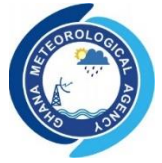




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GHANA METEOROLOGICAL AGENCY'S SEASONAL RAINFALL FORECAST FOR THE MINOR RAINY SEASON: SEPTEMBER-NOVEMBER (SON) FOR, 2021.

Ref. No: Met. 9.3/28

Date Issued: 1st September, 2021

Summary

In the 2021 Minor Season, the Rain is expected to start early (early Onset) over Abetifi, Atebubu, Kete Krachi, Kpando areas in the southern part of the country, whilst it is likely to have an early to normal cessation for most places in the southern sector of the country. Normal dry spells are expected within the early parts of the season whereas getting to the end of the season there will be normal to longer dry spells for most places in the country. At the end of these forecasts, recommendations are made to the various stakeholders to help manage risks and take advantage of the season.

2021 SEPTEMBER OCTOBER NOVEMBER (SON) MINOR SEASONAL FORECAST

Observed atmospheric conditions over land and oceans coupled with outputs from the World Meteorological Organization (WMO) recommended Leading forecast Centers like International Research Institute for Climate and Society (IRI), Climate Prediction Centre (NCEP-CPC,NOAA), the European Centre for Medium Range Weather Forecast (ECMWF), UK Met Office, Meteo France, North American Multi-Model Ensemble (NMME), North Carolina Institute for Climate Studies together with the output of the Ghana Meteorological Agency's model and the experience with local climatological, do suggest that the minor rainy season over the country is expected to be as follows:

Table 1. Long Term Mean (Normal) of Onset and Onset Dates for 2021 Minor Rainfall Season

ZONE	Normal Onset Dates (LTM)	Forecasted Onset Dates
East Coast	1 st Week of Sept. – 3 rd Week of Sept	3 rd Week of Sept.
West Coast	1 st Week of Sept. – 3 rd Week of Sept	1 st Week of Sept.– 2 nd Week of Sept.
Forest Zone	3 rd Week of Aug – 1 st Week of Sept	3 rd Week of Aug – 4 th Week of Aug.
Transition Zone	3 rd Week of Aug – 1 st Week of Sept	3 rd Week of Aug – 4 th Week of Aug.

Table 2. Long Term Mean of Cessation and Cessation Dates for 2021 Minor Rainfall Season

**Note: Long term mean (LTM) is the 30-year average condition of the given Zone from ,1981- 2010, and 1991-2020*

ZONE	Normal Cessation dates (LTM)	Forecasted Cessation dates
East Coast	3 rd Week of Oct – 4 th Week of Oct.	3 rd Week of Oct – 4 th Week of Oct.
West Coast	4 th Week of Oct – 3 rd Week of Nov	3 rd Week of Oct – 1 st Week of Nov.
Forest Zone	1 st Week of Nov – 1 st Week of Dec.	1 st Week of Nov – 4 th Week of Nov
Transition Zone	1 st Week of Nov – 3 rd Week of Nov	4 th Week of Oct – 2 nd Week of Nov

2021 Forecast Maps for Onset and cessation Dates for the SON Season



Fig. 1 Onset dates for the 2021 minor season

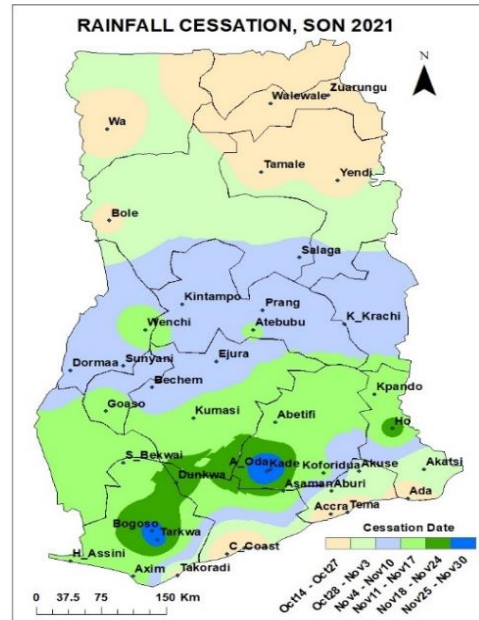
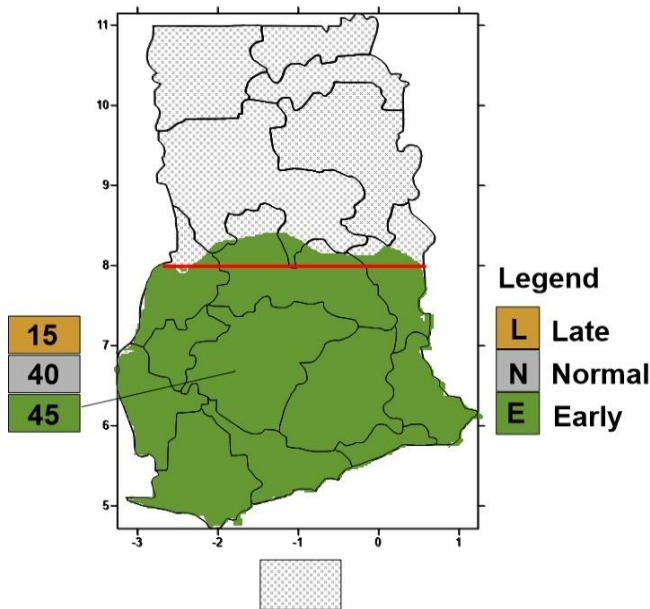


