Africa RiskView

MID-SEASON REPORT | The Gambia (2021)

This ***Africa RiskView*** **Mid-season Report** is a publication by the **African Risk Capacity (ARC)**. The report discusses *Africa RiskView's* estimates of rainfall, drought and population to be affected, comparing them to information from the ground and from external sources. It also provides the basis of a validation exercise of *Africa RiskView*, which is conducted in each country at the end of an insured season. This exercise aims at reviewing the performance of the model and ensuring that the country's drought risk is accurately reproduced by *Africa RiskView* for drought monitoring and insurance coverage. The Mid-season reports are also being continuously refined with a view to providing early warning to ARC member countries.

Highlights:

Rainfall:

- Cumulative rainfall between 21 June and 31 August 2021 was generally above normal, with some areas in the Central River Region receiving rainfall as high as 169% of the normal.
- Except for slightly lower than normal rainfall received in parts of the country at the beginning of July and beginning of August, the temporal rainfall distribution was generally favourable
- The bulk of the above-normal rainfall was received in dekad 23 and dekad 24, i.e., 21 to 31 August 2021.

Drought:

- Planting was modelled as successful throughout the country and the first planting opportunity over most parts of The Gambia was realised in dekad 17.
- Pockets in North Bank, Lower River and Central River Regions had the first planting opportunity in dekad 18.
- The projected WRSI value across The Gambia was above the reference benchmark (average WRSI value of the last 38 years).

Affected Populations:

- As at 31 August 2021, the *Africa RiskView* projected no people as directly affected by drought at the end of the season. It is important to note that this figure is subject to change based on rainfall performance up to the end of the growing period.

Rainfall Performance

The growing season of the reference crop in The Gamia (groundnut) runs from 11 June through 20 November, i.e. from dekad 17 to dekad 32. As specified in the *Africa RiskView* drought risk customisation, groundnut planting begins in dekad 17 (11 June) and continues up to dekad 21 (31 July). The purpose of this report being assessing the mid-season performance of the 2021 agricultural season, it focuses on the period from the start of planting in dekad 17 (11 June) until the middle of the cropping season in dekad 24 (31 August).

Based on Africa Rainfall Climatology version 2 (ARC2)[1] satellite rainfall estimates, the 2021 cumulative rainfall for the period from dekad 17 (11 June) to dekad 24 (31 August) was largely above normal (average rainfall for the period from 1983 to 2020). The national average cumulative rainfall for the period stands at 160 percent of the normal. Across The Gambia, the cumulative rainfall varied from 151 percent of the normal in the West Coast Region to 169 percent of normal in the Central River Region, Fig-

[1] The satellite rainfall dataset chosen by the TWG for the 2021 customisation in The Gambia

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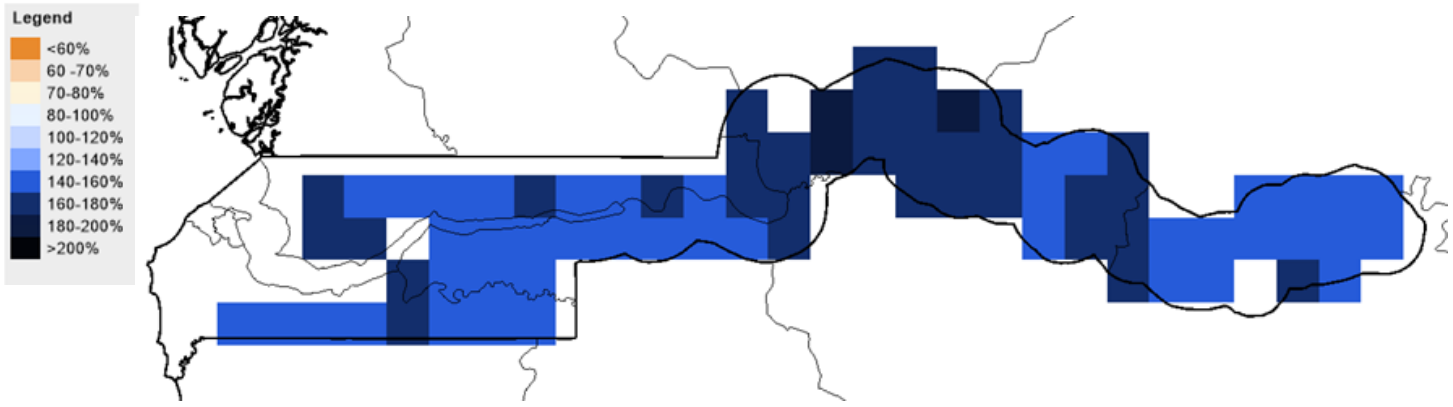

Figure 1: Cumulative rainfall as % of normal (11 June 2021 – 31 August 2021), ARC2

ure 1.

