

Investigation of rainfall variability Maize and sorghum in Morogoro Region Tanzania

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Master of Science, (Water Resources Engineering)

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The study was carried out to investigate the rainfall variability and its implication on productivity of maize and sorghum in Morogoro region. The objective of the study was to determine the changes on seasonality of rainfall variables affecting crop production and to determine the performance of maize and sorghum under variable climate in the study area. Data used included temperatures, humidity, sunshine hours and wind speed for 10 years (195-2005) and rainfall data for 25 years (1980-2005) from Tanzania meteorological agency. Crop data for 23 years (1981-2005) which includes crop productions and area cultivated to the major rain fed crops used to obtain the crop productivity. Seasonal rainfall in five stations shows an increasing trend, while three shows increasing trend in annual rainfall. No significant trend was observed in onsets, cessations and length of rains, although they vary from one year to another. On the other hand, five stations show number of dry spells within the rainy season are increasing. productivity is observed to be increasing while sorghum is decreasing. The variability of the amount of rainfall, dry spells and WRSI from year to year have shown their impact on the maize and sorghum productivity increases. Large number of dry spells decreases the crop productivity while large value of WRSI causes an increase in crop productivity. WRSI of both maize and sorghum is decreasing with time meaning the crops face water stress. The WRIS in the southern part ranges between 95-100% which results to 90-100% of the expected crop yield, while North part has WRIS below 90 which results to low yield.