

## [P2] Farming System

Thu. Sep 9, 2021 12:15 PM - 2:00 PM Room 2 (Poster) (Farming System)

12:15 PM - 1:00 PM

### [P2-11] Climate Impact on Yield and Cultivation Area of Rainfed Rice in Central Benin, West Africa

\*Nominated for Presentation Awards

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Demands for rice have been increasing in West Africa, however, the majority of rice is cultivated in the rainfed ecology, resulting in low yields. The changes of rice yield and production area in rainfed culture were surveyed in the town of Glazoue in central Benin, where rice is commonly cultivated in both upland and lowland conditions. According to the survey conducted during 2014-2016 with 12 farmers, rice is grown between June-November, after preceding crops such as cowpea and maize which are grown between April-July. Rice yields decreased in accordance to low rainfall, with 1.8 t ha<sup>-1</sup> under 866 mm in 2014, 1.1 t ha<sup>-1</sup> under 552 mm in 2013 and 0.3 t ha<sup>-1</sup> under 430 mm in 2015. Rice cultivation area of the farmers decreased 90% from 1.15 ha<sup>-1</sup> in 2013 to 0.12 ha<sup>-1</sup> in 2016. Farmers with less than 2 t ha<sup>-1</sup> in 2014 (LYF) greatly decreased their rice fields in 2015 and halted rice cultivation in 2016, whereas, farmers with more than 2 t ha<sup>-1</sup> in 2014 (HYF) did not greatly decrease their rice fields in 2015 and continued rice in 2016. LYF tended to grow rice on slopes where water retention was low, resulting in delayed sowing of 13 days and significantly lower yields. These results suggested that the minimum yield of 2 t ha<sup>-1</sup> under adequate seasonal rainfall was regarded as the criteria for stable and continued rice production, regardless of suboptimal conditions in other years. Therefore, it is necessary for farmers to carefully select fields that support this level of production.