

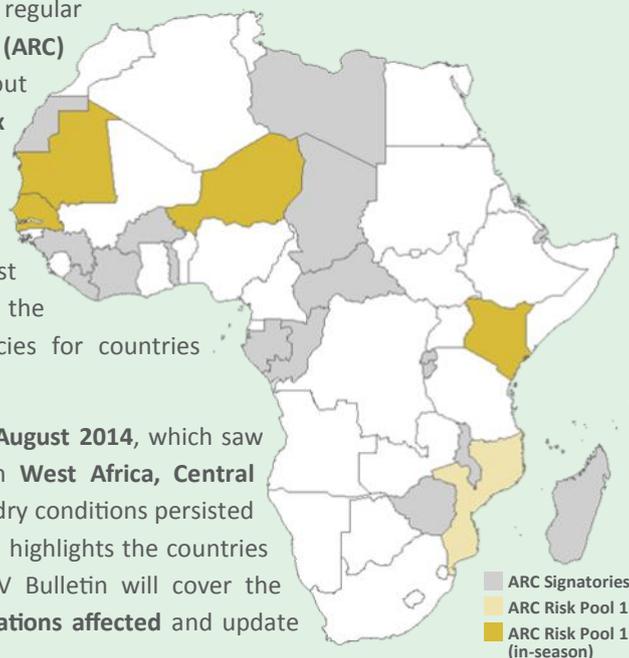
Highlights:

- **Rainfall:**
 - Mixed rainfall performance in **West Africa**
 - Above normal rains in parts of **East Africa**, including eastern Chad, Sudan, South Sudan, Ethiopia and western Kenya
- **Drought:**
 - Drought conditions in western and northern **Senegal**, due to poor rains during the sowing period
 - Rainfall threshold for sowing has been reached in **Niger** and **Mauritania**, but sowing started late in some areas
- **Potentially Affected People:**
 - ARV estimates that between 644,000 people and 1 million people are likely to be affected by drought at the end of the season in **Senegal**
 - It is currently too early to predict the outcome of the agricultural seasons in **Niger** and **Mauritania**
- **Insurance:**
 - Kenya, Mauritania, Mozambique, Niger and Senegal form the **first continental risk pool**
 - **Four ongoing seasons** (Senegal, Niger, Mauritania and Kenya) are **currently insured**
 - The ARC Secretariat has started discussions with **Senegal**, in view of a **potential pay-out**

INTRODUCTION

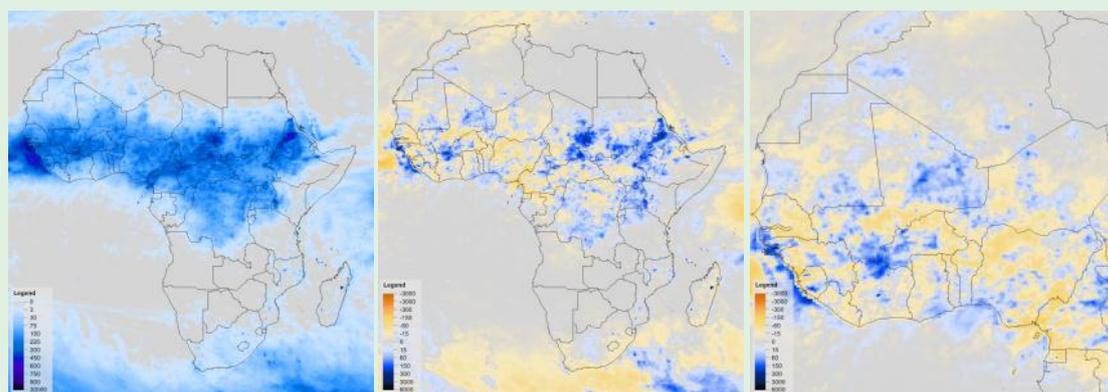
The *Africa RiskView (ARV) Bulletin* is a regular publication of the *African Risk Capacity (ARC) Agency*. It provides information about current **rainfall and drought index developments** as detected by ARV, and their potential **impact on vulnerable populations**. It also provides updates on **estimated response costs** to assist potentially affected people, which are the underlying basis of the insurance policies for countries participating in the ARC insurance pool.

This month's issue covers the month of **August 2014**, which saw the continuation of the rainy season in **West Africa, Central Africa** and parts of **East Africa**. Seasonal dry conditions persisted in **Southern Africa**. The **map on the right** highlights the countries on which this issue will focus. The ARV Bulletin will cover the following topics: **rainfall, drought, populations affected** and update estimates on **response costs**.