Regarding the spatial and temporal distribution of rainfall, analysis of dekadal (10-day) rainfall estimates showed that the planting window started with above-normal rainfall throughout The Gambia and progressed with close to normal to above normal condition until dekad 24 (31 August). The bulk of the above-normal rainfall was received from dekad 23 to dekad 24, i.e., 21 to 31 August 2021. At the beginning of July (dekad 19), the rainfall was slightly below normal in areas covering West Cost, North Bank and Lower River Regions; Fonis, Kiang and Jarra West are some of the districts that received below normal rainfall in dekad 19. Similarly, pockets throughout the country received below normal rainfall in mid-August (dekad 22); Baddibu, Kiang, Jarra West, Janjanbureh, Fulladu East and Upper River North can be mentioned in this connection, see Figure 2-15.

In line with the findings of *Africa RiskView*, the FEWS NET Seasonal Monitor[1] showed that the rainfall accumulated up to 20 August, 2021 for The Gambia was generally normal to above normal. Additionally, the WFP VAM West Africa Season Monitor[2] indicated that below normal rain-

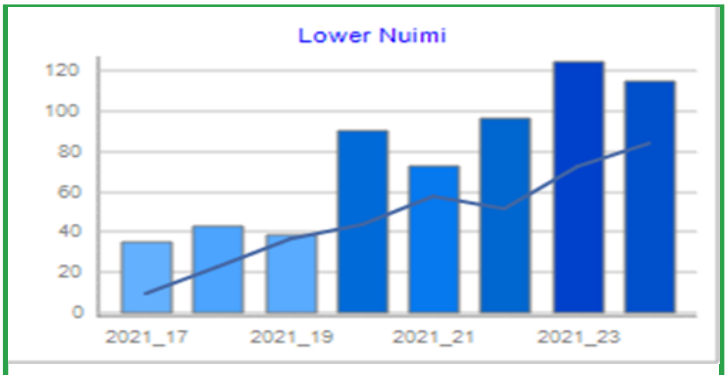

Figure 2: Dekadal distrbution of rainfall compared to long term average in Lower Nuimi (Dekad 17-24, ARC2)

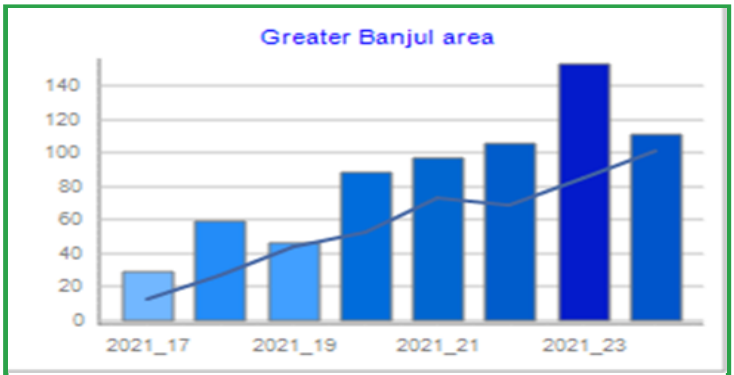

Figure 3: Dekadal distrbution of rainfall compared to long term average in Greater Banjul area (Dekad 17-24, ARC2)

[2] https://fews.net/sites/default/files/documents/reports/WEST_AFRICA_Seasonal_Monitor_July2021_0.pdf
[3] https://fscluster.org/sites/default/files/documents/wafricaseason202108d1en_0.pdf

