

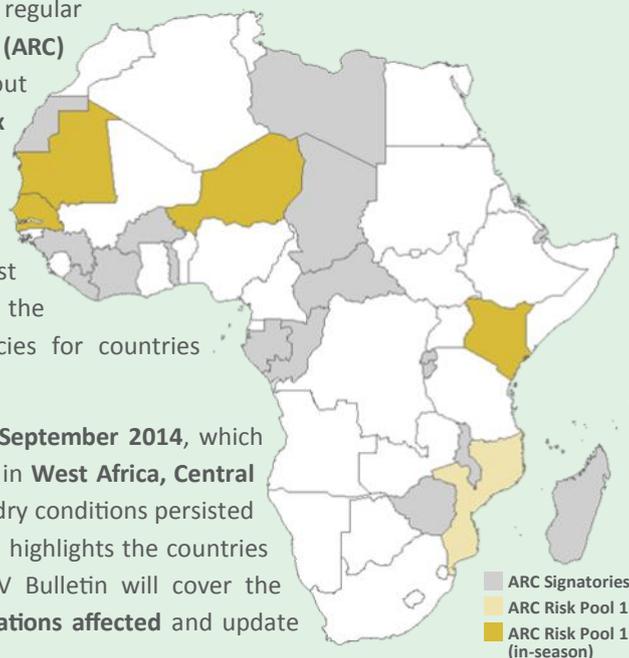
### Highlights:

- **Rainfall:**
  - Above normal rains in **West Africa**, with the exception of Senegal, Mauritania, Nigeria and Niger
  - Good rainfall performance in most of **Central and East Africa**
- **Drought:**
  - Drought conditions confirmed in parts of **Senegal**, due to poor rains during the ongoing season
  - **Niger and Mauritania** are also experiencing poor agricultural seasons due to the poor rainy season in West Africa, with a below average drought index in most agricultural areas
- **Potentially Affected People:**
  - ARV estimates that around 745,000 people might be affected in **Senegal** at the end of the ongoing season
  - In **Niger**, between 2.5 million and 2.9 million people might be affected solely by drought, depending on the performance of the rains in October 2014
  - **Mauritania** is expected to experience one of its worst seasons since 2001, with over 500,000 people directly affected by drought
- **Insurance:**
  - **Four ongoing seasons** (Senegal, Niger, Mauritania and Kenya) are **currently insured**
  - The ARC Secretariat has started discussions with **Senegal and Mauritania**, in view of a **potential pay-out**

### INTRODUCTION

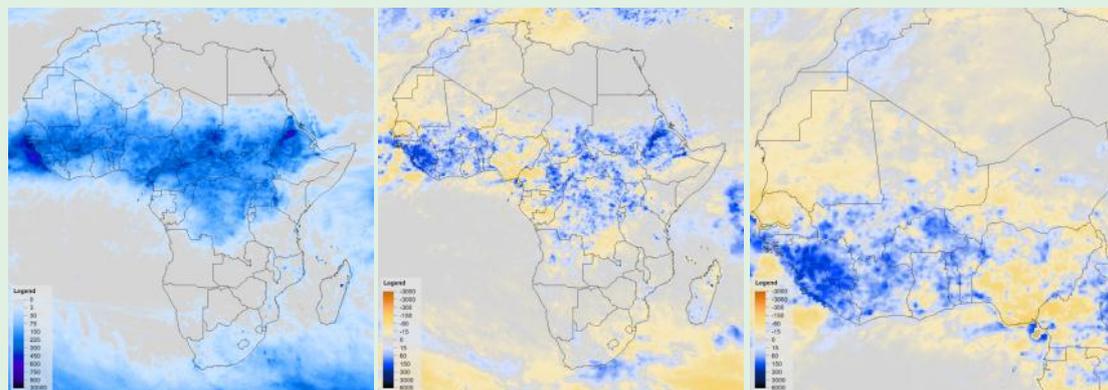
The *Africa RiskView (ARV) Bulletin* is a regular publication of the *African Risk Capacity (ARC) Agency*. It provides information about current **rainfall and drought index developments** as detected by ARV, and their potential **impact on vulnerable populations**. It also provides updates on **estimated 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 **September 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

As Map 2 illustrates, the rains in September 2014 were mainly concentrated in **West and Central Africa**, as well as **parts of East Africa** (particularly Sudan, South Sudan, Uganda and north-western Ethiopia). The southern parts of the continent remained mostly dry, which is in line with seasonal patterns.



