

The current status, functions, challenges and needs of South Sudan Meteorological Department (SSMD)

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Background

- The present SSMD was formed in July 2011 when South Sudan became independent from Sudan.
- It's primary objective is to provide aeronautical information for air navigation and contributes towards the safety and regularity of air flights.
- It is a governmental institution within South Sudan Civil Aviation Authority which falls under the Ministry of Transport, Roads & Bridges.
- SSMD is located at the 3rd floor of control Tower building in Juba Airport .
- Submitted it's application (Instrument of Accession to the WMO Convention) for membership of World Meteorological Organization (WMO) on the 16th of August 2012, and was officially admitted to the WMO community on the 14th December 2012.

Mission and vision of SSMD:

- **VISION**

To become an efficient national Meteorological Service that meets the national needs and International obligations in providing weather & climate information for socio-economic development of the Country and to save life and property from extreme weather events.

- **MISSION**

The mission of SSMD is provision of high quality and reliable timely Meteorological information and early warning to help in mitigation of Disaster Risk reduction.

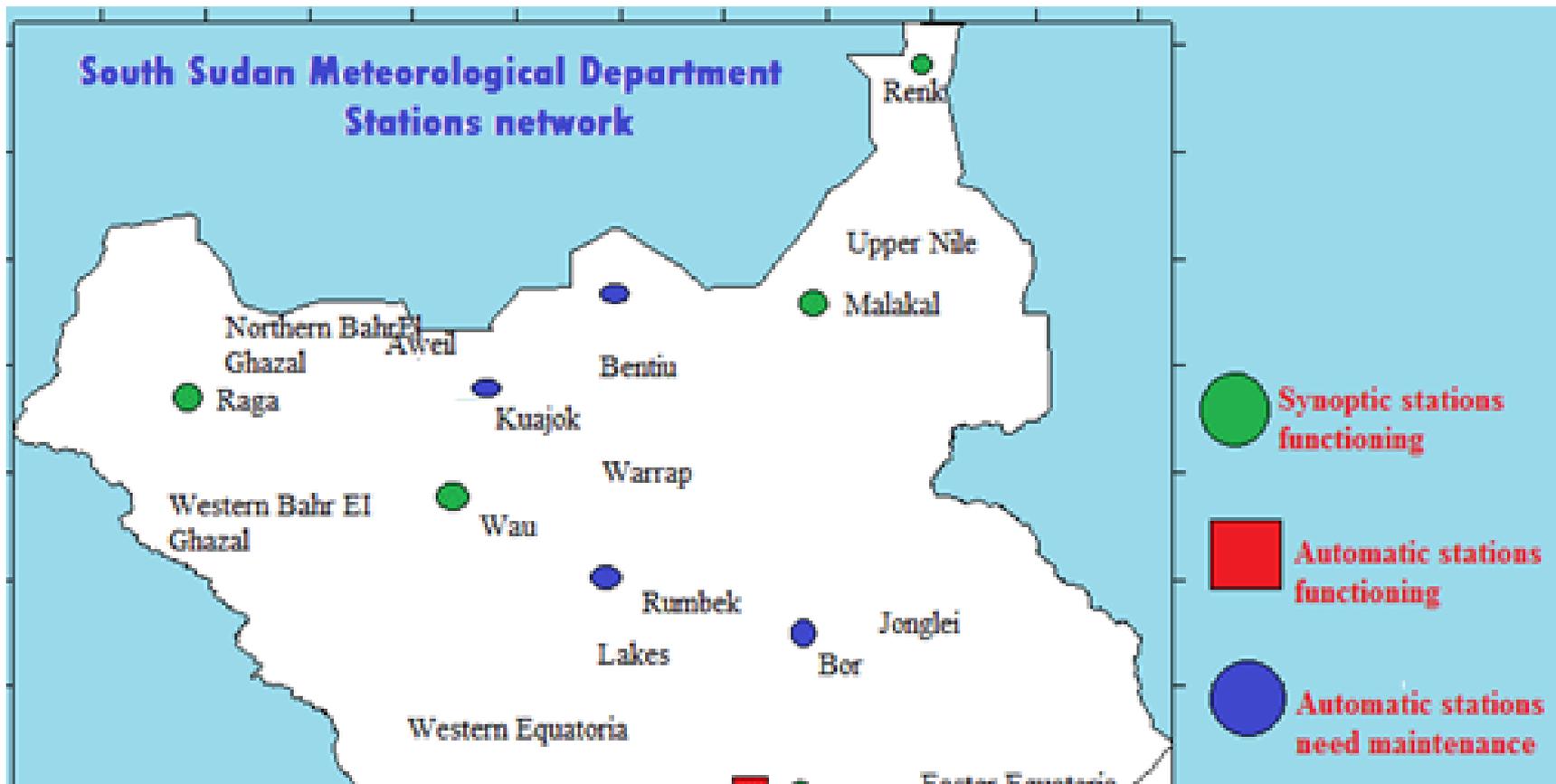
- **Core Values:**

Integrity, quality of services, professionalism, team work will be the core values of SSMS.



