

## Effectiveness of Climate Smart Agriculture in Managing Field Stresses in Robusta Coffee

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**Abstract :** This study is an investigation into the effectiveness of climate-smart agriculture (CSA) technologies in improving productivity through managing biotic and abiotic stresses in the coffee agroecological zones of Uganda. The motive is to enhance farmer livelihoods. The study was initiated as a result of the decreasing productivity of the crop in Uganda caused by the increasing prevalence of pests, diseases and abiotic stresses. Despite 9 years of farmers' application of CSA, productivity has stagnated between 700kg -800kg/ha/yr which is only 26% of the 3-5tn/ha/yr that CSA is capable of delivering if properly applied. This has negatively affected the incomes of the 10.6 million people along the crop value chain which has in essence affected the country's national income. In 2019/20 FY for example, Uganda suffered a deficit of \$40m out of singularly the increasing incidence of one pest; BCTB. The amalgamation of such trends cripples the realization of SDG #1 and #13 which are the eradication of poverty and mitigation of climate change, respectively. In probing CSA's effectiveness in curbing such a trend, this study is guided by the objectives of; determining the existing farmers' knowledge and perceptions of CSA amongst the coffee farmers in the diverse coffee agro-ecological zones of Uganda; examining the relationship between the use of CSA and prevalence of selected coffee pests, diseases and abiotic stresses; ascertaining the difference in the market organization and pricing between conventionally and CSA produced coffee; and analyzing the prevailing policy environment concerning the use of CSA in coffee production. The data collection research design is descriptive in nature; collecting data from farmers and agricultural extension workers in the districts of Ntungamo, Iganga and Luweero; each of these districts representing a distinct coffee agroecological zone. Policy custodian officers at district, cooperatives and at the crop's overseeing national authority were also interviewed.

**Keywords :** climate change, food security, field stresses, Productivity

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