

# **REPUBLIC OF SOUTH SUDAN**

**By**

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# Presentation Outline

1. Brief introduction Republic of South Sudan(RSS) and the South Sudan Meteorological Department (SSMD)
2. Current observing capabilities
  - i.Operational stations (both NMHS and other national organizations)
  - ii. Known issues and major challenges
3. Plans for future changes to the weather observations network
4. Remarks

# 1. Introduction

## 1.1. About South Sudan

- The Republic of South Sudan is a land locked country located in the Greater Horn of Africa.
- The country earned its independence on the 9th July 2011 following the CPA in 2005 and a peaceful secession from Sudan through referendum.
- It covers an area of 645,000 square kilometres with an estimated population of 12.26 million people based on the 2008 Sudan National Census and an annual population growth rate of 3.5%.
- South Sudan has 32 states (from 10 former states) and one administrative area in *Abyei*.
- Each state is divided into counties, *payams*, and *bomas* with boma being the lowest administrative unit of the country

## 1.2 Physical context of South Sudan

South Sudan is bordered by Sudan in the north, Ethiopia from the east, Kenya, Uganda and the Democratic Republic of the Congo from the south and the Central African Republic from the west.

Its topography is symbolized by Imatong Mountains located in southeast of the country;

in former Eastern Equatoria state. **Mountain Kinyeti** is the highest mountain in South Sudan with a height of **3,187 metres**. It has an **equatorial** type of **climate** with dense forests which supports **diversity of wildlife**

