

CLIMATE CHANGE AND TEA YIELD OVER MURANG'A COUNTY: BASIC REGRESSION APPROACH

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ABSTRACT

Tea is currently the major cash crop in Kenya. Tea production plays an important role in the export market, employment sector and also is a source of revenue for the country. The need to predict the effect of climate change on tea production prompted this statistical investigation to determine tea crop response to climate variables. A statistical model was trained on historical tea yield data and corresponding minimum temperature, maximum temperature and rainfall examined over Murang'a County. Scatter plot for climate variables were generated and correlation analysis between these variables and tea production variables were carried out. A multiple linear model was developed and residual plot was used to verify the model where regression assumptions were explained. Correlation analysis gave positive correlation on tea yield versus the other variables under study, where maximum temperature gave the highest positive correlation, and rainfall gave weak positive correlations. The study points out the possibility of increased yield of tea corresponding to changes in climate variables possibly up to optimum amounts beyond which the changes in temperature may negatively affect the yields. The study recommends integrated modelling to include many other factors that can affect the yield of tea over the area of study.

KEYWORDS: Climate Change, Yield & Tea, Murang'a