RAINFALL

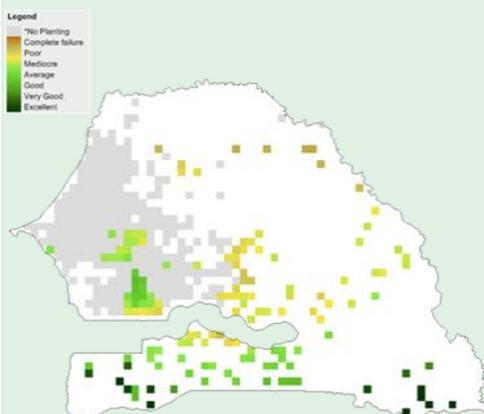
During the reporting month, most countries in **West** and **Central Africa** experienced significant rainfall, as indicated by the cumulative rainfall map below. In **East Africa**, Uganda, South Sudan, Sudan and Ethiopia (with the exception of the south-eastern parts of the country) are currently in their main rainy season, while **Southern Africa** remained mostly dry in line with seasonal patterns (see Map 2).



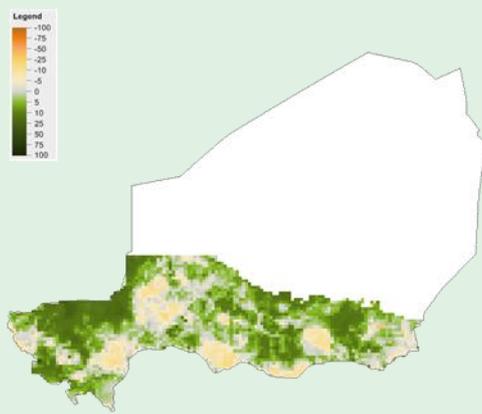
Compared to the long-term average, the rains in August were above normal in eastern Chad, Sudan, Ethiopia, Uganda and parts of the DR Congo (see Map 3). In **West Africa**, the **rainfall performance was slightly better than in July 2014**. Most areas that had experienced poor rains in the first three months of the season received above normal precipitations, particularly northern Senegal, Mauritania and parts of Mali, Burkina Faso, Niger and Nigeria. However in some of these areas this improved rainfall may have come too late in the season (see next section). In other parts of the sub-region, such as eastern Senegal, Guinea, central Mali and northern Burkina Faso, the rains remained below average.

DROUGHT

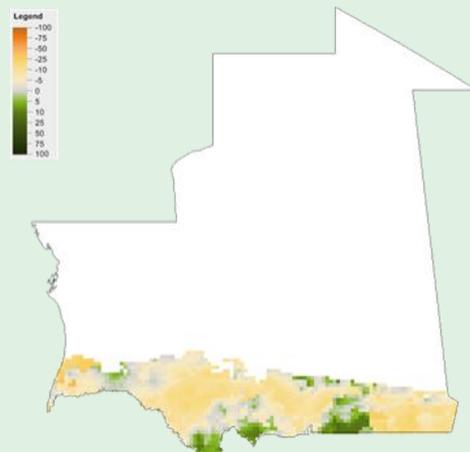
ARV uses the **Water Requirements Satisfaction Index (WRSI)** as an **indicator for drought**. The WRSI is an index developed by the *Food and Agriculture Organisation of the United Nations (FAO)*, which, based on satellite rainfall estimates, calculates whether a particular crop is getting the amount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



MAP 5: ACTUAL WRSI, SENEGAL (RFE2) (2014 AGRICULTURAL SEASON)



MAP 6: WRSI COMPARED TO NORMAL (ARC2), NIGER (2014 AGRICULTURAL SEASON)



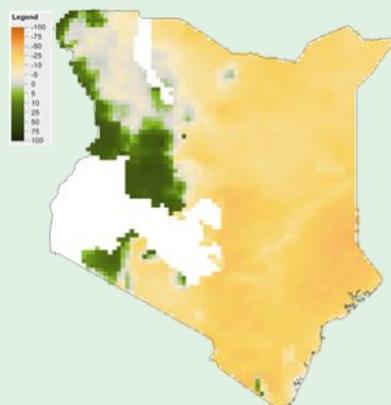
MAP 7: WRSI COMPARED TO NORMAL (RFE2), MAURITANIA (2014 AGRICULTURAL SEASON)

Senegal (2014 agricultural season): As discussed in previous issues of the ARV bulletin, Senegal is currently experiencing a poor development of its agricultural season, which lasts from mid-May to mid-December. The rainfall threshold required for the sowing of the reference crop (groundnut) was not reached by the end of the sowing window in July in most of the country's north and north-west (grey areas in Map 5). As a result, the WRSI in these areas will not be calculated by ARV as it is unlikely that farmers, even if they did plant their groundnut crop, will be able to produce substantial yields. Thus, the rainfall received in these areas since July cannot improve the drought conditions reflected in the model for the reference crop. In areas that did have sowing opportunities, ARV estimates that the WRSI has decreased slightly in the central parts of the country since last month, given below normal rains in eastern Senegal in August (see Map 5).

