

Resilience and Sustainability of Sorghum productivity in the face of Climate Change: Case of West Africa

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Sorghum is the 5th most important cereal crop globally and Africa's second most important grain crop. West Africa contributes close to 50% of its production on the continent and about 27% of global production. Despite its importance to food security and the livelihoods of many, especially those in the semi-arid zones of the sub-region, its cultivation is largely at the subsistence level and under rain-fed conditions, making it vulnerable to the ever-changing climate. Additionally, there is increasing industrial demand for the crop in the brewery and other food industries. While its production in the sub-region has been increasing, the increase is attributable to expansion of the area under cultivation rather than increased productivity. Thus, its yield (about 1 t/ha) is still way below the potential of the varieties cultivated, suggesting the need to intensify its production sustainably to meet the growing demand from the increasing population and industrial requirements. In this presentation, we discuss (i) the major production constraints (biophysical environment, pests and diseases), (ii) the effect of socio-economic factors (inadequate capital and access to credit, limited access to production inputs such as improved seeds, inorganic fertilizers, and chemicals required for crop protection) on sustainable intensification and the need to address them to enable effective use of resources, and (iii) the influence of management practices on the productivity of sorghum under current and future climate. It is concluded that, sustainable intensification of sorghum production in West Africa requires aggressive promotion of sustainable intensification practices (SIP) given the fragile resource base and increasing demand. Sustainable intensification practices needs to be tailored to specific locations in the landscape due to the heterogeneity of the soils, weather, and socio-economic factors that influence management practices. The design of SIP must consider the pillars of sustainability and requires the deployment of co-learning strategies to enhance adoption.