange	OSCAR Registered	Status
The manned stations				
Synoptic weather stations,	29	15	26	Active
Agrometeorologi cal stations	15	0	0	Active



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Synoptic station in Tanzania



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National Radar Observation Network plan

Plan for National Radar network	Available and operational Radars	Plan for 2019-2020	Plan for 2021
7	2	3	2
Locations	Dar es salaam, Mwanza	Mbeya, Mtwara, Kigoma,	Dodoma and Kilimanjaro



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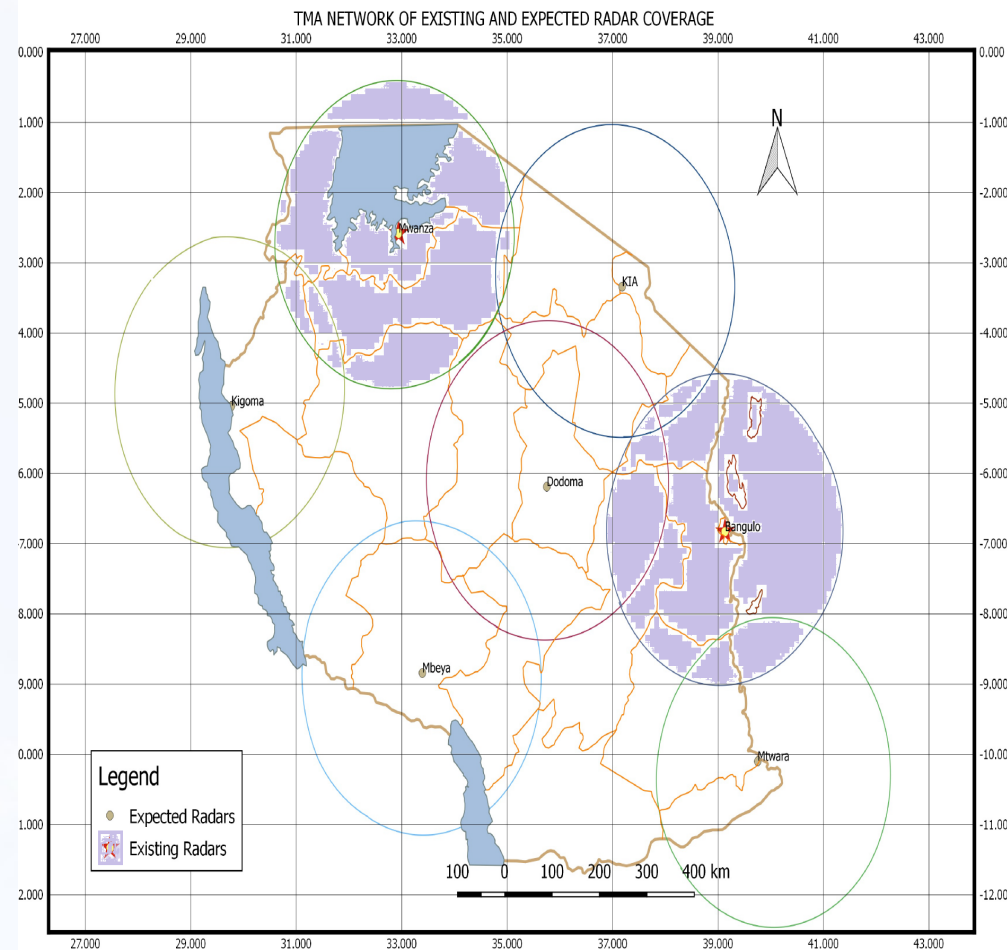
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Network of existing and Expected Radars



Weather RADAR

Number of stations: 2

Type of RADAR: S-Band RADAR

Radius of Coverage: 150-250 km

Mode of Operation

- 24/7 During Rainfall Season
- 3 days a week off Season

Future Plans

- Procurement of more 5 RADARS
- Integrating All Observation network for real time Observation and Alert System



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Weather Radar at Mwanza



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National Upper Air Network observation

Plan for National Upper Air	Available and operational Upper Air	Plan for Revival 2019-2020	Future plan
3	0	1	2
Locations	Dar es salaam, Tabora and Kigoma	Dar es salaam	Tabora and Kigoma



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National Automatic weather stations (AWSs) observation network

Available AWS	Available, active and operational AWS	Available and not active AWS	Required
52	43	9	58



