



OVERVIEW OF METEO RWANDA OBSERVING NETWORK

ENTEBBE-KAMPALA

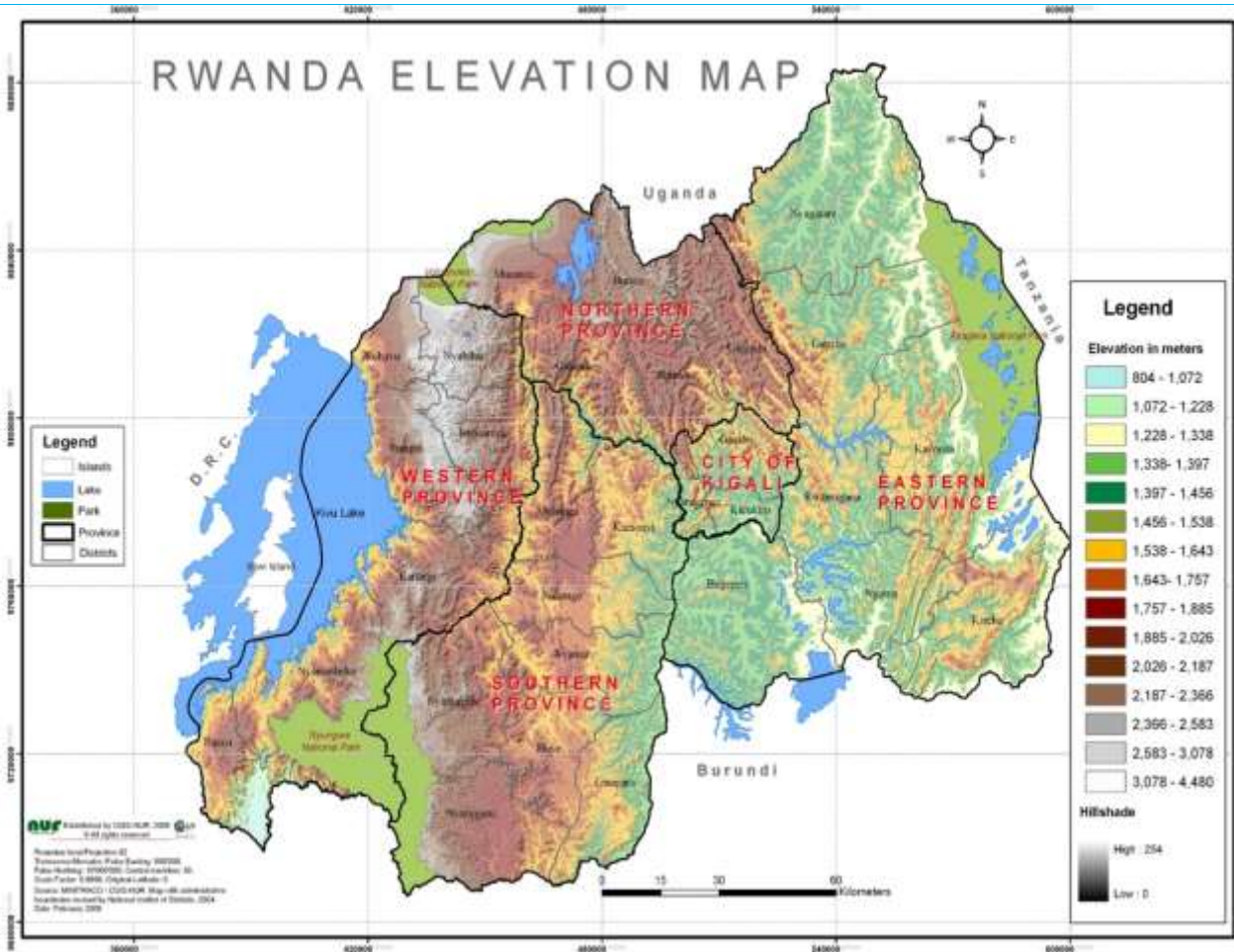
***By NIYITEGEKA Jean Marie
31 OCTOBER 2018***