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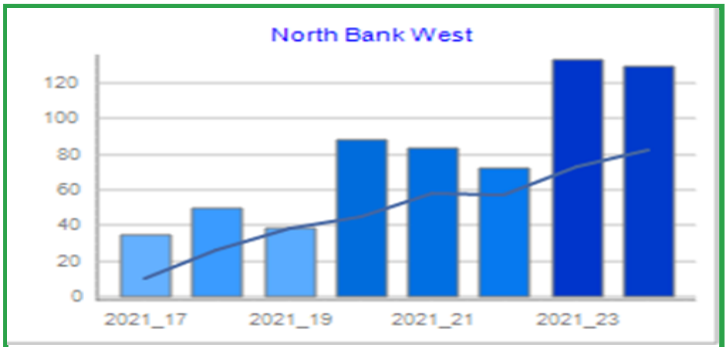

Figure 4: Dekadal distrbution of rainfall compared to long term average in North Bank West (Dekad 17-24, ARC2)

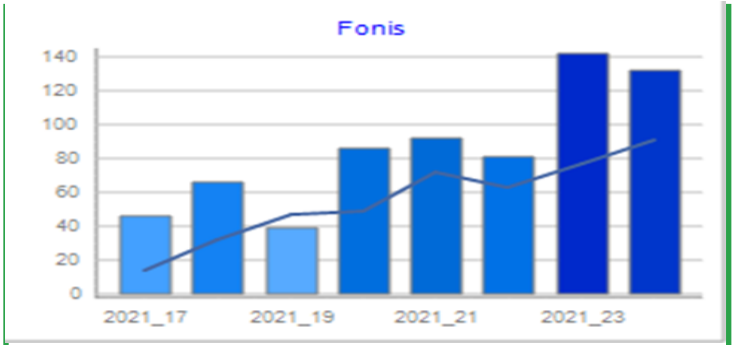

Figure 5: Dekadal distrbution of rainfall compared to long term average in Fonis (Dekad 17-24, ARC2)

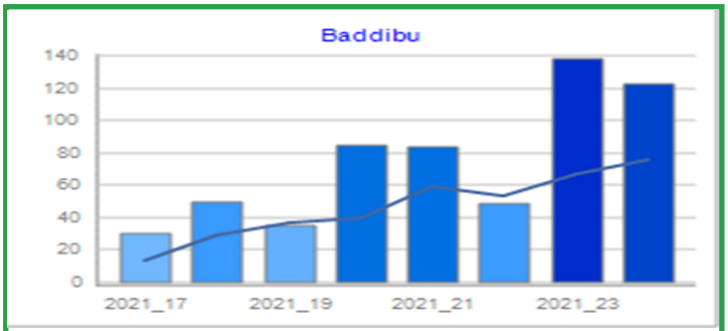

Figure 6: Dekadal distrbution of rainfall compared to long term average in Baddibu (Dekad 17-24, ARC2)

Figure 7: Dekadal distrbution of rainfall compared to long term average in Kiang (Dekad 17-24, ARC2)

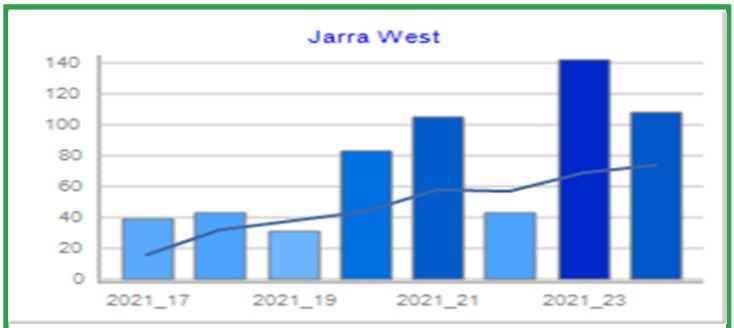

Figure 8: Dekadal distrbution of rainfall compared to long term average in Jarra West (Dekad 17-24, ARC2)

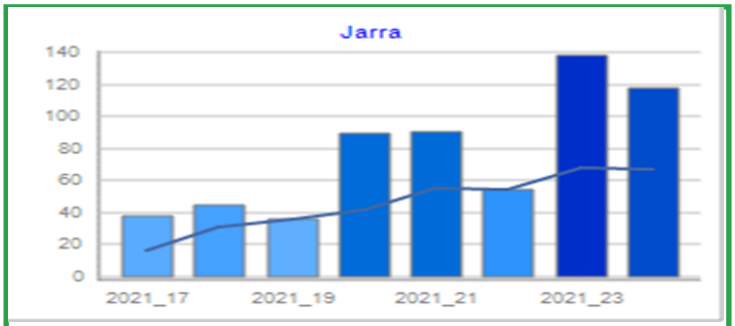

Figure 9: Dekadal distrbution of rainfall compared to long term average in Jarra (Dekad 17-24, ARC2)