Fig. 2 cessation dates for the 2021 minor season

Onset Dates of the Minor Season, 2021



Forecast Issued Earlier on is still Valid

Fig. 3 Prob. forecast for Onset dates for the 2021 minor season

Cessation Dates for the 2021 Minor Season

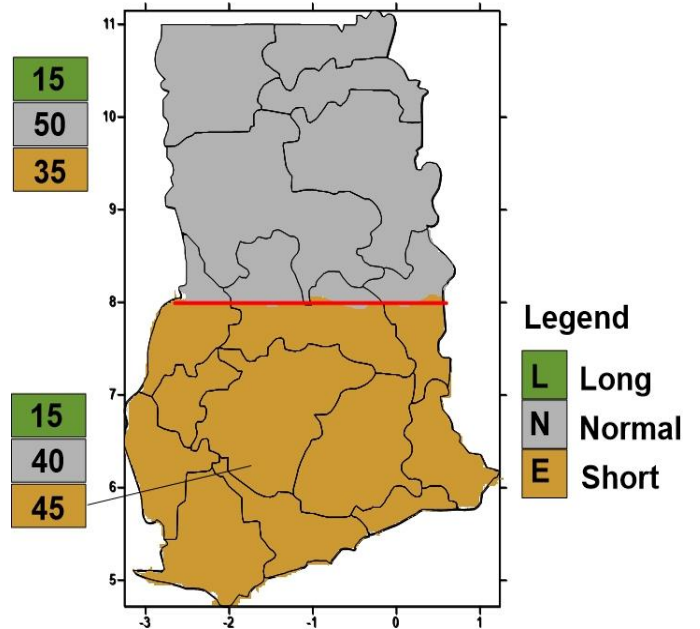


Fig. 4 Prob. forecast for cessation dates for the 2021 season

Table 3. Forecast of Total Rainfall Amount for September – November (SON) Season

ZONE	LTM (mm)	SON (mm)
East Coast	125 – 210	120 – 200
West Coast	270 – 450	270 -450
Forest	280 – 470	290 – 490
Transition	300 – 500	300 – 500

Table 4. Forecast of Length of Season and LTM for September – November (SON) Season

ZONE	LTM (Days)	SON (Days)
East Coast	30-45	32 - 41
West Coast	55-80	48 - 75
Forest	65-100	56 - 98
Transition	65-95	72 - 84