OUTLINE

- ❑ **Background of Rwanda**
- ❑ **Current status of observing system in Rwanda**
- ❑ **Spatial distribution of stations**
- ❑ **Challenges**
- ❑ **Needs**

BACKGROUND OF RWANDA



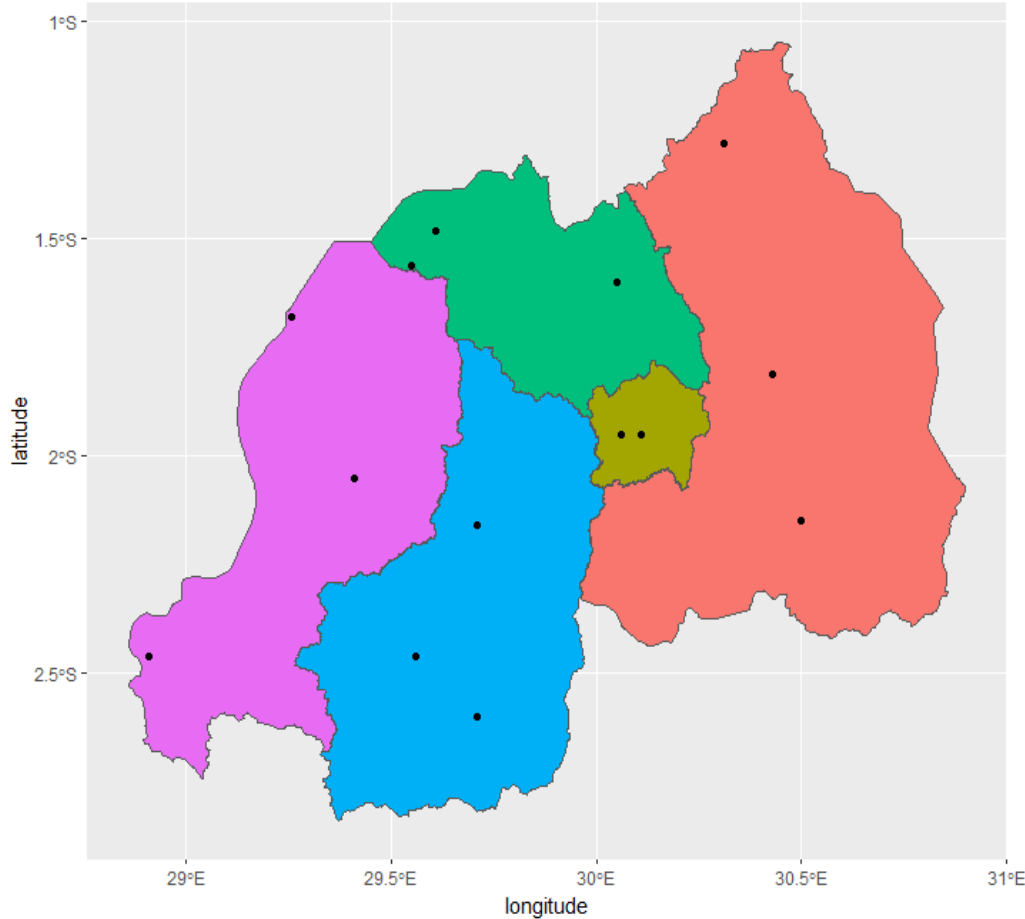
- Hilly, mountainous, landlocked with area of 26,338 km²
- Low lands east, central plateau,
- mountains west with high point of 4500m
- Temperate climate moderated by Mountain

Current status of observation systems:

	Description	Number of stations	Observing cycle
1	Surface synoptique stations	5 (One is down)	Hourly: 12 hours/day Only one report 24/24 hours
2	Agro-meteorological stations	9 (all operational)	Hourly: 12 hours/day
3	Climate stations	79 (all operational)	Dairy
4	Rainfall stations	71 (all operational)	Dairy
5	Automatic Weather stations	56	10 min
6	Automatic Rain Gauges	100	10 min
7	Weather Radar	1	6 min
8	Upper air station	None	
9	Satellite ground receivers	2	15 min
10	Climate change observatory station	1	