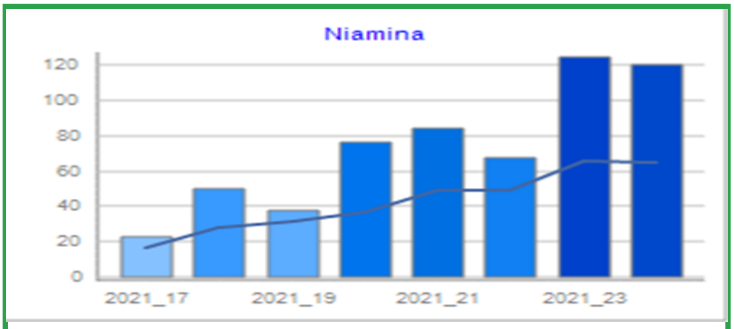

Figure 10: Dekadal distrbution of rainfall compared to long term average in Niamina (Dekad 17-24, ARC2)

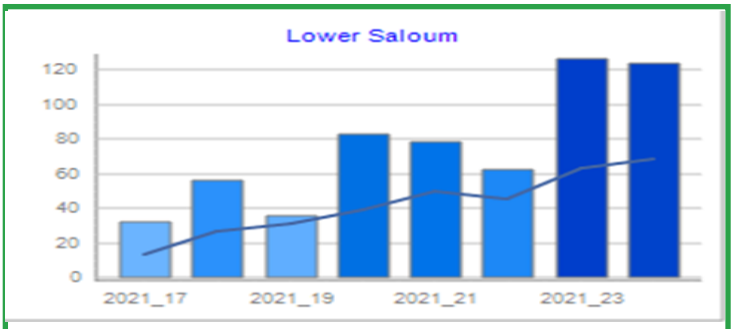

Figure 11: Dekadal distrbution of rainfall compared to long term average in Lower Saloum (Dekad 17-24, ARC2)

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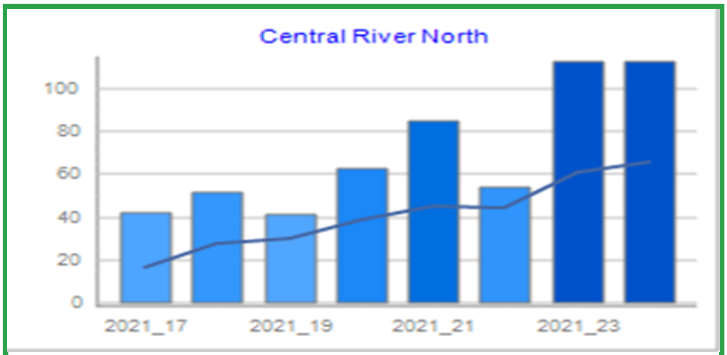

Figure 12: Dekadal distrbution of rainfall compared to long term average in Central River North (Dekad 17-24, ARC2)

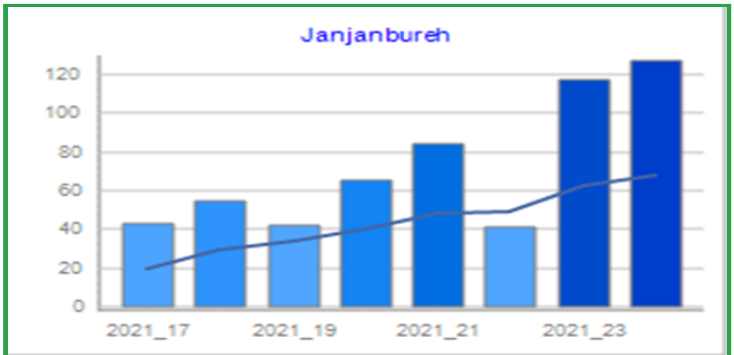

Figure 13: Dekadal distrbution of rainfall compared to long term average in Janjanbureh (Dekad 17-24, ARC