Total Rainfall Amount & Length of Season Forecast Maps of 2021 SON Season

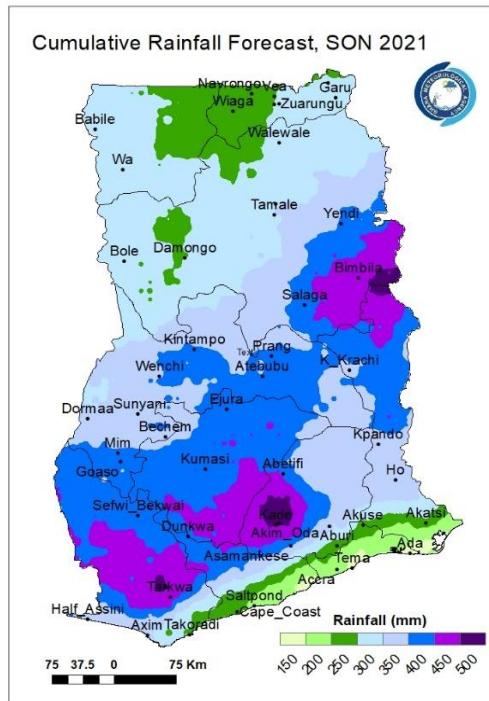


Fig. 5 Seasonal rainfall total for the 2021 minor season

Prob. Map of Cumulative Rainfall for 2021 Minor Season

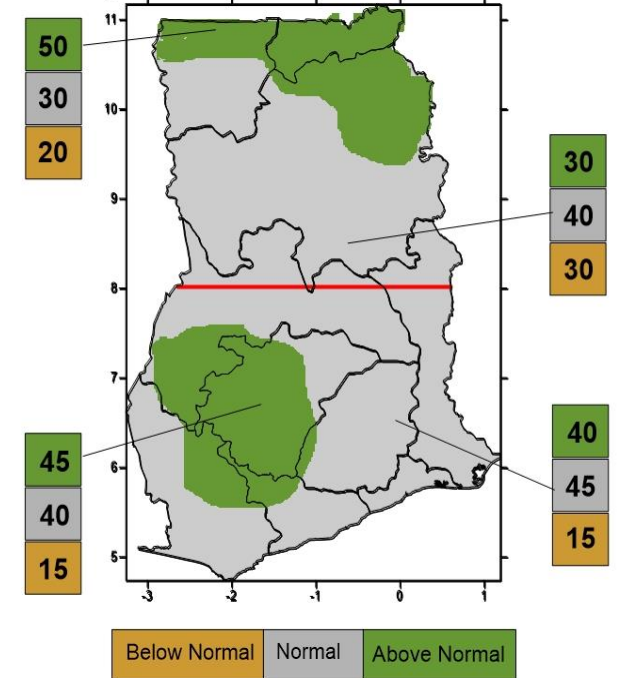


Fig. 6 Prob. Forecast for the SON rainfall total for the 2021 minor season

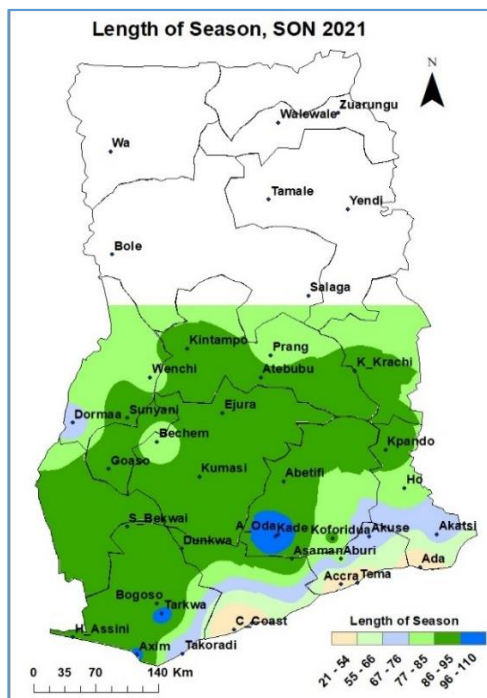


Fig. 7 Length of season for the 2021 minor season

2021 Minor Season Length of Season

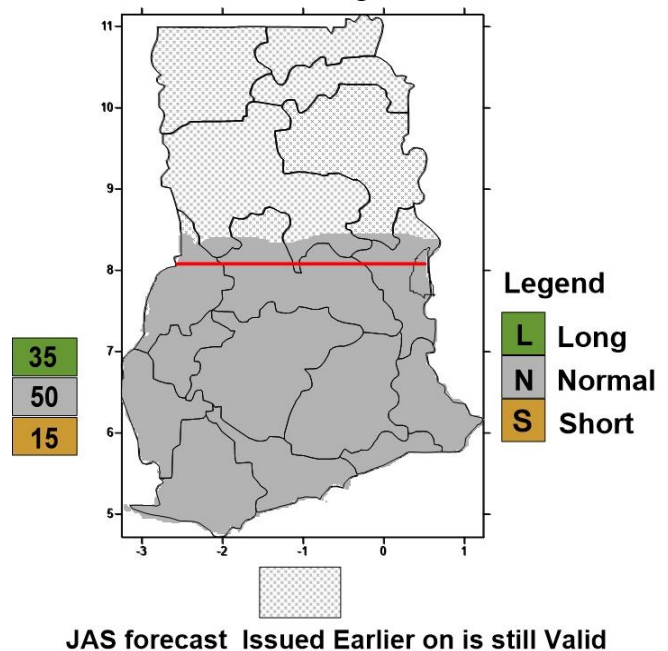


Fig. 8 Prob. Forecast for the Length of season for the 2021 minor season

NB: Early Dry Spell is defined as the longest successive dry days during the first 50 days after the start of the season.