Niger (2014 agricultural season): The agricultural season in Niger spans from May to October. Like most of the sub-region Niger experienced mixed rainfall over the reporting month, according to satellite rainfall data from the ARC2 dataset which the country chose to use for the customisation of ARV. As a result in some areas the agricultural season shows a good progression compared to the long-term average from 1983 (Map 6). However most of these areas show a below normal progression against the more recent ten-year average and many other areas exist where the crop water requirements are currently not fully satisfied when compared to either the longer or recent term average, particularly those areas that experienced late planting. Rainfall in the coming month will be critical for the country. Note ARC2, which starts in 1983, shows a slightly better rainfall performance than the RFE2 dataset (shown in the previous section) for the season to date.

Mauritania (2014 agricultural season): The agricultural season in Mauritania started in July and extends until late November. The sowing window ended in mid-August and according to ARV, the rainfall threshold for sowing activities was reached in most agricultural areas of the country, with the exception of some localised areas along the southern coast. Given that poor rains to date led to late sowing in parts of the country, many areas are showing below average WRSI conditions. It is still too early to predict the outcome of the season, however, as with Niger, its performance will be determined by the rains received in agricultural areas over the coming months and will be monitored closely.

Kenya (2014/15 second rangeland season): In Kenya, the WRSI was customised to show rangeland developments in the country's bi-modal pastoralist areas. The second rangeland season in the country starts in August and lasts through the end of January. So far, the current



MAP 8: WRSI COMPARED TO NORMAL, KENYA (2014/15 SECOND RANGELAND SEASON)

rangeland season shows an above average development in the western parts of the country, where early rains were received. The rest of the country is currently slightly below normal (see Map 8). However, given that the bulk of the rains are usually received between October and December, there is still enough time for the season to develop normally.

AFFECTED POPULATIONS

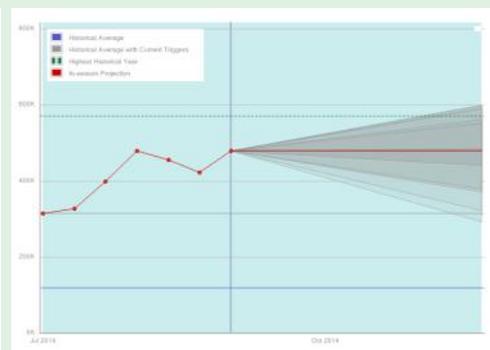
Based on the WRSI calculations discussed in the previous section of this bulletin, ARV estimates the **number of people potentially affected by drought** for each country participating in the insurance pool. As part of the in-country customisation process, **vulnerability profiles** are developed at sub-national levels for each country, which define the potential impact of a drought on the population living in a specific area. It is important to note that not all those affected by a drought might be in need of humanitarian assistance. Moreover, humanitarian needs are often driven by a variety of factors including but not limited to the weather. This bulletin reviews the affected population estimates and projections for countries insured and in-season.



GRAPH 1: IN-SEASON ESTIMATED POPULATION AFFECTED, SENEGAL (2014 AGRICULTURAL SEASON)



GRAPH 2¹⁾: IN-SEASON ESTIMATED POPULATION AFFECTED, NIGER (2014 AGRICULTURAL SEASON)



GRAPH 3: IN-SEASON ESTIMATED POPULATION AFFECTED, MAURITANIA (2014 AGRICULTURAL SEASON)

Senegal (2014 agricultural season): As discussed above and in the previous issue of the ARV Bulletin, the current season in Senegal is performing poorly. Large parts of the groundnut growing areas did not receive enough rains to allow for a start of sowing activities and it is unlikely that farmers will be able to produce substantial yields. As a consequence, ARV currently estimates that between 644,000 people (in case of good rains such as in 2009) and 1 million people (in case of poor rains such as in 2001) are likely to be affected by drought at the end of the season in December. The average projection for the end of the season is that around 793,000 people will be affected (see Graph 1). It is thus likely that the country will experience one of its worst seasons since 2001.