Picture.2. SSMD on the 2nd floor of Control Tower Building

South Sudan Meteorological Department Stations network



1. The present status of Meteorological Department (MD)

- Currently there are 5 functional Synoptic Stations: Malakal, Juba, Renk, Raja & Wau
- In the past there were 7 stations in Southern Sudan.
- 2 stations(Benteiu & Rumbek) were closed during the civil war in 1984.

The Automatic Weather Stations.

- There were 9 Automatic Weather stations installed by Food and Agriculture Organization (FAO) in 2009 in some states.
- 2 functioning and 7 AWS are unfunctional.

The Aeronautical meteorological station at Juba International Airport

- Operates 12 hrs only as Airports do not work 24hrs.
- 1 shift in a day (m – a : 0400 – 1500 Z
- 1 Forecaster in the shift
- 2 Met Observer in the shift
- 1 technicians in the shift

Data received from Meteorological Stations in States are:

- Wind Direction & Speed
 - Air Temperature,(Max & Min)
 - Dew Point
 - Rainfall
 - Amount of Clouds
 - QNH/QFE etc.....

Forecasting tools at Juba met office



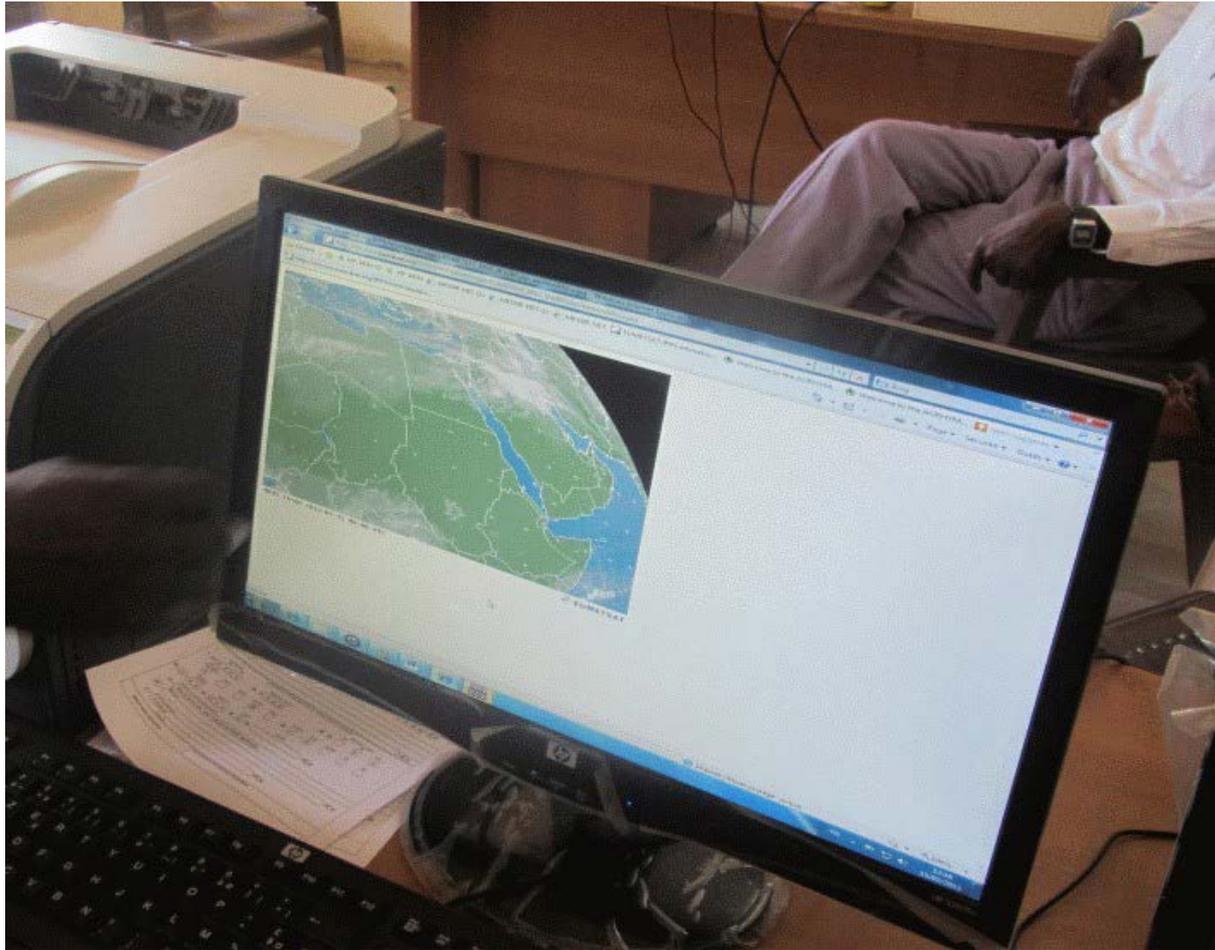
Picture.3. *Juba meteorological office - duty forecaster and observer desks*

