This Africa RiskView End of Season Report is a publication by the African Risk Capacity (ARC). The report discusses Africa RiskView’s estimates of rainfall, drought and population 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 End of Season reports are also being continuously refined with a view to providing early warning to ARC member countries.

Rainfall
The rainy season in Burkina Faso starts from early June and end in early December. The 2017 season was characterised by the expected high variability of cumulative rainfall received across the different regions of the country. The rainfall received in the country was generally good, with the lowest rains received in Noumbiel, Oudalan, Sanmatenga and Seno regions ranging from 500 to 600 mm. Most parts of the country received rains between 700 and 800 mm. Only Tapoa in the south-western part of the country received rainfall above 800 mm. Compared to the long-term average (1983-2015), the cumulative seasonal rains were normal to above normal in most parts of the country. With localised areas in the central and south-western Burkina Faso receiving below normal cumulative seasonal rains especially in the Bougouriba, Houet, Ioba, Kadiogo, Noumbiel, Oubritenga, Poni Sissili, Tuy and Ziro regions. Loroum in the northern part of the country received the highest cumulative seasonal rains compared to the long-term average of about 120%. Regarding the spatial and temporal distribution of the seasonal rains in 2017, an analysis of dekadal (10-day) rainfall at the regional level suggests that the season started early with normal to above normal rainfall in June, in most parts of Burkina Faso. This was followed by a normal progression of the rains throughout the country. However, the rains were erratic and below normal throughout the country in mid-July, mid-August, early September and throughout October.

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Drought
The in-country Technical Working Group (TWG) customised Africa RiskView to model the impact of drought on sorghum, one of the main staple crops in Burkina Faso. Based on the parameters chosen during the customisation of the model, Africa RiskView models all possible planting opportunities during the planting window (June - July), and chooses the average WRSI value at the end of the season. In 2017, Africa RiskView estimates that in most areas, the planting conditions were reached throughout the planting window (June - July). In Oudalan planting didn’t occur only in early and late June, in Seno planting was possible throughout the planting window expect in late June, in Noumbiel planting didn’t occur in early and mid-July, on the other hand in Poni planting didn’t only occur in early July. While in Gnagna, Namentenga and Yagha planting was occurred throughout the planting window expect in mid-July. The end-of-season WRSI values highlight a high degree of variability across the country, which is in line with normal rainfall patterns in the country. Average to good WRSI values were recorded in most parts of Burkina Faso except for localised areas in central-west and further northern part of the country. Compared to the benchmark chosen by the country as an indicator of normal conditions (2-year average), normal WRSI conditions prevailed throughout the country. Only parts in central and south-western Burkina Faso experienced below normal WRSI values, and the water requirements of the reference crop (sorghum) were fully satisfied at the end of the 2017 agricultural season.
Information on agricultural production used for the 2017 Cadre Harmonisé exercise suggests that the 2017 agricultural season experienced a normal to above normal performance. Nonetheless, localised production shortfalls were reported due to poor rains. Overall, an 5.54% increase in crop production is expected compared to 2016, at the national level.

**Affected Populations**

Based on the in-country customisation of Africa RiskView, around 5.9 million people in Burkina Faso are vulnerable to drought. At the end of the 2017 agricultural season, Africa RiskView estimates that around 577,256 people were directly affected by drought conditions in central and south-western Burkina Faso. The vast majority of drought affected people were in the provinces of Houet (100,578 people), Ioba (86,273), Sanmaten (67,578), Comoe (60,851), Bougouriba (26,123), Leraba (22,312), Kenedougou (22,280), Noumbiel (20,753) and Bazega (15,878). However, in Bale, Bam, Kadiogho, Koulpelogo, Kouritenga, Nahouri, Oubritenga, Sissili, Sourou, Tuy, Yatenga, Ziro and Zoundweogo provinces less than 15,000 people were estimated to be affected by drought conditions at the end of the 2017 season. Compared to historical drought years modelled by Africa RiskView, it appears that the total number of people affected by drought in Burkina Faso in 2017 was well below the historical average of around 800,997 people. The major droughts in Burkina Faso occurred in 2004, 2007, and as more recently in 2011, according to Africa RiskView. The 2017 Cadre Harmonisé exercises, concluded in October 2017, found that 132,899 people were severely food insecure (Phase 3 or worse) at the time of the analysis. This figure was projected to increase to around 620,394 people for the peak lean season. These populations are concentrated mainly in the Sahel (32%), North Central (25%), North (17%) and Central West (10%) regions.

**ARC Risk Pool**

Burkina Faso has been a member of the ARC Risk Pool since the first pool in 2015/16. In that year, during the current pool, no payout was triggered from ARC Ltd, as the attachment level selected by the Government of Burkina Faso (the equivalent of around 1,125,000 drought affected people as modelled by Africa RiskView) was not reached. The in-country Technical Working Group with support from the ARC Secretariat is currently reviewing the customisation of Africa RiskView in view of Burkina Faso’s participation in the 2018/19 ARC Risk Pool. The exercise aims at reviewing the drought index parameters used by the model, as well as updating input data such as the vulnerability profile and poverty information used by Africa RiskView. Potential improvements to the model will help ensure that drought risks are accurately reproduced for drought monitoring and insurance coverage and that the modelling continues to evolve as new information is reported and gathered.
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.

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