Niger (2014 agricultural season): Given that sowing has been possible across all agricultural areas in Niger, and given that the planted crops are still in the growing phase, the uncertainty about how the season will develop remains high. Good rains at the start of the month improved the outlook, however dry spells towards the end of August in some parts of the country eroded these improvements. Currently, ARV estimates that, on average, around 2.7 million people would be affected by drought at the end of the season across a range of possible rainfall scenarios for the remainder of the season. However, the projections range from as little as 617,000 people (in case of good rains such as in 2006) to nearly 5.2 million people (in case of poor rains such as in 2004). The average scenario of 2.7 million would mean that the agricultural season could be slightly worse than the seasons in 2006 and 2009, but far better than 2004, the worst drought in recent history.

Mauritania (2014 agricultural season): As in the case of Niger, the uncertainty about the development of the ongoing season in Mauritania remains high. Sowing has been possible in most areas according to ARV, and the performance of the rains during the remainder of the season will determine the outcome of the season. Currently, the projections range from around 293,000 drought-affected people at the end of the season in case of good rains such as in 2012, to around 600,000 people in case of bad rains (such as in 2007). On average ARV estimates that just under 480,000 people might be affected at the end of the agricultural campaign across a range of possible rainfall scenarios for the remainder of the season. This means that the country could face its third worst season since 2001, remaining however below the levels of 2002 and 2011, when nearly 600,000 people were affected.

¹⁾ **Note on Niger in-season estimated population affected graph:** The graph above was calculated using rainfall data from 2001 onwards, while during the customisation process Niger selected the ARC2 rainfall dataset which starts in 1983. The in-season estimates and projections thus differ from the desktop version of ARV.

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 (ARV)** software is the technical engine of ARC. It uses satellite-based rainfall information to estimate the cost of responding to a drought, which triggers a corresponding insurance pay-out.
- The **ARC Insurance Company Limited** is the commercial affiliate of the ARC Agency, which pools risk across the continent through issuing insurance policies to participating countries.

Kenya (2014/15 second rangeland season): Considering that the rangeland season in Kenya has just started very recently, it is currently too early to predict how it will develop. Nonetheless, the earlier than normal rains received in the western parts of the country has resulted in a slight downward trend in the projections of potentially affected people, which however is not yet indicative of the overall performance of the season.

RESPONSE COST ESTIMATION

In a fourth and final step, ARV 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**. Pay-outs 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 trigger specified in the insurance contracts. This bulletin will monitor the **progression of estimated response costs** for countries which are **in-season** and have **insured** their respective seasons. Currently, **five countries form the first ARC risk pool** (Kenya, Mauritania, Mozambique, Niger and Senegal). Four of these (Senegal, Niger, Mauritania and Kenya) have active rainy seasons during the reporting month:

Senegal (2014 agricultural season): Given that the rainfall threshold for the sowing of the reference crop (groundnut) was not reached in most of the groundnut growing areas in Senegal, the country is currently experiencing drought conditions in the west and north. ARV's end-of-season population affected estimate is converted into a modelled drought response cost based on the fixed per capita response cost selected by the country during the ARV customisation process. The modelled drought response cost at the end of the season determines whether the country is eligible for a pay-out by the ARC Insurance Company Ltd, depending on the risk transfer parameters selected by Senegal. Since 2001, the country would have been eligible for a pay-out in 2001, 2002 and 2011, due to the poor performance of these three seasons. Considering the poor rains received so far in Senegal, the ARC Secretariat has started discussions with the country in view of a potential pay-out.

Niger and Mauritania (2014 agricultural season): In both Niger and Mauritania, the projections for the end-of-season population affected estimates are still too wide to make a prediction on the potential cost of a drought response at the end of the season. Both countries have experienced several droughts since 2001. In Niger, the drought of 2004 would have triggered a pay-out given the risk transfer parameters selected by the country, while Mauritania would have been eligible for a pay-out in 2002 and 2011 given its current risk transfer parameter selection. Both countries will be monitored closely over the next month which, given the late start of the season in parts of these countries, will be critical in determining the rest of the season.

Kenya (2014/15 second rangeland season): As the second rangeland season in Kenya has just started, no projection can be made yet for the end-of-season response cost. Historically, the droughts of 2005/06 and 2010/11 would have triggered a pay-out by the ARC Insurance Company Ltd given its current selection of risk transfer parameters.

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