Forecasting tools at Juba met office



Picture. 4. *MESSIR-SADIS* system - Juba met office

Forecasting tools at Juba met office



Picture 5. Satellite pictures from the EUMETSAT website - Juba Met Office

2. Functions (Responsibilities) of SSMD.

- Observation of wind direction & speed, temperature, air pressure, precipitation, the Runway Visual Range (RVR) in the five Met Stations.
- Issuance of ½ hrly Aerodrome Routine Met. Report (METAR) for landing & take off of Domestic & international flights.
- Aerodrome Special Met. Report (SPECI)
- Interpretation of satellite images and production of Terminal Aerodrome Forecast (TAFs) with validity of 12 and 30 hours.
- Issuance of folders containing **Low & upper-levels wind charts, significant weather charts** to airlines operators..
- Issuance of warnings (SIGMETS) for bad weather.
- Weather briefing for pilots & airline personnel.
- Provision of Seasonal rainfall forecasts to Ministries of Agriculture, Water Resources, health, Information, Child & Social well Fairs, Environment, transport, Humanitarian & Disaster management.
- Issuance of Climate Data and products to users & UN Organizations (UNMISS, WFP etc...) on request.

3. Challenges

There are huge challenges facing SSMD but the major ones are:

- Lack of full operational National Meteorological Service.
- Lack of offices for staff accommodation & Forecast Centre facility.
- Very few Meteorological Instruments available some of which are not properly functioning.
- Lack of maintenance for the available instruments.
- No adequate tools for weather forecasting such as: Radars, Satellite Ground Station, NWP Models & software, Computers, Weather charts
- Few forecasters and limited no of qualified observers.
- Lack of training in data management & basic computer use for staff
- No telecommunication network between Juba and Met offices in the states for transmitting observations & data to Juba forecast Unit
- Lack of Aeronautical Fixed telecommunication Network System (AFTN) for transmitting weather forecasting (TAF &Signets) and actual weather (METAR etc) to regional distribution centers in Nairobi, Cairo etc...
- Lack of super computers & softwares for conducting research for national seasonal rainfall forecasts.

Challenges cont....

- No references manuals (e.g. Beauford manual for visibility symbols or Clouds Atlas etc...) to follow when taking weather observations.
- Lack of Vehicles for transporting staff or visitors to & from work.
- SSMD is not autonomous department, thus has no funds or budget of it's own but depends on CAA.

4. Short- term & medium term (2014- 2015) needs..

(ii) Short –Term Needs

To enable the SSMD carry out the basic services to the end users,there is need for:

- Hire offices -block for the Director, administrative, senior and technical staff.
- Creation of favorable working environment for the Met offices
- Purchase and install meteorological instruments & equipments for observation & forecasting.
- Provision & Installation of SADIS equipment and satellite receiving station
- Recruitment and training of new forecasters & technicians.
- Establish network of meteorological stations to satisfy the needs of various national development plans.
- Rehabilitate Juba meteorological station at Juba International Airport to improve services delivery.
- Provision of 2 vehicles for transporting the technical staff and any mission to SSMD.