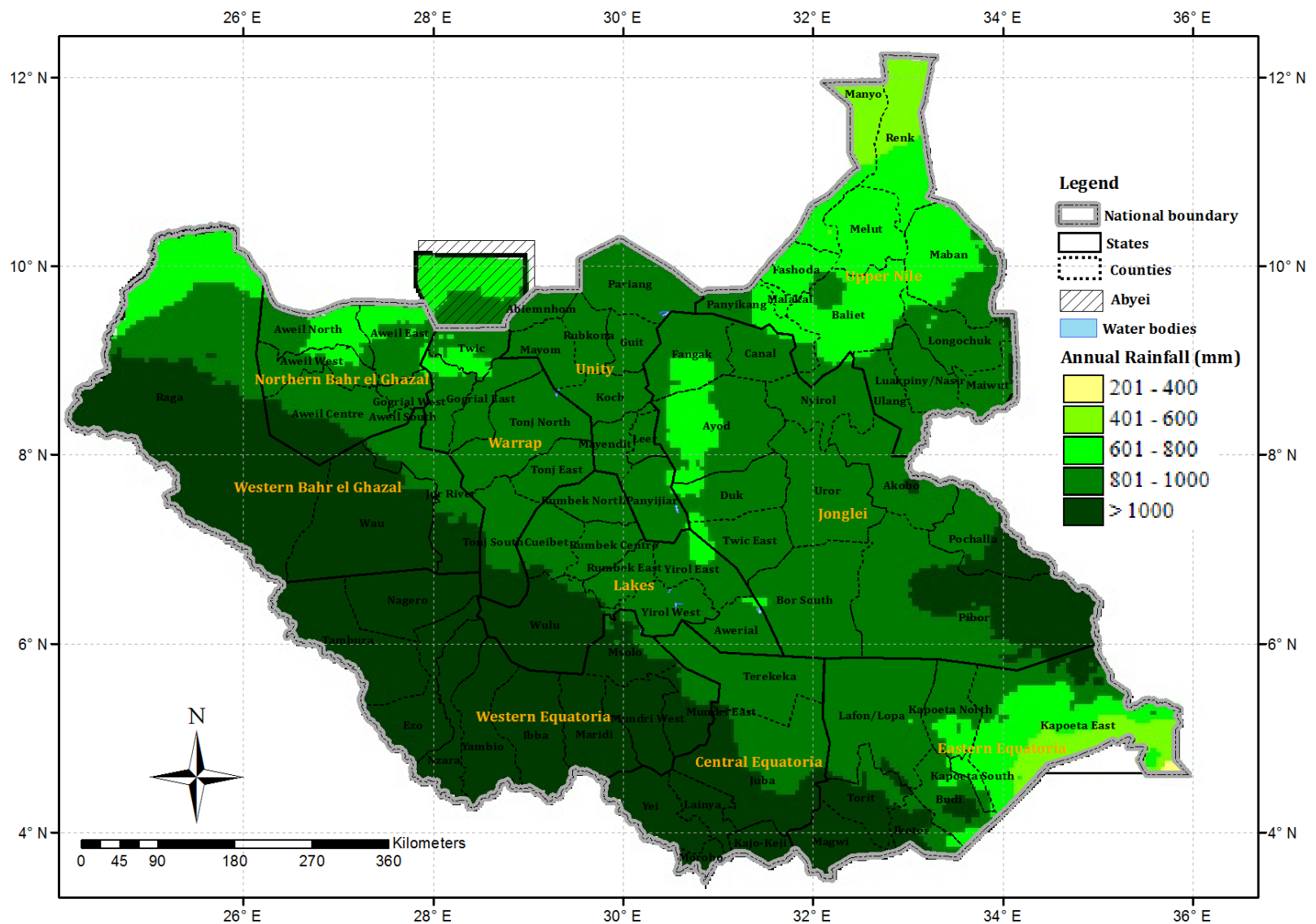
Fig.1 Map of South Sudan



## 1.4. Climate including extreme events

- South Sudan has a **humid equatorial climate** characterized by: Annual rainfall ranging from **200 - 800 mm** in the northern and central states to more than **1,200 mm** in the forest zone in **south to western Equatoria and the Equatorial highlands**.
- The main rainy season is from **April to December** and results in seasonal river flooding. Mean average temperatures vary between 26°C and 32°C.
- South Sudan is prone to a number of natural hazards like **droughts and dry spells floods, human and livestock epidemics, environmental degradation** and pollution and conflicts among others.
- **Floods** are caused by enhanced **rainfall** within the country or from the neighbouring countries resulting in flash floods especially along the river basins and urban areas.
- **Recurrent floods** often occur when the Nile River and its tributaries overflow particularly during the months of July, August and September.

**Fig.2. Mean Annual rainfall for South Sudan**



### **1.3. Introduction of SSMD**

- Prior to the independence of South Sudan , meteorological services were being managed in Khartoum for the entire country
- SSMD was formed as a small service under the department of Civil Aviation in the former ministry of Transport, Roads and Bridges on July 1, 2011
- *The aim was to provide meteorological information and services for the safety, regularity and efficiency of air navigation, helps in mitigation of disaster risk reduction and contributes towards socio- economic development of the country*
- *SSMD became a member of the World Meteorological organisation (WMO) on 14December 2012*
- It was upgraded to department of Meteorology in 2013 within South Sudan Civil Aviation Authority(SSCAA) under the Ministry of Transport
- 5 weather observation network stations in Juba, Wau, Raja, Malakal, and Renk. 2 stations not functional due to eruption of political crises in 2013 and in 2016

#### **1.3.1. Mandate, Infrastructures and Staff**

- SSMD is a government institution designated authority for provision of meteorological services in the country
- Lacks sufficient infrastructure
- limited no of employees





## **2.0 Current observing capabilities**

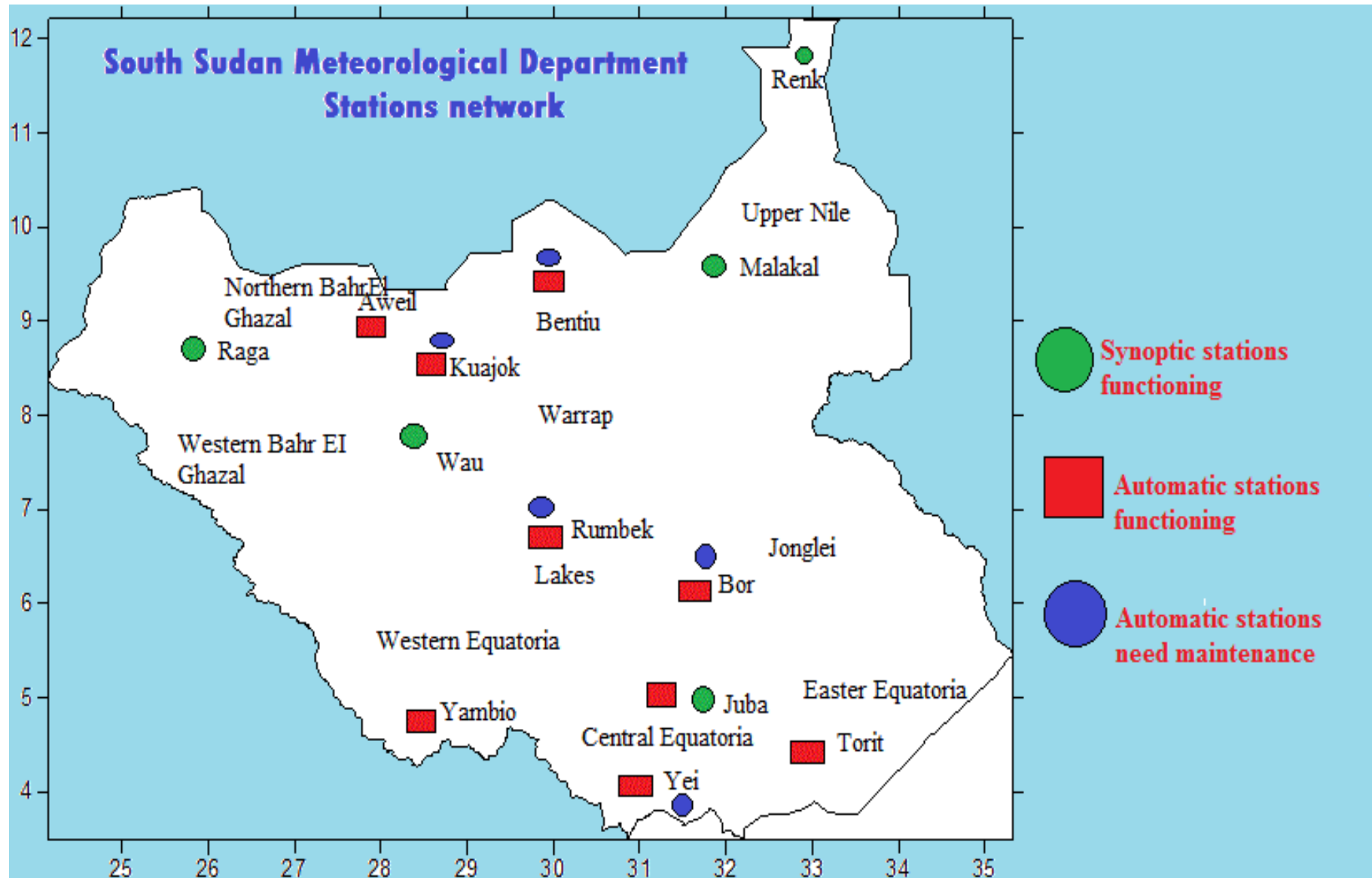
### **2.1 SSMD Current observing capabilities**

