Veg-Hydroponics opportunities and implications; Assessment of Nyando Topography, Kisumu County.

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Abstract

Integrated climatic change adoption is essential for agricultural sustainability, especially with the current extreme whether occurrences posed by the global warming. Recurrent flooding has negative effects on agriculture as farmers encounter land, crops and animal losses post every rainy season, a consequence of unpredictable weather pattern. The objective of this paper was to carry out a desk review of Nyando topography in relations to floods, examine farmers opinion on implementation of floating agriculture on waterlogged lands and to investigate the sociodemographic characteristics of farmers in Nyando wetlands. Descriptive research survey design approach was employed. A structured questionnaire was used for both quantitative and qualitative data which were collected from the beginning of January to Mid of April 2024 in attempt to answer the study objectives. Purposive sampling was conducted to select one hundred and forty farmers as the study participants. Statistical Packages for Social Sciences was used to analyze the quantitative and qualitative data. The results showed that 83% of the farmers maintained moderately to less favorable opinion towards utilization of the waterlogged wetlands for agriculture as a means of adopting to recurrent floods. Moreover, Nyando topography review demonstrated suitability for vegetable farming as hydroponics. In conclusion, the land gradient, water channels and type of soil of Nyando sub-county makes integrated hydroponics a suitable farming venture for socio-economic and ecological benefits, hence, economic resilience and sustainability amidst dynamic climatic changes. Future experimental research is therefore recommended to prove validity of vegetable as hydroponics.

Key words: Hydroponic; Topography; Climatic change; Extreme flooding, land gradient