

Highlights:

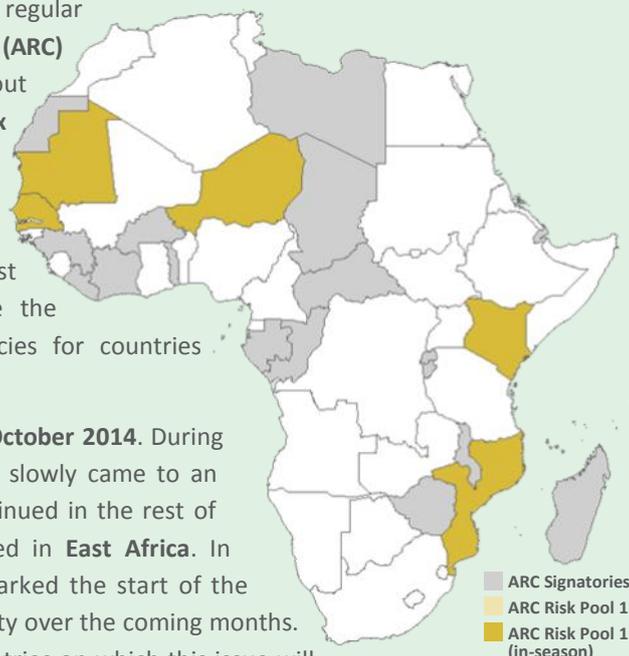
- **Rainfall:**
 - Mixed rainfall performance in **West Africa**
 - Above normal rains in **East Africa**, with the exception of eastern Kenya and southern Somalia
- **Drought:**
 - Drought conditions confirmed in parts of **Senegal** and below normal agricultural outputs are expected in **Mauritania**
 - **Niger's** season ended with a below average drought index in most agricultural areas
- **Potentially Affected People:**
 - Around 780,000 people in **Senegal** and 560,000 people in **Mauritania** are expected to be directly affected by drought at the end of the ongoing seasons
 - Nearly **2.9 million people** are estimated to be **directly affected by a drought in Niger** after the end of the 2014 agricultural season
- **Insurance:**
 - **Five ongoing seasons** (Senegal, Niger, Mauritania, Kenya and Mozambique) are **included in the first ARC risk pool**
 - **Niger** is eligible for a pay-out by the ARC Insurance Company Ltd due to the high modelled drought response cost for 2014
 - The ARC Secretariat has also started discussions with **Senegal and Mauritania**, in view of **potential pay-outs**

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.

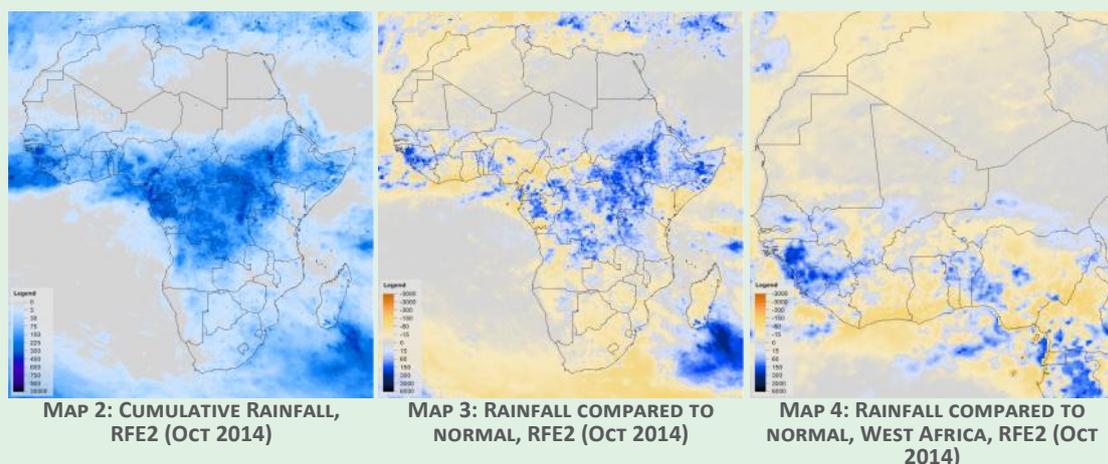
This month's issue covers the month of **October 2014**. During the reporting month, the seasonal rains slowly came to an end in the **Sahel** region, while they continued in the rest of **West and Central Africa**, and intensified in **East Africa**. In **Southern Africa**, the end of October marked the start of the rainy season, which will pick up in intensity over the coming months.

