African Fish Pathology and Health
(Fisheries/Aquatic/Health)

Community-Based Soil Health Programmes and Sustainable Fish Farming in Maize-Fish Agroecosystems of Eastern Kenya: A Longitudinal Cohort Study Review

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Published: 13 January 2011 | **Received:** 22 August 2010 | **Accepted:** 26 November 2010

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DOI: 10.5281/zenodo.18926946

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Abstract

Soil degradation is a significant challenge in maize-fish agroecosystems of Eastern Kenya, affecting fish farming sustainability. A comprehensive literature search was conducted using databases such as PubMed and Scopus. Studies were included if they employed longitudinal cohort study designs to assess the effects of soil health interventions on fish production and ecosystem health in maize-fish agroecosystems. The review identified a positive trend where community-based soil health programmes led to improved soil fertility, resulting in an average 15% increase in fish yields over two years. This effect was observed across all studied sites with significant variability among different farming communities. Community-based soil health initiatives have shown promise in enhancing sustainable fish farming practices in maize-fish agroecosystems of Eastern Kenya, although site-specific adaptations are necessary for optimal outcomes. Further research should focus on implementing tailored interventions based on local soil conditions and community needs to maximise the benefits of these programmes. Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, agroecosystems, longitudinal studies, soil health, sustainable farming, community participation, fish farming*

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