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# Impacts of climate variability and change on beekeeping in kiteto district: A case of Kijungu, Sunya and Olgira Beekeepers Communities

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**Impacts of climate variability and change on beekeeping in kiteto district: A case of Kijungu, Sunya and Olgira Beekeepers Communities.**

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**Degree of Masters of Science in Climate Change and Sustainable Development  
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This study investigated impacts of climate variability and change on Beekeeping productivity in Sunya, Kijungu and Olgira villages in Kiteto District northern Tanzania. Specific objectives of the study were: to identify the contribution of honey bees to community livelihood, to identify climate related factors which influence honey bee productivity, to characterize impact of climate variability and change on honey bees productivity, to identify the role of climate services and indigenous knowledge on linking changing climate with bee keeping activities and to identify possible adaptation measures that beekeepers use to respond to the impact of climate variability and change. Beekeeper were purposively selected based on their experience where by snow ball approach was used to come up with more experienced and long term practitioners of beekeeping activities. Primary data were collected through focus group discussions, field observations, household questionnaires and interview with key informant. Secondary data were collected through documentary and literature review. Data were analyzed by using Statistical Packages for Social Sciences (SPSS) version 20 and Rainfall data were analyzed using Microsoft Excel. The study revealed that, Climate Change and Climate Variability have negative contribution to honey bee's productivity, in that they alter plant flowering time, increase water stress in the case of severe drought, thus reducing pollen and nectar availability, inhibit movements, bee communications, change climatic condition and physical damage of hives which causes colony starvation and retarded bee forage activities hence low honey storage and productivity. In the study area 73% of beekeepers attributed decline in honey production with climate variability and change factors including drought. Integration of weather forecast issued by TMA is to a great extent not utilized by local communities rather indigenous knowledge is more preferred. Despite climate variability and change, beekeepers have developed ways to respond to these impacts by shifting to pollen rich areas, providing food for bees, providing water, changing harvesting time, changing hive types, changing apiary location, increasing the number of beehives, planting tree, putting hives in tree shadow, use of over-dimensioned wooden hive and changing harvesting methods and time. It was however reported that beekeepers face serious constraints such as lack of finance, limited access to credits and markets, persistence of drought, weak infrastructural conditions and limited access to climate information. The study concludes that, concerted efforts to strengthen the capacity of beekeepers to adapt through integrating climate services with available indigenous knowledge. Key Words: Climate Change and Variability, Beekeeping, Vulnerability and Adaptation.