

#### 74. Climate smart strategies to strengthened coffee farmers adaptive capacity to climate change

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In the last 30 years Kenya's national coffee production decreased by about 70%. In some areas like Muranga County, the decline was up to fivefold and coffee is now replaced by food crops in lower altitudes due to erratic rainfall and increased temperature. Projected mean temperature increase between 3°C and 4°C may result in yield losses of 8 - 22 percent by 2050 unless climate smart adaptation practices are undertaken. Adaptation depends on farmers noticing climate change has indeed affected them and perceiving the need for, and benefits from new production strategies. However, there is marked difference in the way scientists and farmers perceive climate change and how it affects agriculture. Therefore, this study aims to: 1) explore how cropping systems are changing; 2) analyse how scientists and farmers respectively perceive climate change; 3) present farm-level adaptation strategies and how climate smart strategies strengthen adaptive capacity of farmers. The study is based on interview of 120 farmers and collection of meteorological data. The data were analyzed in four directions: (1) farmers' perceptions about climate change, (2) trends for temperature and rainfall over 30 years, (3) relations between farmers' perception and climate data, (4) identification of adaptation strategies and adaptive capacity based on livelihood adaptation frameworks. The results revealed 1) 91 percent of the farmers perceived climate has changed, observing extended warmer seasons, changes in onset and cessation of rainfall which is indeed supported by meteorological data. 2) Only 54 percent of farmers are responding to the perceived changes, introducing climate smart practices such as varietal change, intercropping, irrigation and crop-livestock mixed farming. 3) Access to finance, human capacity building and information on weather are vital to strengthen farmers' adaptive capacity. We recommend further researches on future suitable places for coffee, with business as usual and climate smart practices to predict future winners and losers.