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

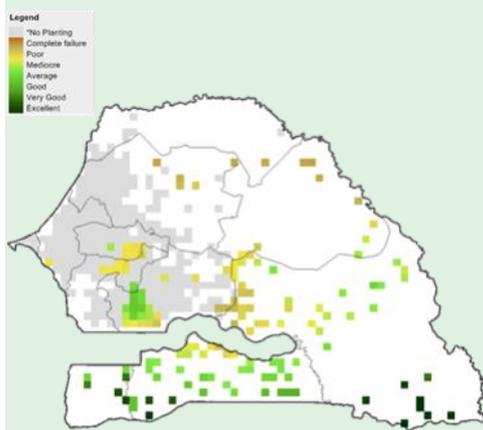
During the reporting month, seasonal rains were received in the southern parts of **West Africa**, across **Central Africa** and in parts of **East Africa** (South Sudan, Uganda, Ethiopia, Somalia and Kenya), as Map 2 illustrates. The **Sahel** region received only light rains, as its rainy season came to an end in most countries. In **Southern Africa**, light rains were received towards the end of the month, particularly in Madagascar, Mozambique, South Africa and Zimbabwe.



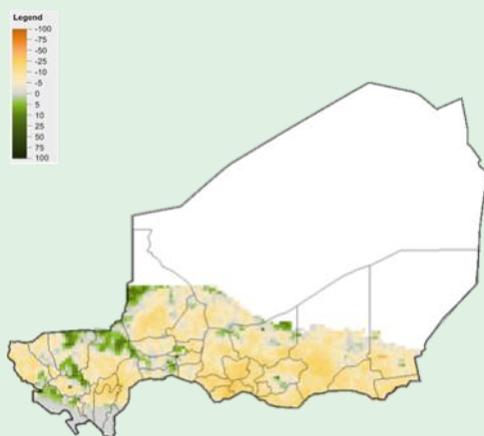
Compared to the long-term average (2001-2013), the rainfall performance was mixed across the continent, as Map 3 highlights. In **West Africa**, the rains were above normal in parts of Senegal, Guinea, Sierra Leone and Liberia, while drier than normal conditions were registered in Cote d'Ivoire, Ghana and parts of Nigeria (see Map 4). In **East Africa**, below average rains were received in central and eastern Kenya and southern Somalia, while the rest of the region received above normal rains. Finally, the rainy season in **Southern Africa** experienced a below average start, with drier than normal conditions throughout the region in October, but it is still early in the season.

DROUGHT

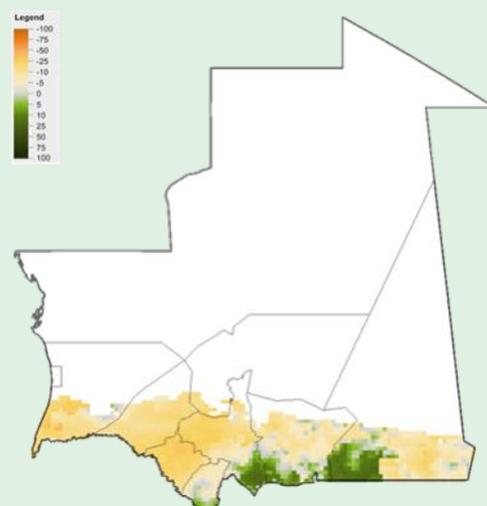
ARV uses the **Water Requirements Satisfaction Index (WRSI)** as an **indicator for drought**. The WRSI is an index developed by the *Food and Agriculture Organisation of the United Nations (FAO)*, which, based on satellite rainfall estimates, calculates whether a particular crop is getting the amount 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)



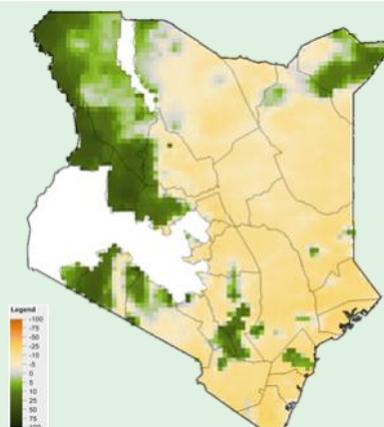
MAP 7: WRSI COMPARED TO NORMAL (RFE2), MAURITANIA (2014 AGRICULTURAL SEASON)

Senegal (2014 agricultural season): A poor temporal and spatial distribution of rains during the ongoing agricultural season in Senegal, which extends from mid-May to mid-December, have not allowed for a timely start of sowing activities for the reference crop (groundnut) selected by the country during the ARV customisation process. ARV thus assumes that planting did not occur in these areas, which are highlighted in grey in Map 5. This situation is indicative of a widespread drought in Senegal's central and northern agricultural areas, and it is unlikely that farmers will be able to produce substantial yields, even if they were indeed able to plant their groundnut crop. These drought conditions have been verified by the in-country ARC Technical Working Group. In the rest of the country, where the cultivation of groundnut is less widespread, the conditions for sowing and development of groundnut were met. In these regions, the WRSI has not changed significantly over the last months, and shows an above normal development in southern Senegal, while it remains below average in the central parts of the country.

