The Africa RiskView Bulletin is a monthly publication by the African Risk Capacity (ARC). 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. ARC relies on Africa RiskView, a drought modelling platform that uses satellite-based rainfall information to estimate the costs of responding to a drought. These modelled response costs are the underlying basis of the insurance policies issued by the ARC Insurance Company Limited, the financial affiliate of the ARC Agency, which pools risk across the continent.

Rainfall

During the month of October 2016, rainfall was mainly concentrated over the central parts of the continent, as well as over West Africa, where the season is coming to an end, and East Africa, where the 2016 short rains season was expected to intensify. Compared to the 2001-2015 average, satellite rainfall estimates suggest that drier than normal conditions prevailed in most areas, with the exception of parts of Central Africa (Central African Republic, Republic of Congo, north-western DR Congo and Cameroon), coastal areas of West Africa (Guinea, Sierra Leone, Liberia, Côte d’Ivoire, southern Ghana and southern Nigeria) as well as north-western East Africa (north-western Ethiopia, Sudan and South Sudan).

Severe rainfall deficits were recorded in parts of the Sahel (Senegal, Burkina Faso and Mali) and in East Africa. In eastern Kenya, eastern Ethiopia and Somalia, the below normal rains in October point towards a significantly delayed 2016 long rains season, which is particularly worrying considering the poor performance of the 2016 long rains in parts of the region.

Drought

Burkina Faso: The agricultural season in Burkina Faso extends until early December in some areas. Africa RiskView’s estimates indicate that the performance of the 2016 season should be in line with normal conditions, as defined by the country during the customisation of the model (benchmark of the previous 5 years). While some areas in south-western, south-eastern and north-eastern Burkina Faso are likely to experience slightly below normal conditions, the overall performance of the season can be expected to be good. These estimates are in line with initial assessments conducted by the country, which indicate that average to good crop outcomes are expected.

The Gambia: In The Gambia, which uses groundnut as its reference crop in Africa RiskView, the agricultural season is expected to end in mid-November 2016. The model’s estimates suggest that...
the crop water requirements should be fully satisfied in most areas at the end of the season, particularly in western Gambia. The current end-of-season WRSI projections are in line with normal conditions, which the in-country technical working group defined as the median of the previous 5 years.

**Mali:** The 2016 agricultural season in Mali ended in October. According to Africa RiskView, the water requirements of the reference crop (maize) were fully satisfied in the southern parts of the country due to the good performance of the rains, with a gradual decrease in WRSI values towards the more arid northern regions. Compared to the benchmark, which the country set as the 2015 agricultural season, normal conditions prevailed in most of the country, with pockets of below normal WRSI values in central Mali (southern Segou, eastern Koulikoro, north-western Sikasso and parts of Mopti regions). Overall however, a good seasonal performance can be expected, considering the good performance of the 2015 season. A more in-depth analysis on the performance of the 2016 season in Mali will be provided in the upcoming Africa RiskView End-of-Season Report.

**Senegal:** As in neighbouring Gambia, Senegal uses groundnut as reference crop in Africa RiskView, given the importance of this cash crop for food security in the country. The season lasts from May to early November. Due to a delayed season in 2016, Africa RiskView estimates that planting conditions were not reached in large parts of central Senegal. Despite above average rainfall between late July and September, the end-of-season WRSI projections for these areas are thus well below the benchmark selected by the country (median of previous 5 years). Normal conditions
prevail in the rest of the country. It is important to note that during the review of the Africa RiskView customisation for the 2016/17 ARC Risk Pool, the country opted for very stringent sowing criteria. Had the country kept the previously used sowing criteria, Africa RiskView would depict a more favourable situation for the central parts of the country, which means that the rains in the latter part of the season were favourable to crop development. Nonetheless some areas would still be affected by below normal WRSI values, particularly Kaffrine region.

**Affected Populations**

**Burkina Faso:** Despite the overall good performance of the season in Burkina Faso, Africa RiskView estimates that around 260,000 people might be directly affected by the impact of dry conditions in the south-western parts of the country (Cascades and Sud-Ouest regions). Depending on the performance of the rains between now and the end of the season, this number could develop in a range between 130,000 people (in case of good rains) and 315,000 people (in case of poor rains). The current projection remains well below the modelled historical average of around 600,000 people affected by drought. It is important to note that these estimates do not take into account non-drought related factors to food insecurity.

**The Gambia:** Given that Africa RiskView’s estimates for the 2016 agricultural season in The Gambia suggest an above average WRSI is likely to prevail throughout the country, the model currently estimates that no people will be affected by drought at the end of the season in November 2016. The modelled historical average is around 100,000 people.

**Mali:** At the end of the 2016 agricultural season, Africa RiskView estimates that around 530,000 people in Mali are affected by the impact of dry conditions in southern Segou and northern Sikasso regions in central Mali. This can be attributed to the localised pockets of below average WRSI values discussed above. The estimate remains below the modelled historical average of around 1 million people affected by drought in the country.

**Senegal:** As discussed above, Africa RiskView estimates that in some areas of central Senegal planting conditions were not met. In these areas, the model estimates that around 730,000 people will be affected at the end of the season, which would be above the modelled historical average of around 360,000 people. Despite the relatively high number of people affected, the modelled drought impact is not as severe as the 2011 and 2014 droughts, of which the latter led to a payout from ARC Ltd during the 2014/15 ARC Risk Pool.

**ARC Risk Pool**

Currently, seven countries form the 2016/17 ARC Risk Pool, namely Burkina Faso, The Gambia, Madagascar, Mali, Mauritania, Niger and Senegal. In Mali, the season just ended, however the trigger for a payout from ARC Ltd was not reached, due to the overall good performance of the 2016 agricultural season as modelled in Africa RiskView. In the other insured countries in West Africa, payouts are currently unlikely in Burkina Faso and The Gambia, given the projected outcomes of the seasons, which are expected to perform well. Finally, in Senegal, despite the higher than average number of people affected as modelled by Africa RiskView, a payout is currently unlikely based on the risk transfer parameters selected by the country, with the drought impact of this season falling within the country’s retention layer.

ARC has been working with countries throughout the continent on drought insurance since 2014/15 and is developing additional risk insurance products for floods and tropical cyclones together with its Member States. Countries interested in joining the ARC Risk Pool usually go through a year-long engagement process which involves the customisation of Africa RiskView by in-country technical experts with support from the ARC Secretariat, the definition of an Operations Plans that outlines the assistance to be provided to vulnerable populations in the case of a payout by the ARC Insurance Company Limited, as well as the creation of structures and processes that allow for the quick disbursement of the payouts and the activation of the pre-defined Operation Plans.

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1) Some of these countries are still in the process of defining their participation in the ARC Risk Pool.
Africa RiskCapacity (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.

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

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.

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.

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