(ii) **Medium - long term (2015- 2019) needs**

- Implementation of WMO 5 Year Strategic Plan for the development of SSMS.
- Hire a consultant to advise and assist SSMD in implementing the 5 Years Strategic Plan.
- . Establish a network of meteorological stations to cover many parts of the country and satisfy the data requirements of stakeholders.
- Training of SSMD staff (Administrative & technical staff)
- Establishment of data processing and archiving systems
- Improve aeronautical meteorological forecasting & early warning systems and develop agro-meteorological services for farmers

Organizational Structure for SSMD

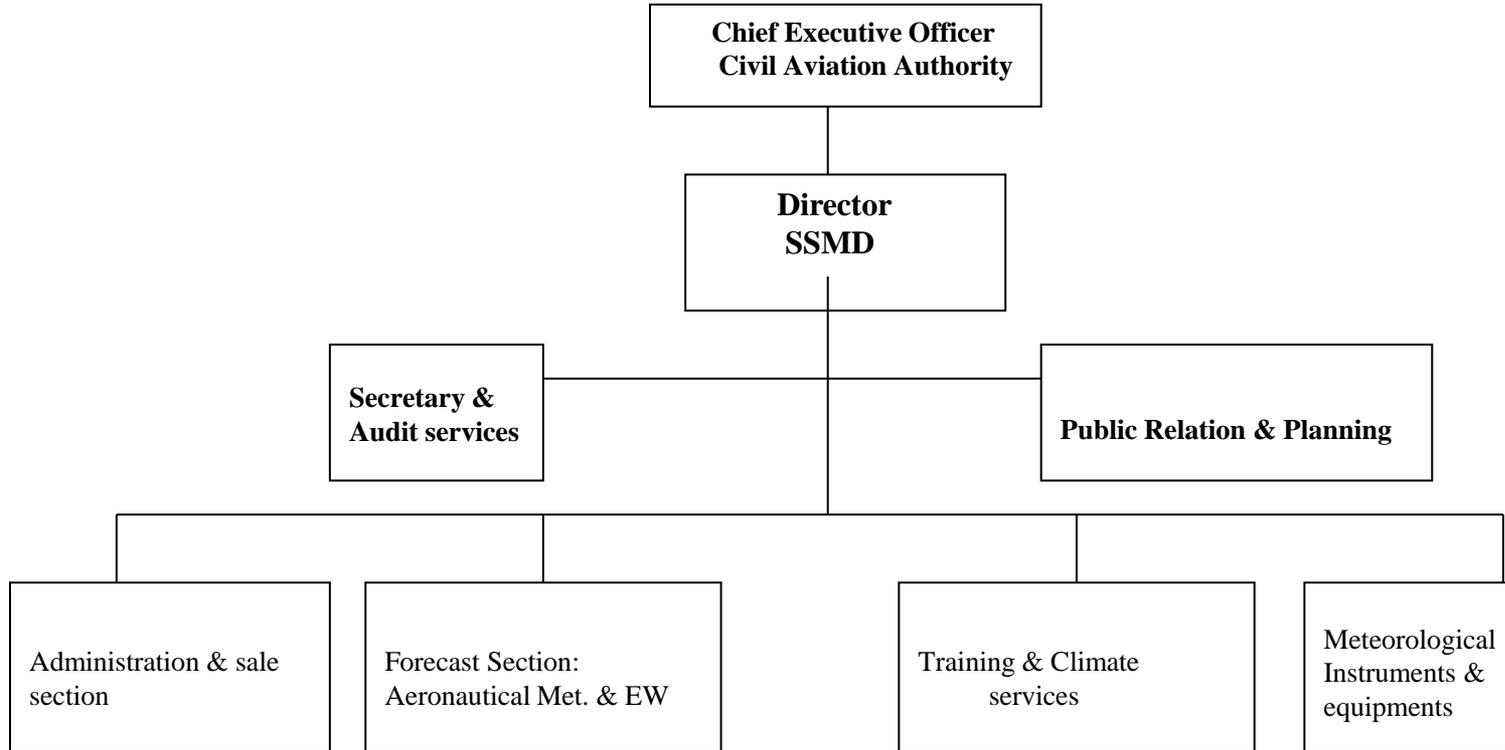




Fig.5. View on runway of Juba airport



Fig.7. Aircraft on runway of Juba airport

Acknowledgment

I would like to take this opportunity to thank **Mr. Workneh Degefu**, President of the Ethiopian Meteorological Society, for inviting me to this important workshop and also for designing a WMO 5years strategic plan in 2013, aimed at helping South Sudan establish it's national Meteorological/ Hydrological service.

My thanks also goes to NASA for facilitating my participation at the Workshop. Iam also grateful to Ethiopian Meteorological Agency for their warm hospitality for the participants.

Thank You