Niger (2014 agricultural season): The agricultural season in Niger came to an end in October. ARV indicates that with the exception of some parts of western and south-western Niger, most agricultural areas of the country have experienced a season that is below the medium-term average (2001-2013), as Map 6 indicates. Despite a normal seasonal rainfall total overall, some areas suffered from a poor start and then a poor temporal and spatial distribution of rains, including during the second half of the season (Aug-Oct). In particular, regions in south-central Niger (Madarounfa, Aguié, Mayahi) and in the east of the country (Gouré, Diffa, Nguigmi, Mainé Soroa) have recorded a below normal WRSI.

Mauritania (2014 agricultural season): The ongoing agricultural season in Mauritania will extend until late November. Similarly to neighbouring Senegal, Mauritania has experienced a late start and poor seasonal rains, and the current WRSI is below normal in most areas, with the exception of some areas in the south-central part of the country (southern Assaba, Hodh El Gharbi and western Hodh Ech Chargui regions). ARV also estimates that planting was not possible in some areas along the coast, where the rains received during the sowing window defined by the country were not sufficient to allow for a timely start of agricultural activities. The rains between now and the end of the season in November might ease the situation slightly for late-planted crops, however the agricultural season can be expected to perform below average overall.

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 lasts from August to January, however the bulk of seasonal rains are received in the October to December period. So far, the current season closely follows rainfall patterns observed since the start of the season. In the western parts of the country, which received early seasonal rains in August and September, the WRSI is currently above average. However, in the central and eastern parts of Kenya, the drought index remains below average, due to drier than normal conditions in October, which might indicate a late start of the season in these areas (see Map 8). Nonetheless, normal rains over the coming months could provide relief to the current dry conditions in these pastoral areas.

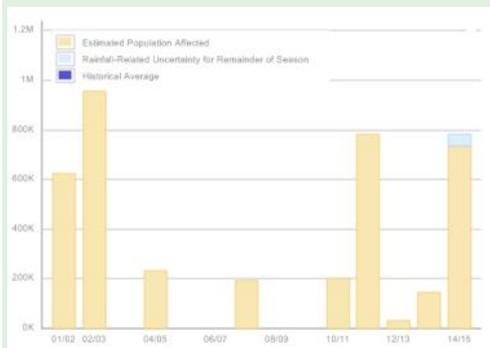


MAP 8: WRSI COMPARED TO NORMAL, KENYA (2014/15 SECOND RANGELAND SEASON)

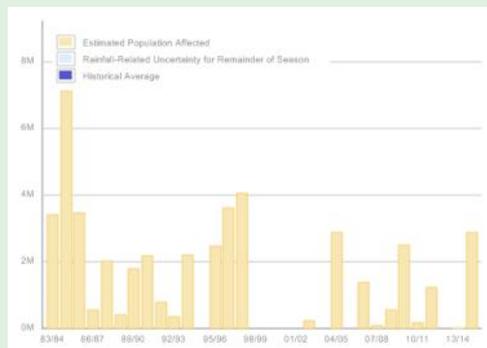
Mozambique (2014/15 agricultural season): The agricultural season in Mozambique started in late October 2014, and will last through mid-May 2015. Sowing usually occurs between October and the end of January, which means the rains over the coming months will be a key factor in determining the success of the agricultural campaign. The progression of the season will be monitored closely in future issues of the ARV Bulletin.

AFFECTED POPULATIONS

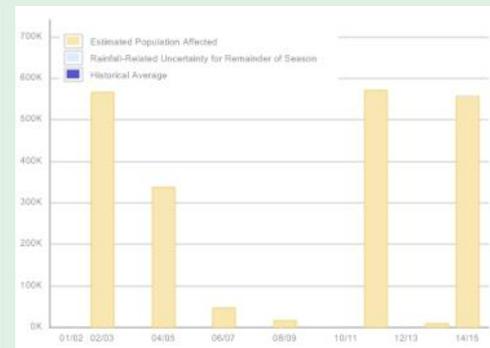
Based on the WRSI calculations discussed in the previous section of this bulletin, ARV estimates the **number of people potentially affected by drought** for each country participating in the insurance pool. As part of the in-country customisation process, **vulnerability profiles** are developed at 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: ANNUAL ESTIMATED POPULATION AFFECTED (AS OF 1 NOV 2014), SENEGAL (2001-2014)



GRAPH 2 ¹⁾: ANNUAL ESTIMATED POPULATION AFFECTED (AS OF 1 NOV 2014), NIGER (1983-2014)