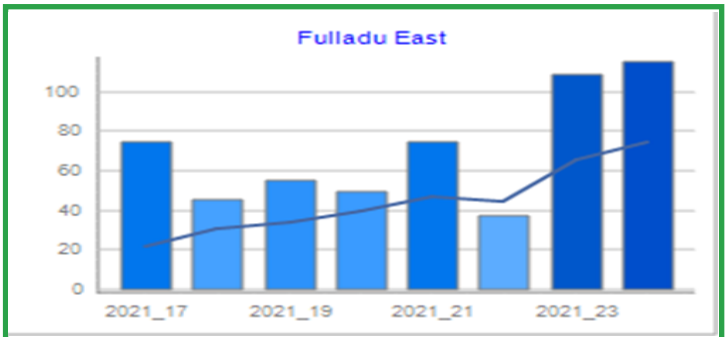

Figure 14: Dekadal distrbution of rainfall compared to long term average in Falladu East (Dekad 17-24, ARC2)

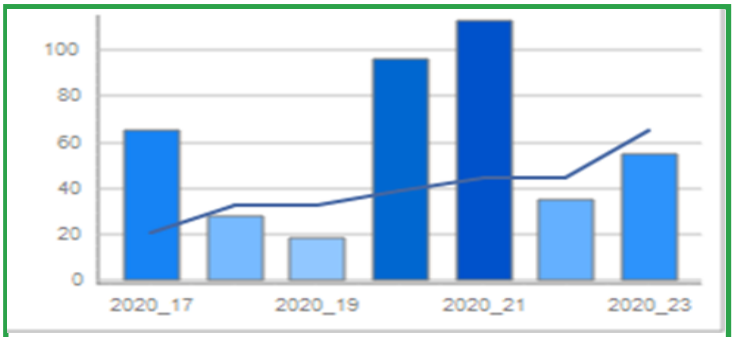

Figure 15: Dekadal distrbution of rainfall compared to long term average in Upper River North (Dekad 17-24, ARC2)

fall conditions were experienced in parts of the country in July.

Sowing Window Performance

Planting in *Africa RiskView* triggers with the fulfilment of pre-defined dekadal rainfall criteria. This criteria for The Gambia requires a minimum of 20mm rain in one dekad followed by 5mm of rain in the two subsequent dekads within the planting window. If this condition is not met within the planting window, it is assumed that planting was unsuccessful. Additionally, the "First" planting opportunity aggregation method was assumed to model farmers' response to planting opportunities within the planting window. According to this assumption, farmers are expected to take advantage of the first planting opportunity within the planting window, when realized.

As per the planting criteria definition described above, the first planting opportunity over most parts of The Gambia was realised in dekad 17. Pockets in North Bank, Lower River and Central River regions had the first planting opportunity in dekad 18, see Figure 16. The planting opportunities in most of The Gambia were realised earlier than the normal planting dekad. Pockets have had the first planting opportunity at the normal planting dekad, see Figure 17.

Drought Index

Africa RiskView uses the Water Requirements Satisfaction Index (WRSI) as a proxy indicator for drought. The WRSI is an index originally developed by the Food and Agriculture Organization of the United Nations (FAO). Based on satel-

lite rainfall estimates, it calculates whether a particular crop is getting the amount of water it needs at different stages of its development. In The Gambia, groundnut was used as a reference crop and the WRSI within *Africa RiskView* was customised to model the water need of this crop at different stages of its growth. The groundnut WRSI performance is considered as representative of the entire farming system.

The projected WRSI value as of August 31, 2021 (dekad 24) indicates excellent conditions across The Gambia, meaning 95% to 100% of the water required for groundnut is pro-

