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# WIMEA-ICT: Improving **W**eather **I**nformation **M**anagement in **E**ast **A**frica for effective service provision through the application of suitable **ICTs**

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# Project consortium

Research partners:

- ❑ Makerere University, Uganda (project leader)
- ❑ Dar es Salaam Institute of Technology, Tanzania
- ❑ University of Juba, South Sudan
- ❑ University of Bergen, Norway



Key stakeholders:

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



# 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.
- ❑ The indigenous and outdated methods of weather predictions currently being used in the East African region are no longer reliable due to the erratic behavior in weather patterns.
- ❑ This has resulted into challenges such as:
  - ❑ low agricultural productivity,
  - ❑ deaths due to weather related diseases
  - ❑ delayed delivery times in the construction and energy industry
  - ❑ weather-related accidents on the lakes especially Lake Victoria where about 3000 people die every year, mudslides and floods leading to loss of lives, property, infrastructure and displacement of people



## Some identified shortcomings

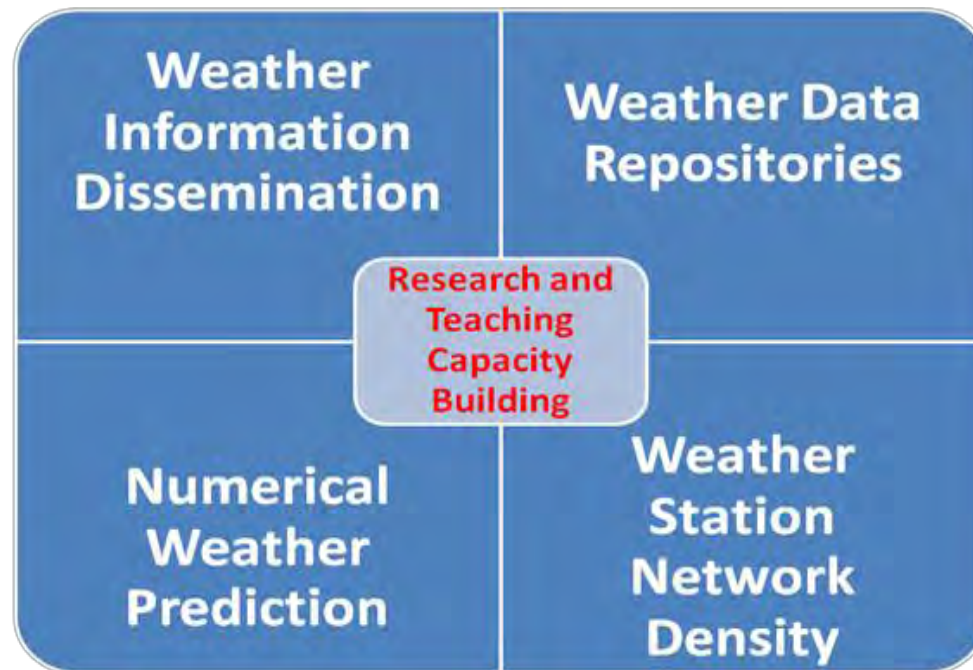
lack of timely meteorological observations and numerical predictions

- ❑ existing manual and automatic weather stations do not function
- ❑ data transmission from the weather stations to collection centers is too slow and often unreliable
- ❑ prohibitive cost of communication as well as maintenance and purchase of standard weather stations (10,000 - 50,000 USD per station)
- ❑ manual data processing due to lack of computers, software and expertise
- ❑ available weather information is neither properly packaged nor readily accessible
- ❑ insufficient number of meteorologists to operate the NMSs
- ❑ lack of continuous professional / career development to cope with emerging trends in weather prediction and analysis
- ❑ existing curricula at Makerere University, University of Juba and Dar es Salaam Institute of Technology is not responsive to the current trends in weather info management



## Project goals

this project aims to improve the **accuracy of and access to weather information** by the communities in the East African region through suitable ICTs for increased **productivity** (in the agricultural, energy, water resources and construction sectors) and **safety** (in the aviation, disaster management, fishing, health, mining, and defense sectors). The proposed project has five components



# Main activities

- ❑ Establishing operational Numerical Weather Prediction (NWP) models in the three countries based on WRF
- ❑ Improving the density of the weather station network in the region
  - ❑ development of a low-cost automatic weather station with data transmission to a central server (max. 2000 USD/unit)
  - ❑ deployment of 70 units in the 3 countries
- ❑ digitizing manual weather records to create reliable data repositories suitable for research purposes
- ❑ Improving/automating decentralized weather information dissemination systems for different stakeholder groups
- ❑ capacity building by research and teaching:
  - ❑ 5 PhD projects
  - ❑ 20 MSc scholarships
  - ❑ BSc. MSc & PhD curriculum revision
  - ❑ training of technical personal (instrumentation and modelling)

