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## June to September 2017 Climate Outlook for South Sudan – FAO's Key Messages<sup>1</sup>

Based on 46<sup>th</sup> Greater Horn of Africa Climate Outlook Forum (GHACOF 46)

Khartoum, Sudan, 15-16 May 2017

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### Introduction:

The Forty Sixth Greater Horn of Africa Climate Outlook Forum (GHACOF 46) was convened from 15 to 16 May 2017 at Corinthia Hotel, Khartoum, Sudan by the IGAD Climate Prediction and Applications Centre (ICPAC). The Forum was sponsored by UNDP and USAID and hosted by the Government of Sudan, to formulate a consensus on regional climate outlook for the June and September 2017 rainfall season over the Greater Horn of Africa region (GHA). The workshop was attended by participants from IGAD member states (Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Sudan, Tanzania and Uganda), scientists from regional climate centres and climate information users from agriculture and food security, disaster risk sectors and media.

### Methodology:

During the two day workshop, scientists and climate experts examined regionally downscaled rainfall forecasts from seven Global Centre Models, the prevailing and predicted sea surface temperatures (SSTs) over the Pacific, Indian and Atlantic Oceans as well as other global, regional and local climate factors that affect the GHA rainfall during the season. These factors were assessed using dynamical and statistical models as well as expert interpretation. Important inputs were obtained from National Climate Scientists who participated in the pre-Climate Outlook Forum 46 capacity building workshop organized by ICPAC, USGS and the Met Office, UK, at ICPAC from 8 to 13 May 2017. Additional technical guidance and valuable forecast information was drawn from a wide range of sources including the World Meteorological Organization's Global Producing Centres of Long-Range Forecasts (WMO GPC-LRFs); US Geological Survey; the SCIPEA model interpretation hub and the UK Met Office; and the National Meteorological and Hydrological Services.

The forecasting capability allows for prediction of departures from mean conditions and the establishment of probability distributions that indicate the likelihood of above-, near-, or below-normal rainfall patterns and areas with similar outlook are grouped into zones I, II, III, and IV in Figures 1 and 2 below.

The potential implications of the climate outlook on agriculture and food security, livestock, water resources, disaster risk management for each forecast zone and mitigation strategies were discussed and developed by participants for their respective countries and sectors. The rainfall and temperature outlooks for June to September 2017 for various zones within the GHA region are given in Figures 1 and 2 respectively.

### Consensus Climate Outlook for South Sudan (June to September 2017 rainfall season):

Generally, the June to September 2017 rainfall performance over many parts of South Sudan is predicted to be near normal. However, some areas in the north south-western part of South Sudan are forecast to receive above-normal rainfall during the June to September 2017 period.

- Tambura, Nagero, Ezo, Yambio, Nzara, Ibba, Raga, western parts of Wau and south-western parts of Maridi are forecast to receive above-normal to normal rainfall during the June to September 2017 rainfall period (Figure 1, Zone II).

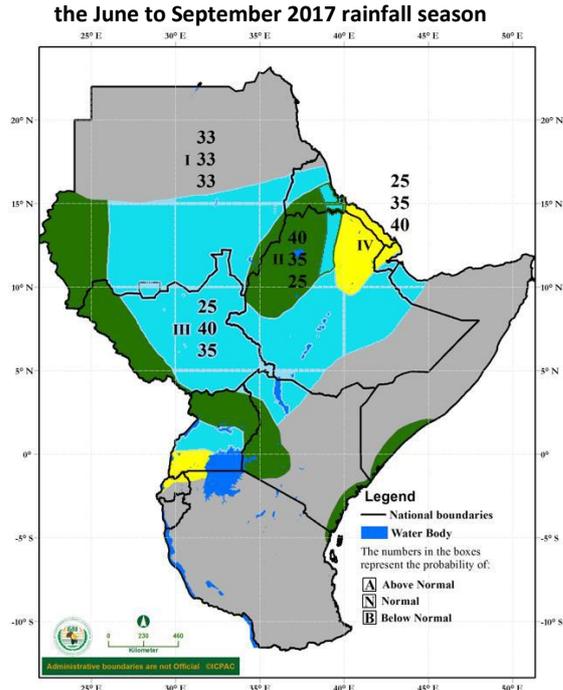
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<sup>1</sup> Produced by the SAFaNIS Team with financial support from the EU, DFADT, DFID and OFDA.