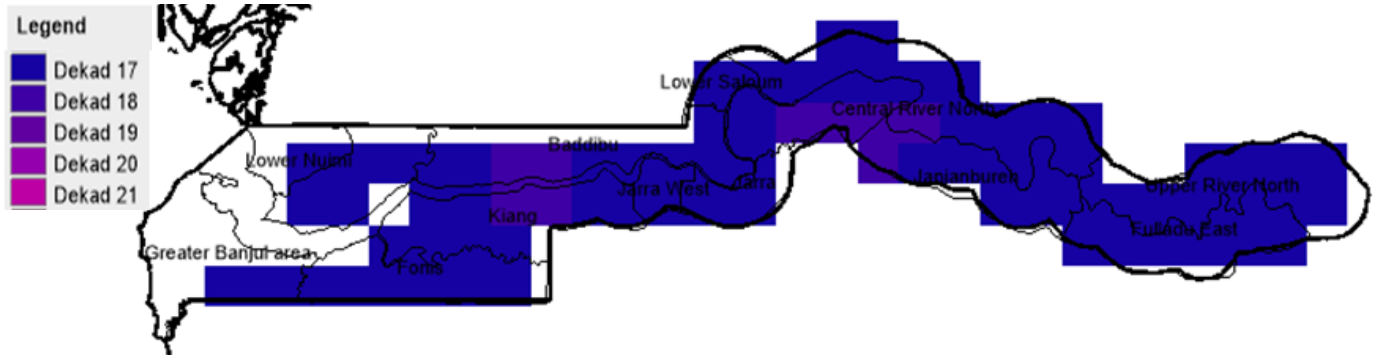

Figure 16: First sowing opportunity realised during the 2021 agricultural season (ARC2)

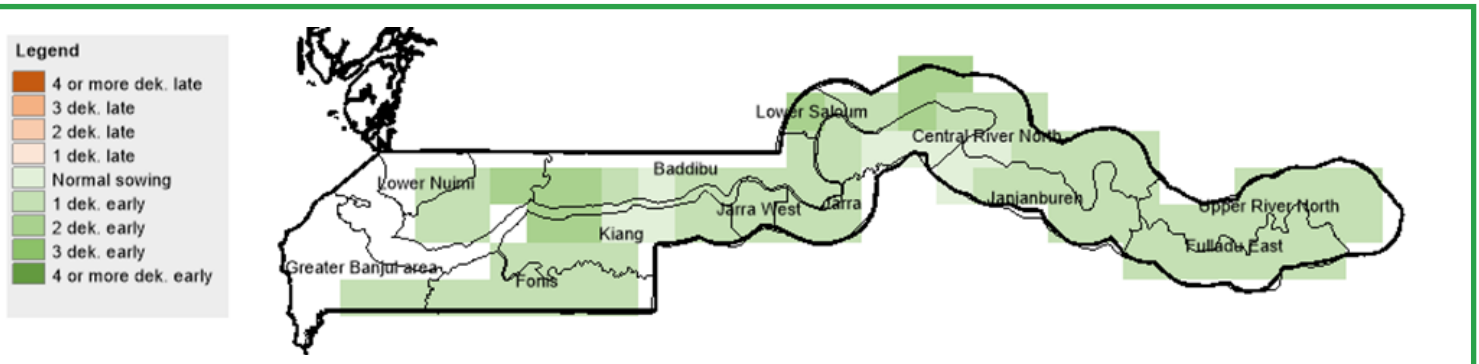

Figure 17: Modelled planting dekad compared to normal during the 2021 agricultural season (ARC2)

