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INTEGRATION OF LOCAL AND CONVENTIONAL KNOWLEDGE IN FOOD PRODUCTION TO ENHANCE ADAPTIVE CAPACITY IN MWALA SUB-COUNTY, MACHAKOS COUNTY, KENYA.

The population of the people living in the arid and semi-arid areas in Machakos County, Kenya continues to increase, thus the need for more food for the ever-growing population. Given its dependence on rain-fed agricultural production and limited adaptation capacity, Mwala Sub-County, Machakos County remains vulnerable to impacts of climate variability and change. Mwala has been experiencing low crop yields due to unpredictable rainfall and prolonged drought periods. This study investigated the role of indigenous knowledge and conventional knowledge practices in climate change adaptation in Mwala Sub-county on agriculture. Primary data was obtained through various participatory research approaches including, household interviews and focus group discussions. A sample of 270 respondents from 11 villages was sampled using random sampling method. Climate data from Kenya Meteorological Department were collected and analyzed to generate the historical climate variability for Mwala Sub-county. Results showed that about 84% of the respondents had changed their ways of farming in order to increase crop yield. Farmers have also adapted to climate variability by planting drought resistant crops such as maize and beans which to them are drought resistant, with duma and pioneer varieties being the most preferred. About 1% of the respondents embraced early planting and use of certified seeds to adapt to impacts of climate change. Challenges like poverty, limited access to finances and pest and diseases (emerging and re-emerging) are the constraints to successful adaptation. Education and access to climate and agricultural information, and rainwater harvesting were found to be critical to increased food production in Mwala Sub-county. The study recommends crop diversification, establishment of Farmers' led Innovation Center (FIC) in Mwala Sub-county to serve as technology and information power house as well as education center for farmers. The recommended FIC will also be disseminating weather and climate information relevant to agriculture and food production.

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