Spatial distribution of stations

Agro-Synoptic Stations

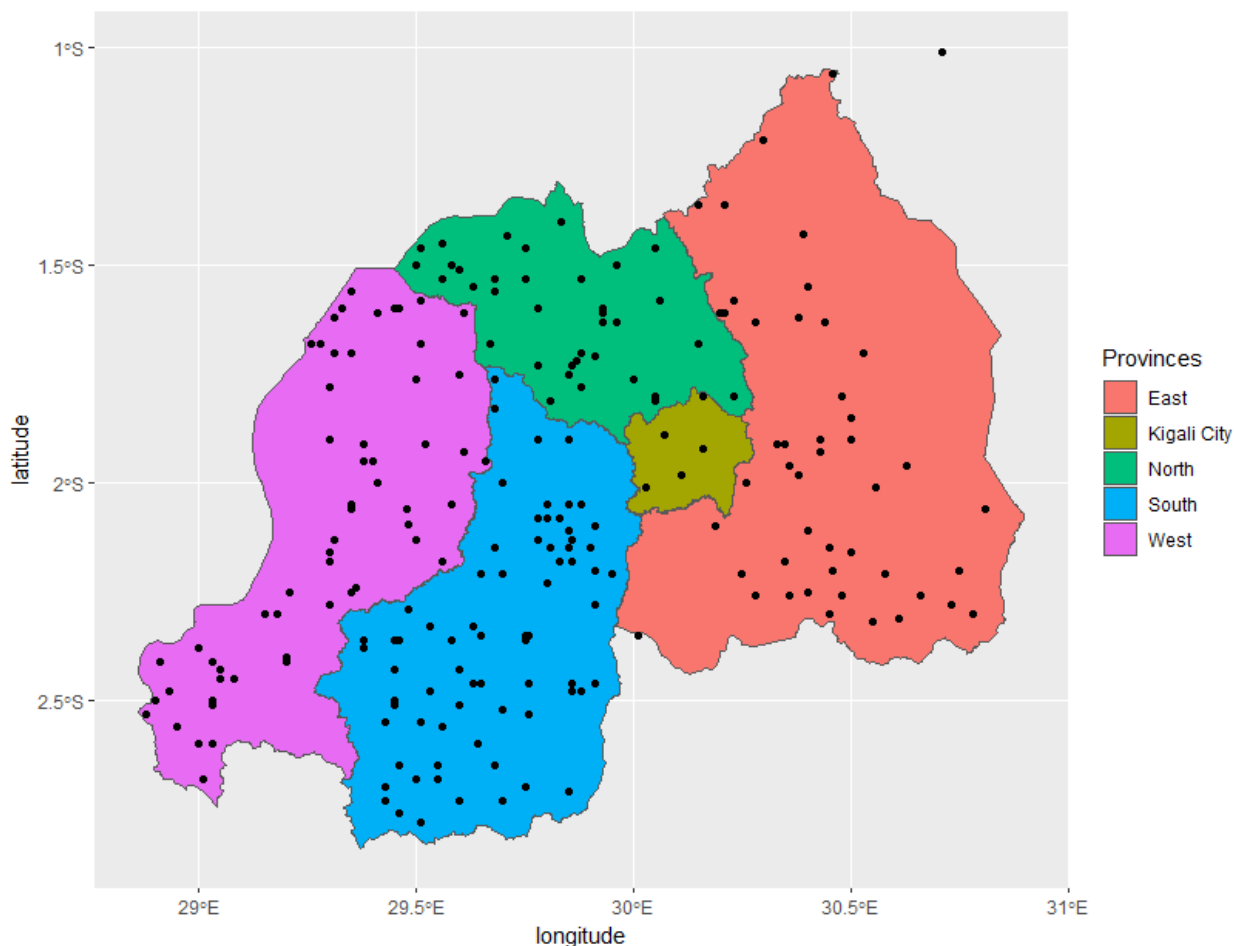


Surface and Agro-synoptic station

- Managed by Meteo Rwanda Staffs
- Parameters (pressure, temperature, rainfall humidity, Wind speed 2m, 10m Wind direction 2m, 10m sunshine radiation, soil moisture and surface evaporation)