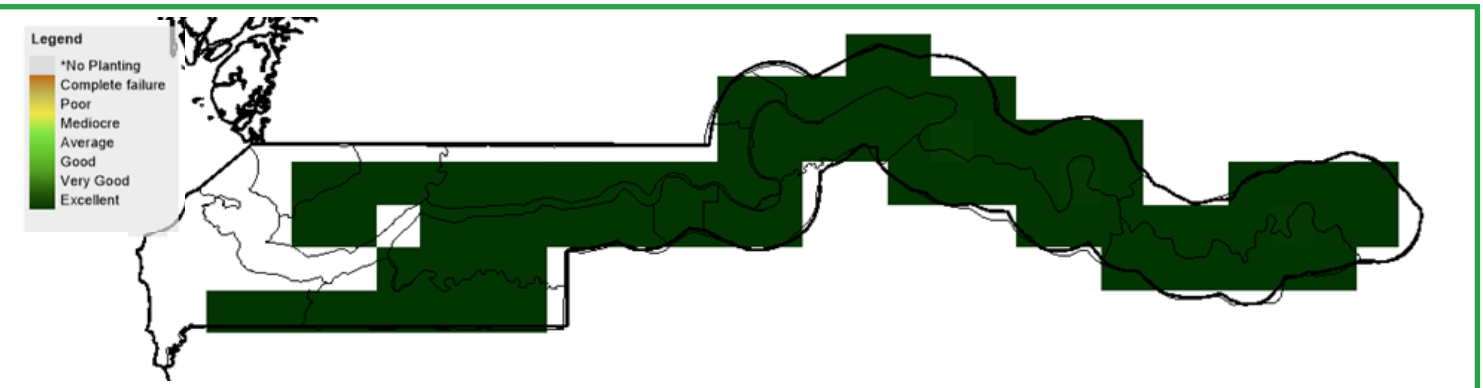

Figure 18: Projected end-of-season WRSI (Dekad 24, ARC2)

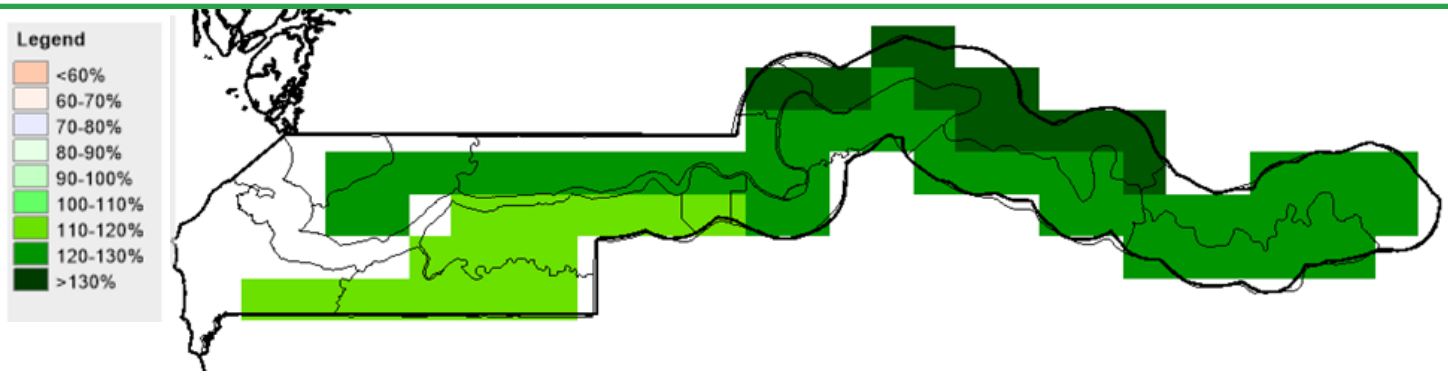

Figure 19: Projected end-of-season WRSI compared to benchmark (Dekad 24, ARC2)

jected to be met (see Figure 18). Comparison of the *Africa RiskView* modelled WRSI with the reference benchmark selected for the 2021 customisation (average WRSI value of the past 38 years – 1983 to 2020) shows that the modelled end-of-season WRSI value across the entire country was above the benchmark- see Figure 19.

Modelled Drought Impacts

The end of the growing season for The Gambia is three months away. Given that, precise predictions on the effect of drought on vulnerable populations at the moment is too early. However, based on the satisfactory start of the season, the *Africa RiskView* projects zero number of people to be affected by drought as at 31 August 2021, Figure 20. It is important to note that this figure is subjected to change based on rainfall performance between now and the end of the growing season in 10 November, 2021.