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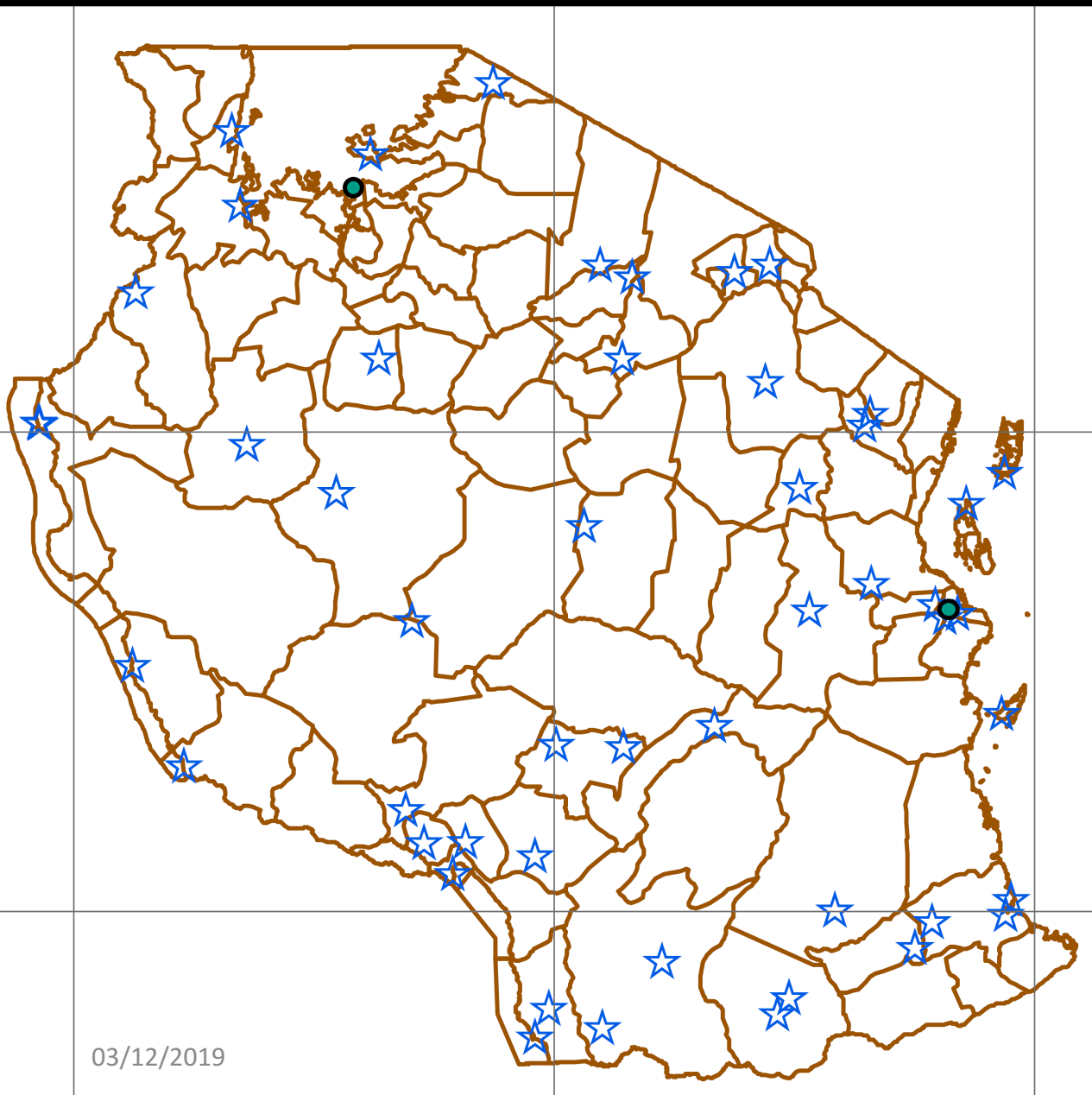


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Network of AWS and Radars



48 AUTOMATIC WEATHER STATIONS

Mode of Operation

- Automatic Observation and transmission (30 interval)

