



## The Science of Climate Change

Mr Kusemererwa

UCASED, Environmental Science, Kampala, Uganda (mkuse\_199@yahoo.com, 256-414-345-597)

### Abstract

By Moses Kusemererwa

UCASED

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### The Science of Climate Change, impact and Adaptation

Temperature and Moisture regimes are among the key variables that determines the distribution growth and productivity and reproduction of plants and animals. Changes in Hydrology can influence species in a variety of ways but the most completely understood process are those that link moisture availability with intrinsic thresholds that govern metabolic and reproductive processes (Burkett et al..2005).

Climate Change will increase the frequency and intensity of extreme weather events such as droughts, floods, landslides and heat waves. The events of the past few years clearly illustrated the magnitude of the problem. Although rigorous and detailed vulnerability and adaptation options were not done for Uganda, the literature review analysis of empirical information and observations by the communities during the participatory rural appraisal has given interesting results. In Uganda the frequency of drought has increased. For example seven droughts were experienced between 1991 and 2000. This is confirmed by the results of the participatory Rural Appraisal (PRA), which rated droughts as the most frequent event. An increase in intensities and frequency of heavy rains, floods and landslides in the high land areas as well as out breaks of associated of waterborne diseases with the floods was also observed and confirmed by the PRA results.

Frequent droughts have resulted in lowering of the water table, leading to drying of bore holes.

Climate change modifies rainfall, evaporation, runoff and soil moisture storage, the amount and availability of water stored in the soil is crucial for crop growth. Too much precipitation can cause disease infestation in crops especially legumes. While too little can be detrimental to crop yields especially if dry spells occur during critical development stages.

Among the adaptation approaches is the use of harvested water for house hold use, live stock crops, construction and brick making. In agriculture, stem runoff is used in drip irrigation of crop plants notably vanilla, bananas and vegetables.

Coping strategies for soil erosion, land slides and soil degradation is through construction of infiltration ditches around homes, planting grass cover, terrace farming, digging trenches to divert runoff, mulching and tree planting. To encourage the intake of poor quality roughage, animals are watered early in the day to cope with the high temperatures, so that by night fall; animals are sufficiently hungry to feed on the dew moisture standing hay.