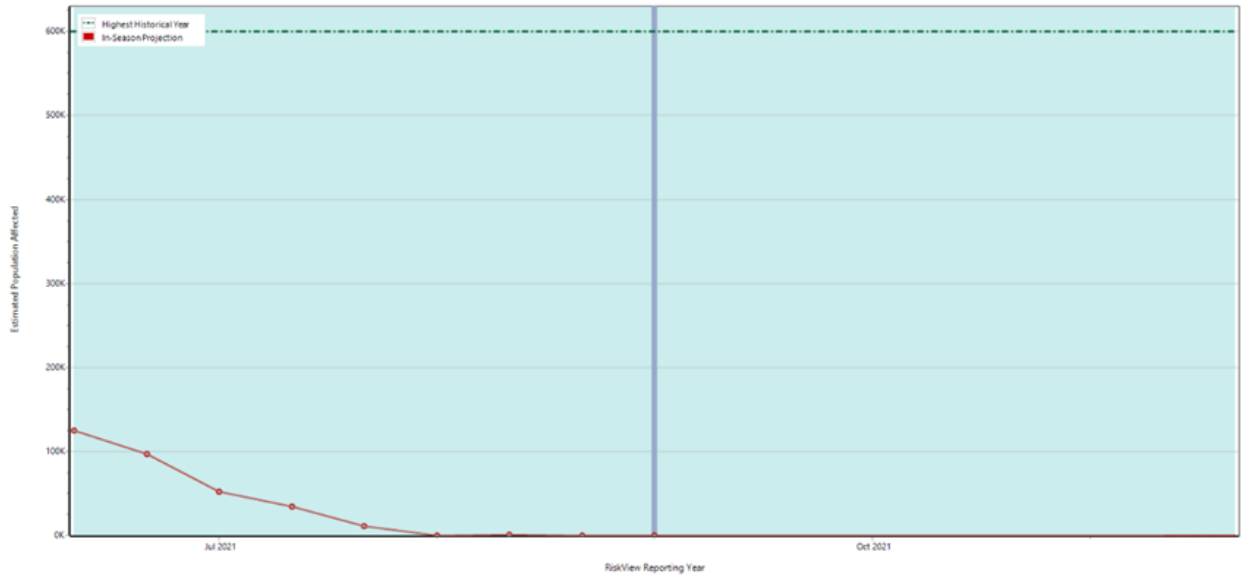

Figure 20: Projected number of people affected (as at 31 August, 2021)

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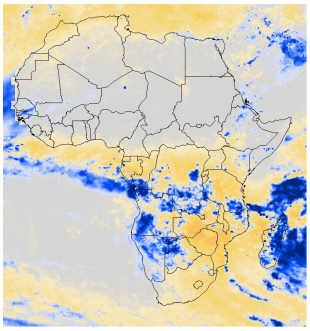
About ARC:

The **African Risk Capacity (ARC)** is a specialised agency of the African Union designed to improve the capacity of AU Member States to manage natural disaster risk, adapt to climate change and protect food insecure populations.

The ***Africa RiskView*** software is the technical engine of ARC. It uses satellite-based rainfall information to estimate the costs of responding to a drought, which triggers a corresponding insurance payout.

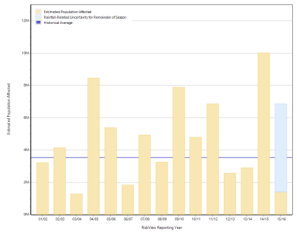
The **ARC Insurance Company Limited** is the financial affiliate of the ARC Agency, which pools risk across the continent through issuing insurance policies to participating countries.

Note on *Africa RiskView's* Methodology:

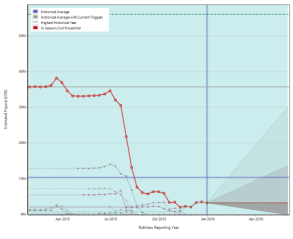


Rainfall: *Africa RiskView* uses various satellite rainfall datasets to track the progression of rainy seasons in Africa. Countries intending to participate in the ARC Risk Pool are required to customise the rainfall component by selecting the dataset which corresponds the best to the actual rainfall measured on the ground.

Drought: *Africa RiskView* uses the Water Requirements Satisfaction Index (WRSI) as an indicator for drought. The WRSI is an index developed by the Food and Agriculture Organisation of the United Nations (FAO), which, based on satellite rainfall estimates, calculates whether a particular crop is getting the amount of water it needs at different stages of its development. To maximise the accuracy of *Africa RiskView*, countries intending to take out insurance customise the software's parameters to reflect the realities on the ground.



Affected Populations: Based on the WRSI calculations, *Africa RiskView* estimates the number of people potentially affected by drought for each country participating in the insurance pool. As part of the in-country customisation process, vulnerability profiles are developed at the sub-national level for each country, which define the potential impact of a drought on the population living in a specific area.



Response Costs: In a fourth and final step, *Africa RiskView* converts the numbers of affected people into response costs. For countries participating in the insurance pool these national response costs are the underlying basis of the insurance policies. Payouts will be triggered from the ARC Insurance Company Limited to countries where the estimated response cost at the end of the season exceeds a pre-defined threshold specified in the insurance contracts.