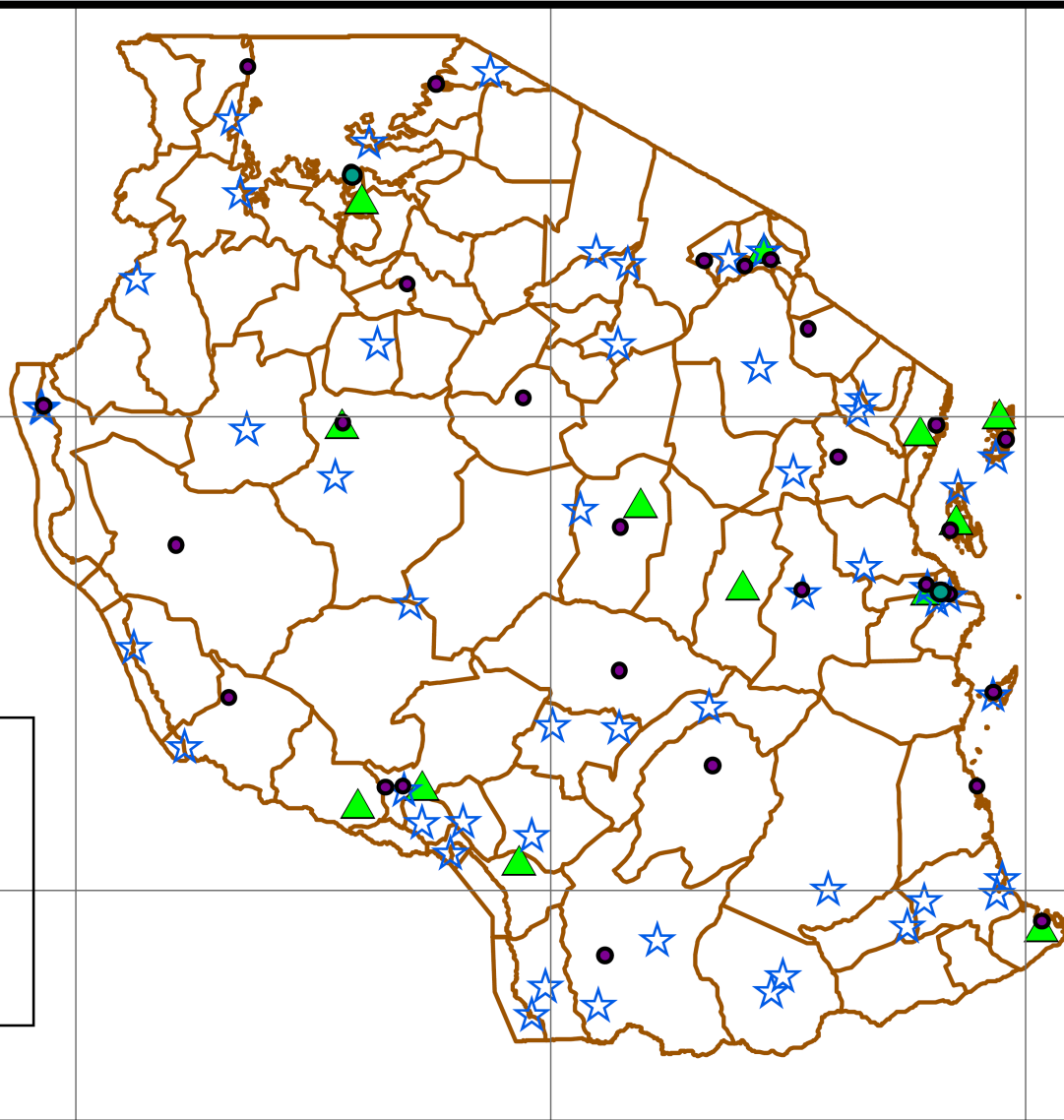
What do they measure

- Air Temperature (Wet, dry, Max, Min)
- Pressure
- Wind (Speed and Direction)
- Evaporation
- Relative Humidity
- Rainfall
- Radiation
- Relative Humidity

Future Plans

Increase sensors and introducing Real Time Monitoring system for integrating all AWS

All main Meteorological Stations



- 52 - AWS
- 28 - SYNOPTIC STATIONS
- 13 - AGROMETEOROLOGICAL STATIONS
- 2 - WEATHER RADARS
- 150 – CLIMATOLOGICAL STATIONS
- 1000+ - RAINFALL STATIONS