Spatial distribution of stations

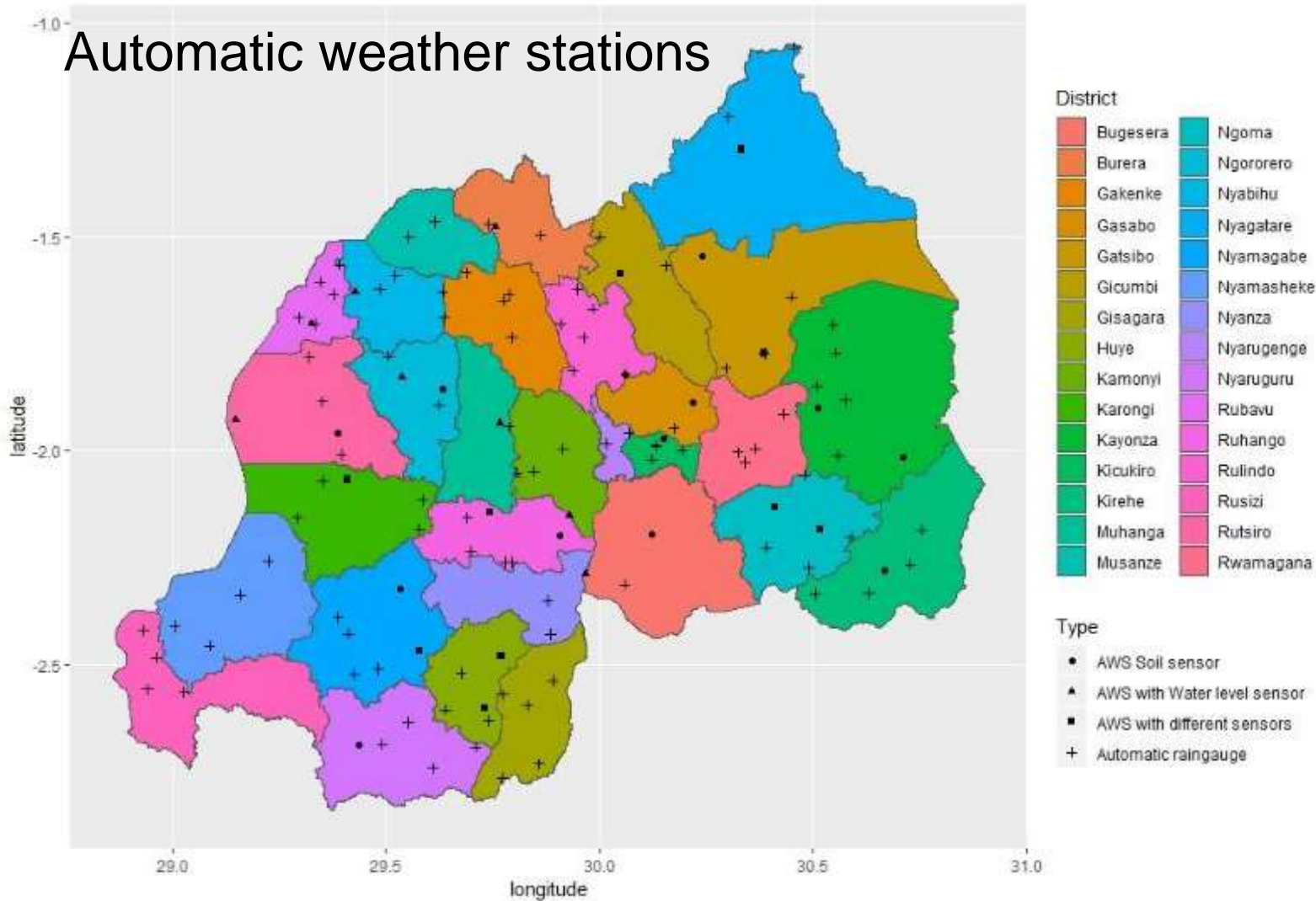
Conventional Raingauge and Climatic Stations



