



## Rainfall onset no longer a starting signal for planting crops?

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Adjusting the farming practices in West Africa (WA) to changing climate conditions is of utmost importance when considering that a quarter of the population in Sub-Saharan Africa lacks access to sufficient food (FAO et al., 2019). Climate change-induced effects such as delays in the start of the rainy season or intermittent dry spells at the beginning of the season also known as false start have devastating consequences on crop response and compromise food security in the region (Laux et al., 2008). Failing to plant at the right moment has led farmers to experience water stresses and yield reduction/failure at the end of the season.

To address the issue, several definitions have been proposed in order to identify a safe planting date. However, some of the assumptions on which the definitions were built are no longer valid under the current climate conditions leading to frequent cases of crop failure. In this study, we evaluated the most commonly used definition called the local onset, which is defined as one or two consecutive rainy days followed by 30 days without dry spells of 7 days or more (Marteau et al., 2009). We used a set of stations from the TAHMO network (<https://tahmo.org/>) across the Semi-Arid Zone of WA to compute the local onset date. This onset date is then compared to the optimal sowing date derived from computed yields based on local rainfall patterns measured by the TAHMO stations, using the crop model AquaCrop (<https://www.fao.org/aquacrop/en/>).

The results indicate that the local onset generally leads to planting early in the season while that period is risky and characterized by intermittent dry spells. On the contrary, delaying the planting until later in the season reduces largely the risk of harvest failure and higher yield can be achieved. These outcomes highlight the necessity to update the coupling between rainfall onset detection and planting date, which will contribute to improving food security.

### References:

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