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## October to December 2016 Climate Outlook for South Sudan - FAO's Key Messages<sup>1</sup>

Based on 44<sup>th</sup> Greater Horn of Africa Climate Outlook Forum (GHACOF 44)

Kampala, Uganda, 29 - 30 August 2016

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The Forty Fourth Greater Horn of Africa Climate Outlook Forum (GHACOF 44) was convened from 29 to 30 August 2016 at the Speke Resort Conference Centre Munyonyo, Kampala, Uganda by the IGAD Climate Prediction and Applications Centre (ICPAC) in collaboration with WMO, UNDP, USAID, DFID and other partners to formulate a consensus regional climate outlook for the October to December 2016 rainfall season over the Greater Horn of Africa (GHA) region. The GHA region comprises Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Sudan, Tanzania and Uganda. The forum was attended by over 200 participants from IGAD member states (Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Sudan, Tanzania and Uganda) and scientists from regional climate centres.

During modelling and consensus building, technical guidance and valuable inputs were drawn from a wide range of sources including the World Meteorological Organization's Global Producing Centres (WMO-GPCs), Met Office, International Research Institute for Climate and Society (IRI), US Geological Survey (USGS) and the National Meteorological and Hydrological Services (NMHSs) of the GHA. Additional inputs were also obtained from UNESCO, Western Indian Ocean Marine Sciences Association (WIOMSA) as well as expert interpretation and opinion by regional and international climate scientists.

The implications of prevailing sea surface temperatures (SSTs) anomalies over the Tropical oceans and predicted negative phase of the Indian Ocean Dipole mode (IOD), and weak to moderate La Niña conditions over the equatorial Pacific Ocean, regional circulation systems, topography and large inland water bodies that influence rainfall during the season were considered. The produced regional forecast product was further assessed using dynamical models product and expert interpretation to arrive at regional consensus climate outlook for October to December 2016 rainfall season. The potential benefits and negative implications of the consensus climate outlook were discussed, and mitigation strategies for the respective IGAD member countries and key sectors were developed.

### **Consensus Outlook for South Sudan (October to December 2016 rainfall season)**

The October to December 2016 consensus climate outlooks for South Sudan are as below:

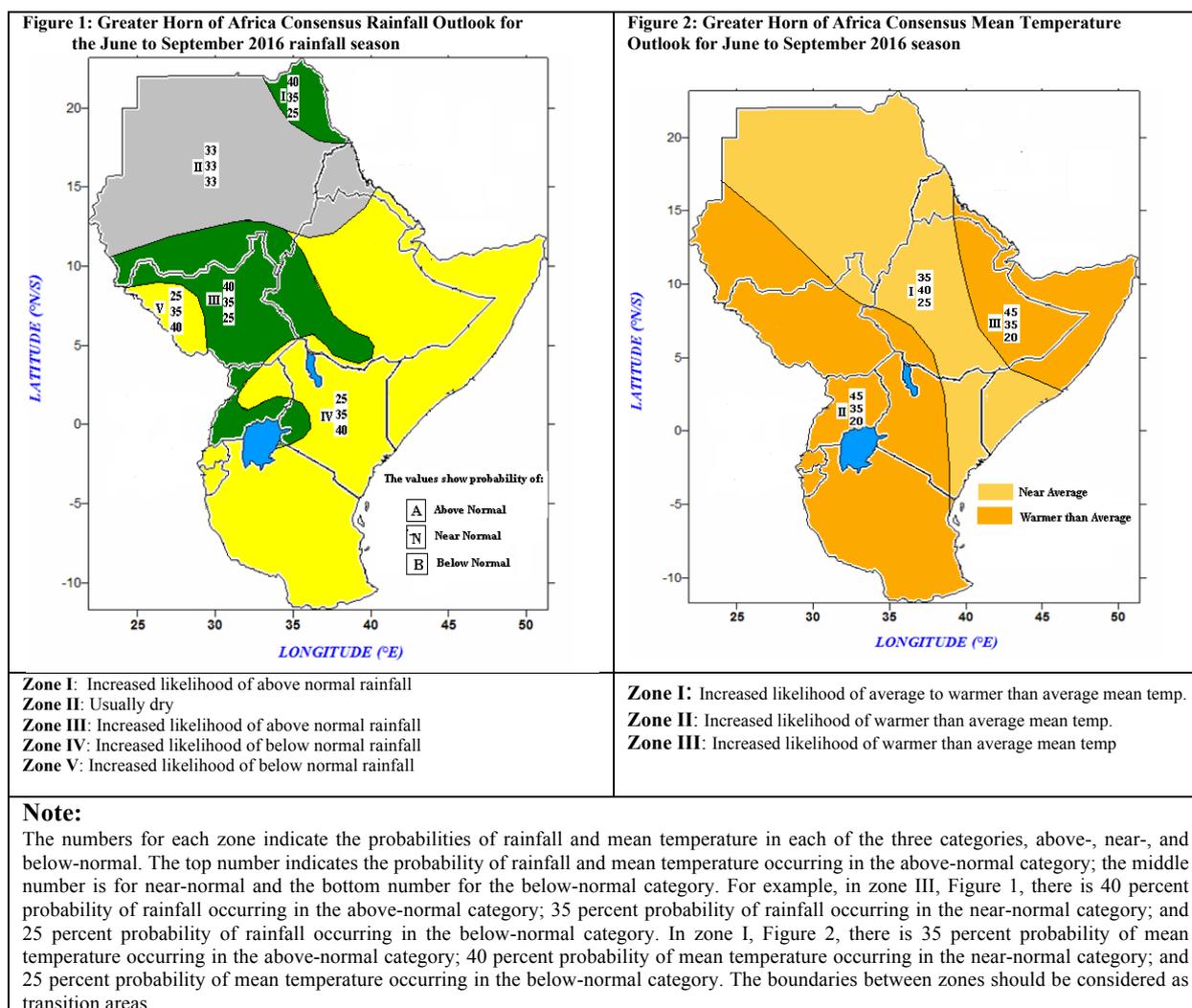
- Generally, October to December rainfall performance is predicted to be above average over most parts of South-Eastern and Northern parts of South Sudan;
- In particular, areas in the Southern, Eastern and Northern parts of South Sudan have high likelihood of above normal rainfall during the October to December 2016 rainfall season (Figure 1 Zone III);
- In comparison with the long-term average, most parts of Yambio, Nzara, Ezo, Tambura, Raga and Wau have high likelihood of receiving below normal rainfall during the October to December 2016 rainfall season (Figure 1 Zone V);