MAP 2: CUMULATIVE RAINFALL, RFE2 (SEP 2014)

MAP 3: RAINFALL COMPARED TO NORMAL, RFE2 (SEP 2014)

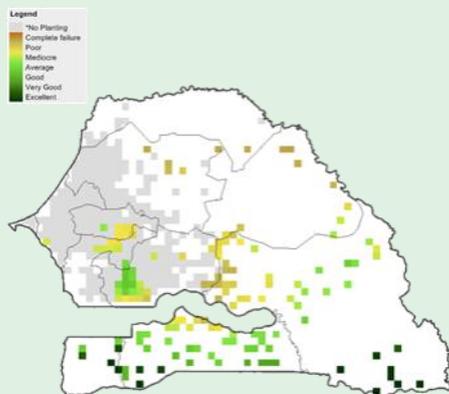
MAP 4: RAINFALL COMPARED TO NORMAL, WEST AFRICA, RFE2 (SEP 2014)

Wetter than normal conditions were recorded in most areas during the reporting month, with the exception of some countries in West Africa and coastal areas of Central Africa (see Map 3). In **West Africa**, most countries received above normal rains, particularly Guinea, Sierra Leone, Liberia, Côte d'Ivoire, Ghana, Burkina Faso and Mali. These good rains might compensate for the poor start of the rainy season in some areas. However, Senegal and Mauritania, as well as Niger and Nigeria, which had experienced poor rains over the last months, received below normal rains in September (see Map 4).

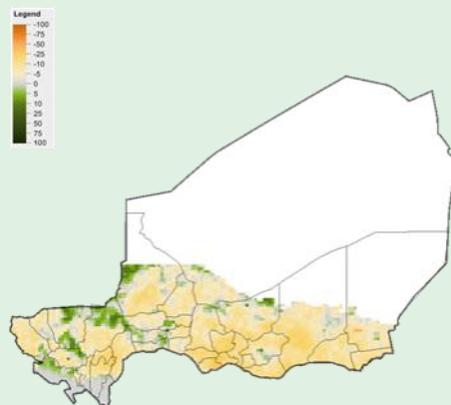
### DROUGHT

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

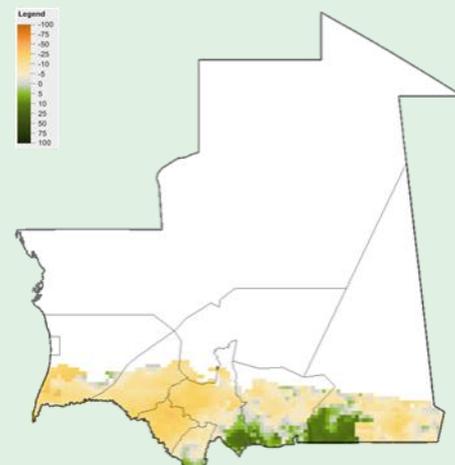
water it needs at different stages of its development. To maximise the accuracy of ARV, **countries intending to take out insurance customise the software's parameters** to reflect the realities on the ground. This issue of the ARV Bulletin will discuss insured countries that are currently in season.



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



**MAP 6: WRSI COMPARED TO NORMAL (ARC2, 2001-2013), NIGER (2014 AGRICULTURAL SEASON)**



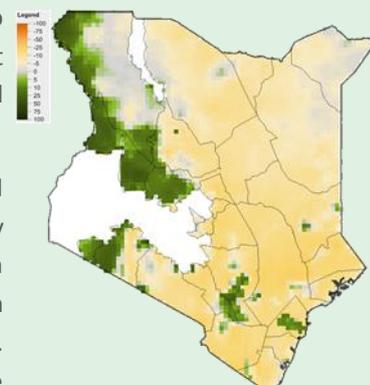
**MAP 7: WRSI COMPARED TO NORMAL (RFE2), MAURITANIA (2014 AGRICULTURAL SEASON)**

**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 not changed notably since August, despite poor rains in September (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 during the reporting month, according to satellite rainfall data from the ARC2 dataset which the country chose to use for the customisation of ARV. While the current WRSI is above the long-term average since 1983 in most agricultural areas of the country, this result is influenced by the impact of the very poor agricultural seasons in the 1980s and 1990s, which lower the average. Indeed, if the performance of the current season is compared to the short-term average since 2001, it appears that most areas of the country are experiencing a below normal agricultural season, with the exception of some areas along the border with Mali (see Map 6). Good rains in October might improve this situation slightly, and the most affected areas of Niger already received better than normal rains during the first dekad of the month (1-10 October).

**Mauritania (2014 agricultural season):** The agricultural season in Mauritania started in July and extends until late November. While the rains received in the country were slightly better than in neighbouring Senegal, Mauritania also experienced delayed start and is now experiencing a poor progression of the agricultural season. Most agricultural areas have a below average WRSI, with the exception of some parts of Assaba, Hodh El Gharbi and Hodh Ech Chargui regions in the country's south-east.

**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 rangeland season shows an above average development in the western parts of the country, where early rains were received in August and September. 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.