TANZANIA OSERVATION STATUS AND GAPS

S/N	STATION TYPE	EXISTING	GAP
1	SYNOPTIC	29	15
2	AUTOMATIC WEATHER STATIONS (AWS) (Target 0.5sq.deg)	49	61
3	AGRO-METEOROLOGICAL STATIONS	15	5
4	CLIMATOLOGICAL STATIONS	150	100
5	RAINFALL STATIONS	2056	-
6	AUTOMATIC RAINFALL STATIONS (20km x 20km)	0	2500
7	MARINE STATIONS (BUOYS)	0	12
8	UPPER AIR STATIONS	1	3
9	PILOT BALOONS STATIONS	1	5
10	RADAR STATIONS	2	5
11	LIGHTING DETECTORS	0	10

National Collaborations for integrations

TMA has several MOUs with partner institutions for data sharing.

TMA has developed a National WIGOS Implementation Strategy to enhance national collaboration and data sharing.

Tanzania has a national sharing platform, system developed (NDCH) for stations integrations, access and data sharing among partners in the national.



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National Database For Climate and Hydrology (NDCH)

Tanzania has developed a well designed database for climate and hydrological use, the National Database for Climate and Hydrology.

The system is used to share meteorological and hydrological data from for the registered stations in the country.

The system can be accessed through tma.meteo.go.tz/ndch



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NDCH



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Welcome to NDCH

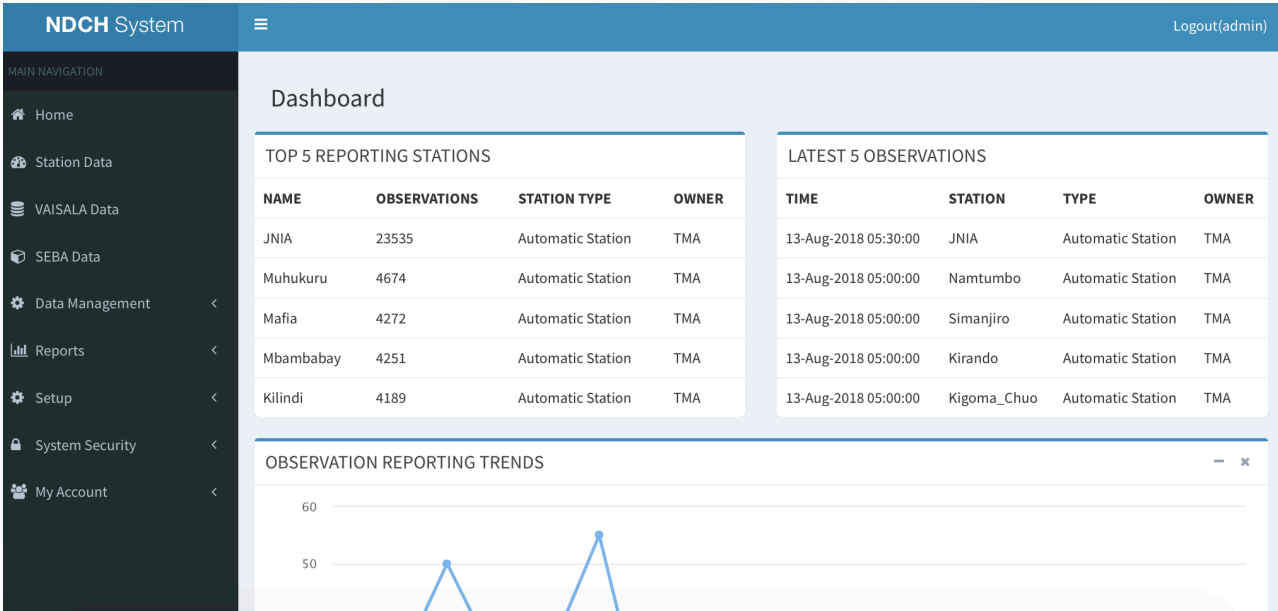
Please Login to start your session

Username

admin

Password

Login



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WMO initiatives for Data Quality and Availability

Tanzania Meteorological Authority is committed to improve international data availability and Quality through effective implementations and use of recommended tools such as WDQMS

TMA has established a dedicated Desk operational for Data Quality and Availability as an initiative to the establishment of the Regional WIGOS Centre.



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WMO initiatives for Data Quality and Availability

Training for staff of the Desk is underway and we expect more knowledge and skills to be acquired from this workshop to impact and trigger effectiveness of the Centre as expected.



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Thank you

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