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

- There is increased likelihood of warmer than average mean temperatures over most parts of South Sudan (Figure 2 Zone II) except for the Northern and North-Eastern parts of Upper Nile State where mean temperatures are forecast to be average to warmer than average for the period of October to December 2016 rainfall season (Figure 2 Zone I).

**Note:** Although the outlook is relevant for seasonal time scales and relatively large areas, there is possibility for local and month-to-month variations to occur as the October to December season progresses. It is likely that dry spells might occur in areas with an increased likelihood of above normal rainfall and flash floods might occur in areas with increased likelihood of below normal rainfall. Updates will be provided by the South Sudan Meteorological Department.



**Agriculture and food security sector implications of October to December 2016 rainfall outlook:**

**a) Positive implications of above-normal October to December 2016 rainfall outlook:**

- The above normal rainfall forecast is more likely to favor production of sorghum, maize, millet, groundnut, sesame, cassava and sweet potato in non-flooding bimodal and unimodal areas of Greater Equatoria, Upper Nile and Bahr-el Gazal states;
- Areas known for growing ratoon sorghum crop in Eastern Equatoria (Kapoetas) and Abyei will also benefit from the above normal rainfall predicted for October to December 2016;
- Increased water discharge into Nile River and its tributaries is more likely to increase fish volumes and present an opportunity for fishing in and along the Nile Basin thus improving household protein consumption;

- Improved pasture conditions and water availability for both livestock and domestic use will more likely sustain livestock and pastoral households around their homesteads. This will ensure availability of milk and livestock products which are expected to contribute positively to household food consumption and delay out-migration in search of pasture and water.

**b) Negative implications of above-normal October to December 2016 rainfall outlook:**

- The above average rainfall forecast in the flood plains (Eastern and Western plains) is likely to burst banks of rivers and streams along the Nile-Sobat corridor. This is likely to worsen the situation in August and September for flood affected households (who will most likely be displaced) and affect crop fields in both Western and Eastern flood prone areas, which will be in the maturing stage in readiness for harvesting in January;
- Warmer than average temperatures and enhanced rainfall forecast in most areas of South Sudan will more likely increase incidences of disease outbreaks and pest infestation;
- Pre and post-harvest losses of crops such as sesame, cassava, early maturing sorghum and second season groundnut and maize are more likely to occur in most cropping areas due to excessive rain water and pest infestation;
- Physical access to remote areas and markets are more likely to be limited due to impassable feeder road conditions. This will more likely may increase the cost of transportation and lead to high food commodity prices in the local markets.

**c) Positive implications of below-normal October to December 2016 rainfall outlook:**

- The below normal rainfall forecast during October to December is more likely to favor harvesting, drying of maize, sorghum, millet, sesame as well as reduce post-harvest losses in the cropping areas of Yambio, Nzara, Tambura, Ezo, Wau and South-Western Raga.

**d) Negative implications of below-normal October to December 2016 rainfall outlook:**

- The below normal rainfall amount forecast for the period of October-December is likely to affect second crop development and harvest due to the anticipated moisture stress and higher than average temperatures.

**Recommended mitigation actions:**

- Timely dissemination of flood early warning information to vulnerable communities in flood-prone areas and riverine settlements for early preparedness in order to mitigate the negative impacts of anticipated floods and water-borne diseases;
- Support communities in flood prone locations to rehabilitate existing dykes in order to prevent flooding is encouraged so that assets of households residing in flood-prone areas can be protected;
- Close monitoring of hotspot areas and activation of national response plans is recommended so as to mitigate the impact of disasters in a timely manner.

Other resilience and long-term recommendations include:

- Activation of both public health and livestock surveillance systems for early detection, identification and reporting of any animal health risks for timely intervention;
- Provision of advisory services to farmers to use good post-harvest handling techniques (such as using proper storage facilities, timely harvesting and guarantee proper drying before storage etc.) to reduce post-harvest losses;
- Good practices such as field drainage and field sanitary measures should be observed by farmers in order to minimize losses due to pests and diseases;
- Encourage farmers to timely harvest and store their crops in order to minimize the impact of abnormal rains.