Survey of Existing Weather Observation Station Network in Tanzania and the Possibility to Automate and Densify it

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WIMEA-ICT
Improving Weather Information Management in East Africa

Research Partners

- Dar es Salaam Institute of Technology
- Makerere University
- University of Juba
- University of Bergen

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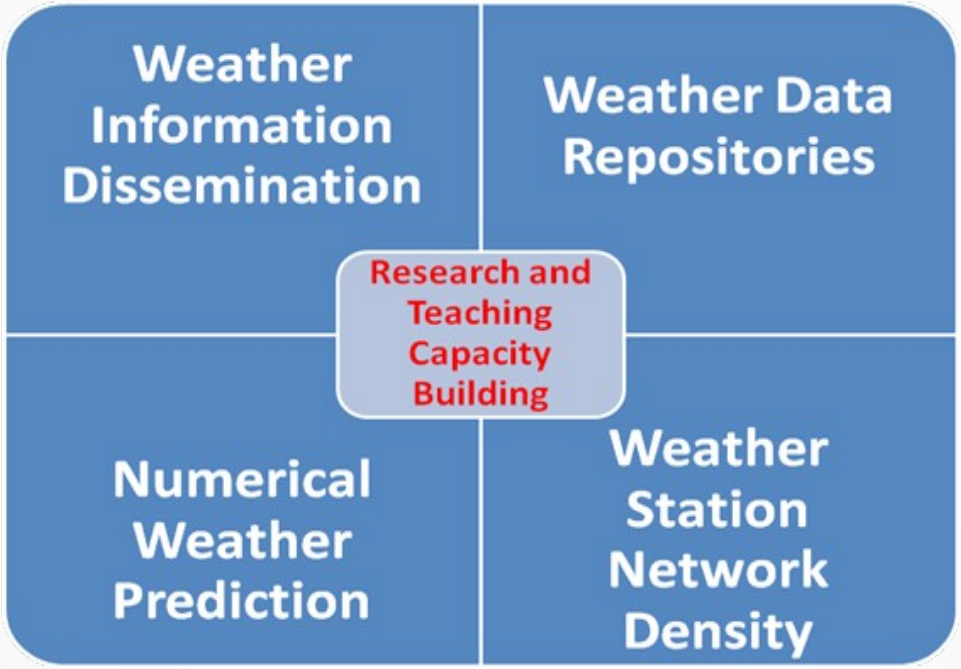
Key Stakeholders

- Tanzania Meteorology Agency, Tanzania
- Government Department of Meteorology, Uganda
- South Sudan Meteorology Service, South Sudan
- Farmer groups
- Fishing communities

Project Goals

- To improve accuracy and access to weather information by communities
- To deploy low-cost and low-power weather stations

Project Goals



Motivation

- Weather information is vital for decision making in various sectors such as agriculture, disaster management, aviation, fishing,energy, mining, construction, defense, water resources and health etc.

Why this Survey?

To assess the challenges of the existing weather stations

Findings

- Tanzania Meteorology Agency (TMA)?
- Weather Stations?