- Has 3 operational weather stations. Had 7 observatory stations in the past but 2 closed in 1980s during the civil war and 2 became unoperational due to political crisis of 2013 and 2016
- Few and old manual instruments available and many are missing in these stations
- The instrument enclosures need fencing & rehabilitation.
- 9 AWS installed by FAO in 6 states are not operational due to poor maintenance and communication challenges as they use mobile network system.
- One AWS provided by UNMISS was installed in Juba station recently
- PPUMA 2015 installed in 2016 is operational

## 2.1 Current SSMD observing capabilities cont.....

- Insufficient data communication facilities. Synoptic reports from stations are transmitted by personal mobile phones to Juba Meteorological Office.
- No data processing due to lack of software (CLIMSOFT) and No maintenance of the available Met instruments

# Map.1. Distribution of 5 Synoptic and 9 Automatic weather stations in South Sudan



**fig.1 Instrument enclosure  
with Screen in bad shape**



**fig.2 Typical met station  
observatory**



## 2.1.2. National government ministries

- Ministry of water resources and Irrigation
  - Had 150 hydrological stations in the past. Currently 5 are operational while 145 destroyed during the civil war .
- Ministry of Agriculture and food security
  - has field offices, database and man power to take rainfall observations
- Ministry of Environment
  - Has a national focal point for UNFCCC
  - Depending on environmental & meteorological websites for information needed for their activities
  - Expressed interest in partnerships with stakeholders interested in the issue of Climate Change in the country



## 3.2 Known gaps and major challenges

### 3.2.1 Known (existing) gaps in SSMD

- Lack of appropriate institutional arrangements for the establishment of NMHS, hence no formal budgetary allocations are made and administrative support from the Civil Aviation Authority, where SSMD is currently housed, is minimal
- Poor perception of the importance of meteorological services at many levels
- Lack of sufficient observatory network stations for real time data collection, processing and dissemination systems are lacking
- Shortage of trained staff and lack of recruitment due to austerity measures

### 2.2.2 Major challenges

- **Legislative Matters**

- SSMD has no national legal instruments to define its mission and mandate.  
This will well-defined the Department's responsibilities and its contribution towards socio-economic development ensure adequate resources
- SSMD lacks Meteorological Act" and Law or other official governmental instrument from Parliament for the establishment of NMHS;

## **CHALLENGES Cont....**

### **- Operational challenges**

- **5-year strategic plan (2014 – 2019 ) developed by WMO consultant in 2013 in line with GoSS Strategic Plan for development of SSMD to get a financier not implemented.**
- **The current supporting project like WISER focus :**
  - **Human, institutional and technical capacity building of the South Sudan Meteorological Department**
  - **Institutional capacity building, production and delivery of coproduction products of meteorological information and services and communication system between SSMD and the stakeholders in the country**



### **3. Plans for future changes to the weather observations network**

**Plans identified in the strategy as future(2014-2019) and Finnish Meteorological Institute (FMI) support project; changes to weather observations network include:**

- Establishment of institutional arrangement to address the meteorological needs (national & international)
- Enhance observations networks, data communications and management systems (Synoptic & rainfall stations)
- Enhance product development, services and dissemination mechanisms for relevant sectors like DRM, Agric, Health, WR&I etc...
- Institutional capacity building and human resource development from 34 – 300 trained staff
- MWR&I planned to establish 14 hydrological stations in the near future, under the WMO IGAD-HYCOS Project

## 4. Remarks

- Generating of climate data requires functioning, well-maintained and well-distributed physical infrastructure (such as weather stations and rainfall gauges), as well as capacities within the NMS for analyzing climate data and using it to model future conditions.
- As a new member to the WMO community, South Sudan seeks more support from the well developed partner NMHSs to enable it fulfil its national needs and international obligations
- South Sudan also requests WMO to hire a consultant to update and put a budget for the 5 year unimplemented strategic plan design by WMO consultant in 2013
- This would assist in Promoting Adaptation to Climate Change by Reducing Weather and Climate-Related Losses through Improved meteorological Services in South Sudan

*Thank you for listening, Asante Sana*

