

## Contribution of Different Farming Systems to Soil and Ecological Health in Trans Nzoia County, Kenya

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**Abstract :** Conventional agriculture is one of the leading causes of land degradation, threatening the sustainability of food production. Organic farming promotes practices that have the potential of feeding the world while also promoting ecological health. A study was therefore carried out with the aim of conceptualizing how such farming systems are contributing to ecological health in Trans Nzoia County. 71 farmers were interviewed and data was collected on parameters such as land preparation, agroforestry, soil fertility management, soil and water conservation, and pests and diseases. A soil sample was also collected from each farm for laboratory analysis. Data collected were analyzed using Microsoft Excel and SPSS version 21. Results showed that 66% of the respondents practiced organic farming whereas 34% practiced conventional farming. Intercropping and crop rotations were the most common cropping systems and the most preferred land preparation tools among both organic and conventional farmers were tractors and hand hoes. Organic farms fared better in agroforestry, organic soil amendments, land and water conservation, and soil chemical properties. Pests and disease, however, affected organic farms more than conventional. The average nitrogen (%), K (Cmol/ kg and P (ppm) of organic soils were 0.26, 0.7 and 26.18 respectively, conventional soils were 0.21, 0.66 and 22.85. Soil organic carbon content of organic farms averaged a higher percentage of 2.07% as compared to 1.91 for the conventional. In conclusion, most farmers in Trans Nzoia County had transitioned into ecologically friendly farming practices that improved the quality and health of the soil and therefore promoted its sustainability.

**Keywords :** organic farming, conventional farming, ecological health, soil health

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