Climatic and rain gauge stations

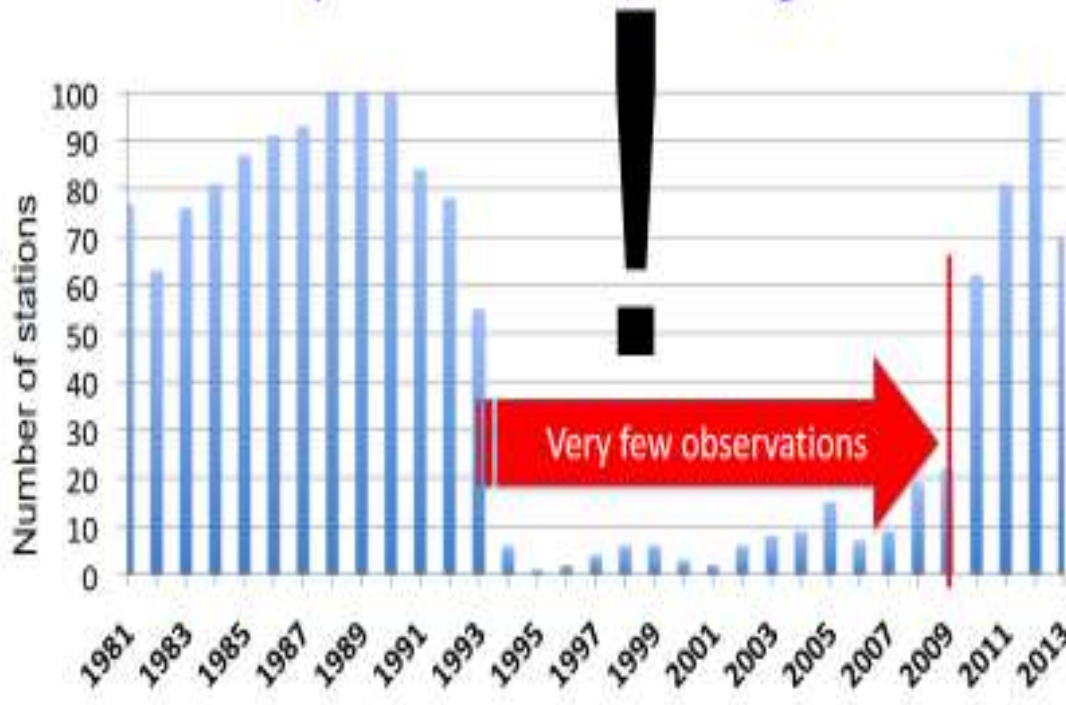
- Managed by Volunteers and inspected once in year
- Reporting daily
- Only rainfall and temperature

Spatial distribution of stations



BIG CHALLENGE

Situation analysis of available/existing national data



- There existed huge gaps in data collected from 1993 to 2010 as shown on chart.
- Meteo Rwanda was able to consolidate new climate datasets that blended satellite data and ground station data to a resolution of 4km in square.

<http://maproom.meteorwanda.gov.rw/maproom>

OTHER CHALLENGES

- Inefficient maintenance and calibration of stations
- No spare parts of AWS and Radar
- No storage and back up of radar data (very expensive)
- Thermometers are still using mercury
- Lack of upper air station
- Irregularity in observed data at stations managed by volunteers
- Most of automatic weather stations are installed after 2014 (short time range data available)
- GTS (few stations are reporting)

NEEDS

- Establish a center for Instrument Maintenance and Calibration
- Assistance to buy AWS and radar spare parts
- Need of replacing mercury thermometer
- Re-activate one synoptic station
- Establish data back up resources
- Data integration software
- Install upper air station
- Extend synoptic station observation capacity to 24 hours and increase number of station reporting in GTS
- Staff capacity building

Thank you