Table 5. Forecast of Length of Early Dry Spell and its LTM for SON Season

ZONE	LTM of Early Dry Spell(days)	Forecast of Early Dry Spell(days)
East Coast	16	16
West Coast	9	9
Forest Zone	7	7
Transition Zone	6	7

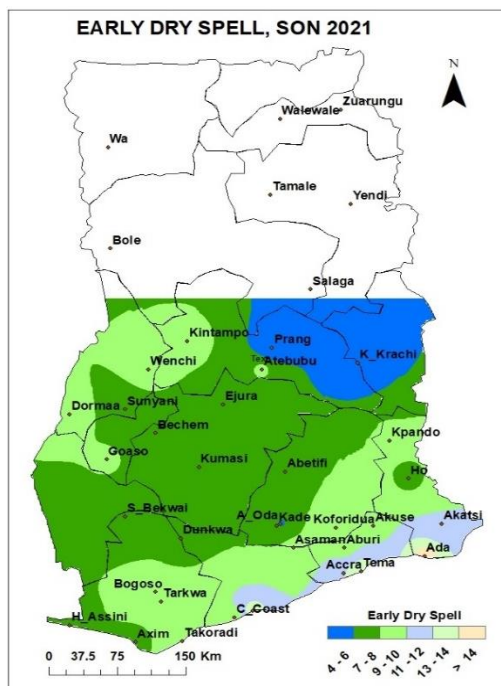


Fig. 9 Length of season for the 2021 minor season

Early Dry Spell of the Minor Season, 2021

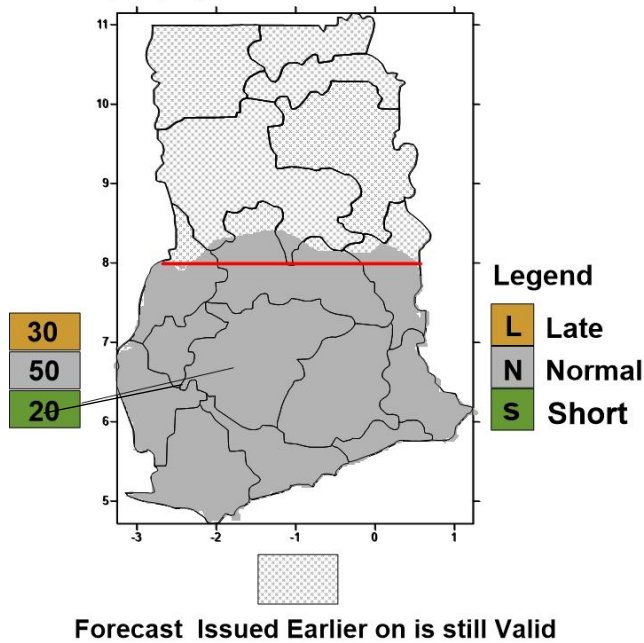


Fig. 10 Prob. Forecast for the Early Dry Spell for the 2021 minor season

SUMMARY OF SON SEASONAL FORECAST, 2021

1. Cumulative Rainfall Distribution

a. Southern Ghana Rainfall Season

The distribution of SON seasonal cumulative rainfall, both in time and space is expected to be mostly normal for most places in the southern parts of the country, however some other places, especially in the forest areas will receive above normal rainfall.

b. Update of Northern Ghana Rainfall Season

Many places in the North will experience mostly normal rainfall; it is forecasted that most places in the Upper East region will experience surplus rainfall for the SON Season. (Table 3 for normal rainfall amount).

2. Onset

Early to normal Onset dates are expected over most places in the Southern part of the country for this SON season. (See Table 1 for Normal Onset dates)

3. Dry Spells

At the beginning of the minor season, Normal Dry Spells are expected while towards the end of the season, longer to normal dry spells are expected over most places in the southern regions of Ghana.

4. Cessation

The rainfall season for 2021 is likely to end earlier as compared to their Normal dates (*See Table 2 for Normal End/Cessation dates*) for most places in Southern Ghana. It is expected that some few places along the forest areas like Kade, Bogoso, Tarkwa and Akim Oda will have their season ending on the normal dates (1st week of December).