GRAPH 3: ANNUAL ESTIMATED POPULATION AFFECTED (AS OF 1 NOV 2014), MAURITANIA (2001-2014)

Senegal (2014 agricultural season): As discussed above and in previous issues of the ARV Bulletin, Senegal is experiencing a poor agricultural season, given that below normal rains during the sowing period did not allow for a timely start of agricultural activities in most areas of the country. As a result, it is unlikely that farmers will be able to produce substantial yields. ARV's current end-of-season projection for Senegal indicates that around 780,000 people will be affected at the end of the ongoing season in December (see Graph 1). The rains during the remainder of the season are not expected to have a major impact on these estimates. The direct impact of this year's season is thus comparable with the drought in 2011, however it is not expected that the levels of the 2002 drought, which directly affected over 950,000 people, 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, including recovery from the 2011 drought, and chronic vulnerabilities.

¹⁾ **Note on Niger in-season estimated population affected graph:** The country selected the ARC2 dataset, which starts in 1983, as the most representative dataset during the customisation process. As a result, the affected population estimates start in 1983, against 2001 for countries that use RFE2 as rainfall dataset.

Niger (2014 agricultural season): At the end of the agricultural season in Niger, ARV estimates that around 2.88 million people are affected by drought in the country, primarily in the central south and in the east. This makes 2014 one of the worst drought years since 2001, and is comparable to the drought in 2004 which ARV estimates, had it happened this year, would have directly affected 2.9 million people (see Graph 2). Nonetheless, the magnitude of this year's drought is nowhere close to the droughts of the 1980's and 1990's, which would affect up to 7 million people if they occurred today. However, like in the case of Senegal, it is important to keep in mind that other factors can affect the food security of Niger's population beyond simply rainfall, and that the total number of food insecure people might be higher or lower than the figure of people directly affected by the drought as estimated by ARV.

Mauritania (2014 agricultural season): As the end of the agricultural season in Mauritania approaches, the end-of-season projections for the country narrow. ARV currently estimates that at the end of the ongoing season, nearly 560,000 people might be directly affected by a drought in the country's agricultural areas. As in the case of Senegal, the rains between now and the end of the season in November are unlikely to have a major impact on this projection. Compared to previous years, the current drought is comparable to 2011 and 2002. In both cases, around 570,000 people were directly affected according to ARV.

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. [FEWS NET's Food Security Outlook for East Africa](#) suggests that most pastoral areas in Kenya will benefit from above normal rains this year, however parts of central Kenya might suffer from an erratic distribution of rains, particularly parts of the Rift Valley, as well as north-western and southern Kenya.

Mozambique (2014/15 agricultural season): As mentioned above, the agricultural season in Mozambique has just started, which means it is too early to forecast how it will develop. Historically, the country has experienced several mild drought events since 2001, with one more severe drought in 2004/05, when nearly 1.2 million people were affected by a drought.

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 threshold 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). All five of these (Senegal, Niger, Mauritania, Kenya and Mozambique) 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 some agricultural areas. The modelled drought response cost, which is 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, which it is known will exceed the country attachment, the ARC Secretariat has started discussions with the country in view of a known pay-out to be made after the end of the growing season.

Niger (2014 agricultural season): While the rainy season in Niger performed better than the season in Senegal, the country suffers from a below normal drought index, as discussed in the previous sections of this bulletin. Given that the estimated response cost is above the country attachment level, **Niger will be eligible for a pay-out by the ARC Insurance Company Ltd**, which will occur as soon as the Final Implementation Plan, which the country is formulating with support from the ARC Secretariat, is approved by the ARC Governing Board. The Final Implementation Plan will detail the activities that the government will implement together with relevant stakeholders in order to minimise the impact of the drought in the affected areas and maximise the value of early ARC funds. Updates on the drought response will be provided in the upcoming issues of the ARV Bulletin, as well as through Special Reports.

Mauritania (2014 agricultural season): Similarly to Senegal, Mauritania is on track to experience one of its worst agricultural seasons since 2001. The rains during the remaining two dekads of November (1-20 November) are unlikely to have a major impact on the outcome of the season. It is thus highly likely that the estimated response cost will be higher than the country attachment, as in the cases of Senegal and Niger. This will most likely trigger a pay-out by the ARC Insurance Company Ltd, and underscores the poor

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.

performance of this year's rainy season in West Africa. Like in Senegal and Niger, the ARC Secretariat has started discussions with the country in view of a likely payout, and to facilitate the coordination of the drought response.

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 the country's current selection of risk transfer parameters.

Mozambique (2014/15 agricultural season): As in the case of Kenya, it is currently too early to predict how the agricultural season will perform in Mozambique. Historically, the poor performance of the 2004/05 season, when nearly 1.2 million people were affected by drought in the country, would have triggered a pay-out by the ARC Insurance Company Ltd.

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