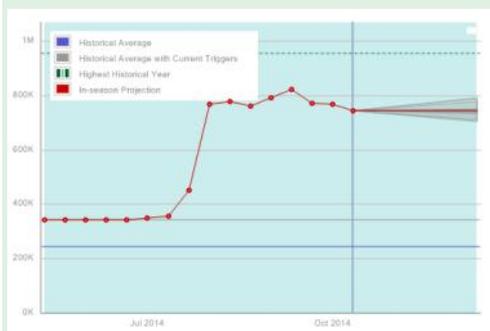


**MAP 8: WRSI COMPARED TO NORMAL, KENYA (2014/15 SECOND RANGELAND SEASON)**

### 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 (AS OF 11 OCT 2014), SENEGAL (2014 AGRICULTURAL SEASON)**



**GRAPH 2 <sup>1)</sup>: IN-SEASON ESTIMATED POPULATION AFFECTED (AS OF 11 OCT 2014), NIGER (2014 AGRICULTURAL SEASON)**



**GRAPH 3: IN-SEASON ESTIMATED POPULATION AFFECTED (AS OF 11 OCT 2014), MAURITANIA (2014 AGRICULTURAL SEASON)**

**Senegal (2014 agricultural season):** As discussed above and in previous issues of the ARV Bulletin, Senegal is experiencing a below normal agricultural season, given that most groundnut cultivating areas did not receive enough rains to allow for a timely start of sowing. It is thus unlikely that farmers will be able to produce substantial yields in these areas. ARV currently estimates that around 745,000 people might be directly affected by a drought at the end of the ongoing season in the groundnut cultivating areas in Senegal. This estimate is based on a normal scenario of rainfall development between now and the end of the season in December. However, the projections vary depending on the performance of the rains during this period. In case of a wetter than normal end of the season (such as in 2003), the projection decreases to around 706,000 people, while in case of a dry October to December period, over 793,000 people might be affected (see Graph 1). Senegal will thus experience one of its worst seasons since 2001, but it is unlikely that the levels of the worst season on record, 2002, will be reached. It is important to note that these estimates only take into account the population that might be directly affected by a drought in the areas defined by the country during the customisation of ARV. The total number of food insecure people is likely to be higher, as the effect of the drought could be compounded by other factors and chronic vulnerabilities.

**Niger (2014 agricultural season):** Following good rains in the first dekad of October (1-10 October), the current end-of-season projection for Niger has decreased from over 3.5 million people to around 2.8 million people. As the end of the agricultural season approaches, the difference between the highest and lowest projections is narrowing. Depending on the performance of the rains during the last two dekads of October (11-31 October), the number of people directly affected by drought in the country could vary between 2.5 million people (in case of above normal rains in October, such as in 2002) to nearly 2.9 million people, in case dry conditions should return until the end of the season as if the rains were like those in 2007 (see Graph 2). It is expected that Niger will experience its second worst season since 2001, and the levels of the 2004 drought, when around 2.8 million people were affected, might be reached according to ARV. As with Senegal, given the relative severity of this drought, the total number of food insecure people could be higher if other factors and chronic vulnerabilities are taken into account.

**Mauritania (2014 agricultural season):** As in the case of Niger, the uncertainty about the development of the ongoing season in Mauritania is reducing as the season progresses. Currently around 550,000 people are estimated to be directly affected by a drought at the end of the ongoing agricultural season, assuming a normal end of season scenario between now and late November. In case of a dry spell during the last 40 days of the season (such as in 2011), over 560,000 people are likely to be affected, while in case of wet conditions in the coming weeks (similarly to 2010), this projection is likely to decrease to around 518,000 people (see Graph 3). Regardless of the rains however, Mauritania is expected to experience one of its worst agricultural seasons since 2001, comparable to the droughts in 2002 and 2011, when around 570,000 people were affected according to ARV.

<sup>1)</sup> **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.

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**Kenya (2014/15 second rangeland season):** Considering that the rangeland season in Kenya has just started very recently, it is currently too early to forecast how it will develop. Nonetheless, the earlier than normal rains received in the western parts of the country have 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):** As discussed in previous issues of the ARV Bulletin, Senegal is currently experiencing drought conditions in the west and north. The modelled drought response cost, which are based on the fixed per capita response cost selected by the country during the ARV customisation process, determines whether the country is eligible for a pay-out by the ARC Insurance Company Ltd, depending on the risk transfer parameters selected. Due to the poor rains received so far in Senegal and the high associated drought response cost, response cost, which it is known will exceed the country attachment, the ARC Secretariat has started discussions with the country in view of a pay-out.

**Niger (2014 agricultural season):** While Niger is experiencing a poor agricultural season, with modelled drought response costs that are higher than for the droughts in 2006, 2009 and 2011, it is too early to determine whether the country will be eligible for a pay-out by the ARC Insurance Company Ltd. Good rains, such as the rains received in the first dekad of October, might lead to a reduction in the number of affected populations between now and the end of the season as late planted crops receive much needed rain. However, even if the rains during the rest of the season perform well, the effect will only marginally reduce the estimated number of drought affected populations. The impact of this below average season on Niger's vulnerable populations, in combination with other potential food security risk factors, is highly concerning.

**Mauritania (2014 agricultural season):** Similarly to Senegal, Mauritania is on track to experience one of its worst agricultural seasons since 2001 unless the rains improve dramatically for the rest of October to satisfy the late planted crops. Such good rains in October have not been observed since 2001, and the first dekad of October was below average in most parts of the country. However, the final drought response cost, which determines whether the country is eligible for a pay-out by the ARC Insurance Company Ltd, will only be available at the end of the season in mid-November 2014. Historically, the drought scenarios of 2002 and 2011 would have triggered a pay-out in Mauritania.

**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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