5. Length of the Season

The 2021 SON seasonal length is expected to be Normal to shorter days (between 32-98 days) (*See Table 4 for normal seasonal length*).

POTENTIAL IMPACTS AND RECOMMENDATIONS (ADVISORIES)

At the peak of the SON season, there is a high probability of few incidences of heavy rains accompanied by strong winds and lightning which could lead to localized floods. There is also a high probability of experiencing normal dry spells during the beginning of the season and relatively long dry spells towards the end of the season. The minor Season, characteristically, has shorter length of season and this year is no exception. Therefore, to mitigate any risk that might occasion to people, animals, crops and material goods, it is recommended that:

a. Disaster Management Sector

- i. In the face of flood risk: (There is a high chance of occurrence this year, 2021, in the Northern half of Ghana and other major, especially the Upper East Region)**
 - a. Establish and operationalize integrated monitoring and early warning systems for flood risk.
 - b. Exchanges between the agencies in charge of flood monitoring, disaster risk reduction and humanitarian aid should be escalated.
 - c. Sensitize the populace of the exposed areas about the impending danger.
 - d. Settlers in flood-prone areas should be relocated. (Domestic / Farming / Commercial places)
- ii. In the face of long dry spell risk: (Which, generally has a moderate chance of occurrence)**
 - a. Step Up education and sensitization of the people on the likelihood of bush fires.
 - b. Liaise with national meteorological, agricultural and hydrological experts for information and advice to provide relief to affected areas.
 - c. Support the most vulnerable people in the affected areas to pursue alternate livelihoods.

b. Transport and Public Safety

- i. Flash Floods may occur especially in the month of October at places like low laying areas of Accra and Kumasi during the September to November period. This may lead to some roads becoming impassable when it rains. Road users should be mindful when plying those roads. Drivers should resist driving through flood waters.**

c. National/Local Authorities

Municipal Authorities in areas where deficit rainfall is expected are advised to;

- i. Ensure the Control/maintenance of dams/dug outs for irrigation as well as for livestock.
- ii. Ensure enough food storage.
- iii. Collaborate with Meteorological Agency, National Disaster Management Organization (NADMO) and Health Services to disseminate warnings and create awareness on climate-related diseases.
- iv. Monitor the quality of water and sanitation in towns and villages.
- v. Promote irrigation and ensure rational management of water resources for crops and other uses.

d. General Public

- i. Must be mindful of the impact of deficit rainfall on dams and its attendant challenges to the energy sector. The general public is therefore advised to use energy prudently.
- ii. Avoid wastage of water to prevent water rationing.

e. Health Sector – Facing the risk of diseases

In places where the rainy season is wetter, there are higher levels of the risk of Cholera, malaria, dengue fever, bilharzia, and diarrhoea. To mitigate the development of germs and reduce the risk of diseases, it is strongly recommended that:

- i. Public Education should be intensified through national platforms on disaster risk reduction through the radio, TV, information vans etc.
- ii. Dissemination of bulletins on climate-sensitive diseases,
- iii. Intensify collaboration with stakeholder such as the meteorological, hydrological and the disaster organisations
- iv. Prevent diseases by vaccinating people and animals
- v.

f. Agriculture, Food Security and Livestock Sectors

For areas where it is likely to observe normal to deficit (below normal) rainfall, late season start dates, normal to longer dry spells and deficit river/dam flows, it is recommended that farmers, breeders, authorities, projects and NGOs:

- i. Focus on drought tolerant species.
- ii. Invest more in the seeds of improved varieties. They are also advised to practise the development of yield enhancement techniques for both food crops and cash crops;
- iii. Provide fertilizers (organic fertilization and mineral fertilizer);
- iv. Be mindful of the decisions and choices they make since there is the likelihood of moisture deficit during the season coupled with the fact that the season is shorter
- v. Diversify income-generating activities and promote agricultural practices such as tillage, mulching, market gardening and agroforestry to offset the production deficit that could affect areas exposed to dry spells
- vi. Adopt farming techniques/practises for the conservation of soil water
- vii. Liaise with national Meteorological, Agricultural and Hydrological Authorities for information and expert advice.

NB: Late Dry Spell is defined as the longest successive dry days from the 51st day after the start of the season to the end of the season.

ZONE	Forecast of Late Spell(days)	Normal of Late Spell(days)
West Coast	15	10
Forest Zone	13	10
Transition Zone	17	17

The East Coast mostly does not have the length of season spanning beyond the 50 days.

NB. This outlook should be used with the 24-hour forecast and regular updates issued by the Agency

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