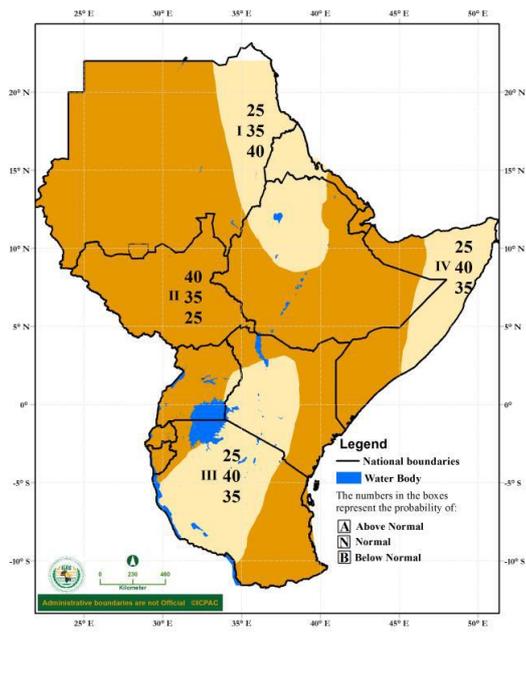
- The remaining parts of South Sudan have a high likelihood of receiving near-normal to below-normal rainfall during the June to September 2017 period (Figure 1, Zone III).
- South Sudan will likely experience above-normal to near-normal mean temperatures during the June to September 2017 period (Figure 2, Zone II).

**Note:** Although the outlook is relevant for the June to September 2017 period and for relatively large areas, there is possibility for local and month-to-month variations to occur as the season progresses. It is possible that dry spells might occur in areas forecast with above normal rainfall, and flash floods may occur in areas forecast with normal to below normal rainfall performance. Updates will be provided by the South Sudan Meteorological Department.

**Fig 1: Greater Horn of Africa Consensus Rainfall Outlook for the June to September 2017 rainfall season**



**Fig 2: Greater Horn of Africa Consensus Mean Temperature Outlook for June to September 2017 rainfall season**



**Zone I:** Usually dry during March to May  
**Zone II:** Increased likelihood of above normal rainfall  
**Zone III:** Increased likelihood of below normal to near normal rainfall  
**Zone IV:** Increased likelihood of above normal to near normal rainfall

**Zone I:** Increased likelihood of below normal mean temp  
**Zone II:** Increased likelihood of above-normal to near-normal mean temp.  
**Zone III:** Increased likelihood of normal to below mean temp  
**Zone IV:** Increased likelihood of near normal mean temp

**Note:**

The numbers for each zone indicate the probabilities of rainfall and mean temperature in each of the three categories, above-, near-, and below-normal. The top number indicates the probability of rainfall and mean temperature occurring in the above-normal category; the middle number is for near-normal and the bottom number for the below-normal category. For example, in zone III, Figure 1, there is 35% probability of rainfall occurring in the near-normal category; and 25% probability of rainfall occurring in the above-normal category. In zone I, Figure 2, there is 40% probability of mean temperature occurring in the above-normal category; 35% probability of mean temperature occurring in the near-normal category; and 25% probability of mean temperature occurring in the below-normal category. The boundaries between zones should be considered as transition areas.

**Agriculture and food security sector implications of June to September 2017 rainfall outlook:**

**a) Positive implications of above-normal June to September 2017 rainfall outlook (North South-Western areas):**

- The above-normal to normal rainfall forecast is likely to improve production of staple crops and pasture for livestock in areas where security conditions permit access to farming.

- The increased water discharge to the Nile and its tributaries is likely to increase fish volumes and present an opportunity for fishing in and along the Nile Basin, thus improving household protein consumption.

b) Negative implications of above-normal June to September 2017 rainfall outlook (North South-Western areas):

- Although above normal rainfall would be favorable for crop production in highland areas, continued heavy rains over these areas also increases the risk of flooding in lowlands (especially in the western flood plain areas) causing stunting of crops due to waterlogging. Farmers may also have difficulty of weeding their crops.
- Warmer than average temperatures and enhanced rainfall forecast in most parts of Western Equatoria and Raga is likely to lead to increased incidences of fungal crop diseases and pest proliferation and infestation, thus affecting crop productivity. This may also include infestation by African Army Worm (AAW) which is currently ravaging crops in the neighboring countries and has already found its way into South Sudan's southern parts.
- Physical access to remote areas and markets will be constrained by impassable feeder roads due to muddy conditions. This will lead to an increase in the cost of transportation and result in higher food prices in the local markets.

c) Implications of near-normal June to September 2017 rainfall outlook (rest of South Sudan):

- The normal rainfall amount forecast over most of South Sudan during the June to September 2017 period is likely to promote pasture growth as well as recharge of water *hafirs* and surface watering points in pastoral and agro-pastoral areas. This will further improve livestock body condition and milk supply for consumption and sale.
- Incidents of conflict over pasture and watering points are more likely to reduce as pasture and water availability and access improve in most of the wet season grazing areas.

**Recommended mitigation actions:**

- Ensure continuous crop monitoring in order to provide early warnings and timely intervention, especially with the threat of the AAW which has been detected in Magwi County.
- Activation of livestock surveillance systems for early detection, identification and reporting of any animal health risks for timely intervention.
- Farmers are encouraged to embrace good agronomic practices such as early planting, timely weeding and observation of good field sanitary measures to minimize losses due to pests and diseases.
- Timely prepositioning of agricultural inputs (seeds and tools) is recommended to enable farmers to take advantage of favorable weather conditions in the south-western and north-western parts of the country.
- Establishing on-farm physical structures to improve drainage of excess water in flood-prone areas and moisture retention structures in low rainfall areas.