Weather Station	Manual	Automatic
Synoptic	28	15
Agromet	15	0
Rainfall	> 500	15
Upper Air	0	1
Radar	0	2
Satellite MSG	0	1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MOSHI
MASWA
KILIMANJARO
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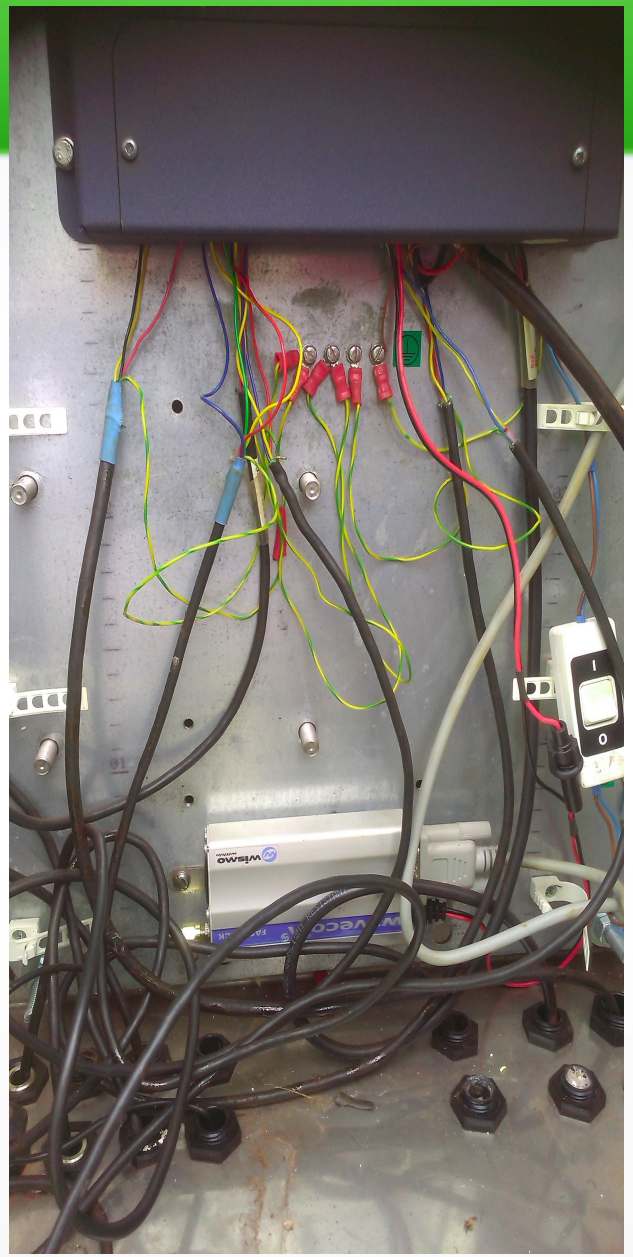
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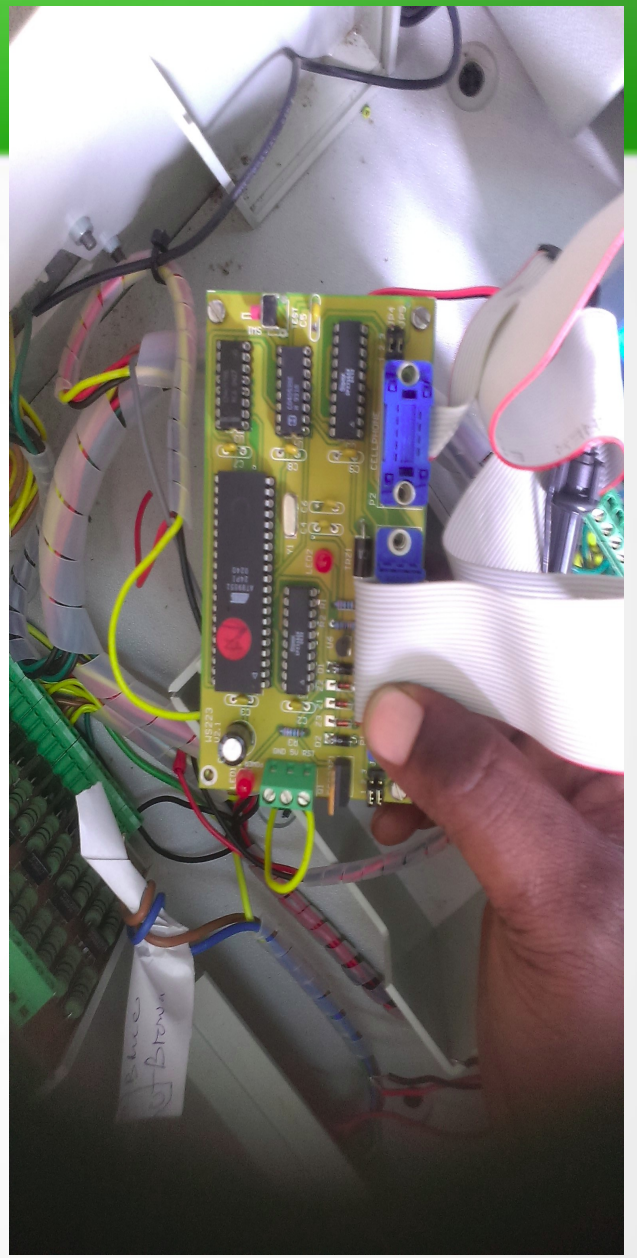

Findings

- Methods of weather predictions and weather observation currently being used in the East African region are outdated, timely dissemination of weather information is absent
- existing manual and automatic weather stations do not function.
- data transmission from the weather stations to collection centers is too slow and often unreliable
- manual data processing due to lack of computers, software and expertise

Findings

Findings

- Prohibitive cost of communication as well as maintenance and purchase of standard weather stations (10,000 - 50,000 USD per station)
- Available weather information is neither properly packaged nor readily accessible
- Insufficient number of meteorologists to operate.
- Lack of continuous professional / career development to cope with
- Emerging trends in weather prediction and analysis

Findings

Findings

What Next?

- Why and where to deploy low-cost and low-power stations?

  - regions which spatially not very dense

  - northern, western, southern and central zones

- What are the existing possibilities to reliable weather information?

  - GSM/GPRS coverage

  - National Fiber Optic Network (NICTBB)

  - Dedicated UHF/VHF frequencies

  - TV White Spaces

Thank You!