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"Reconcile land system changes
with planetary health"

Does land use decision-making affect food security in rural farming households? evidence from Tanzania

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Abstract

Introduction: Household food security depends not only on increased food production but also on the diversity and quality of food produced to meet consumers' nutritional demands. As malnutrition remains a critical public health issue in Tanzania, understanding various socio-economic and cultural dimensions that influence household food security is essential for developing effective interventions. Farmers' land use decision-making, particularly cropping diversity, is fundamental to achieving household food security. This study examines how rural smallholder farmers' decision-making on crop diversity influences their household food security.

Methodology: This cross-sectional study was conducted among 303 heads of household and smallholder farmers in Mkuranga District of Pwani Region in Tanzania. A semi-structured questionnaire collected demographic characteristics, land use, and crop diversity among interviewed farmers. Farmers' food literacy information was collected using a food literacy questionnaire that was validated for farmers. The three dimensions considered were nutrition, food safety, and agriculture standards (NFSAFL); social-ecological food literacy (SEFL), capturing information on awareness and attitudes towards sustainable agricultural practices as well as cultural and relational food literacy (CRFL). Household food security information was collected using a food consumption score (FCS) questionnaire with eight food groups. Food Literacy (FL) scores for each of the three domains of FL literacy were analyzed. The crop diversity was calculated using a farmer's crop count in the previous season. Linear regression analysis established the relationship between total FCS and crop diversity.

Results: The results revealed that crop diversity, SEFL, and NFSAFL were the best predictors of household food security ($p < 0.05$). Each increase in crop diversity was associated with a 1.13 increase in FCS, while the NFSAFL and SEFL are associated with an increase of 0.38 and 0.5 in FCS, respectively.

Conclusion: This study underscores the need for crop diversity and food literacy strategies to improve household food security. Enhancing crop diversification leads to food varieties, while food literacy equips farmers with the competence to interact with food systems to make healthier food choices. Further initiatives should integrate food literacy's social, ecological, nutritional, and safety aspects within agricultural frameworks to facilitate sustainable dietary improvements and achieve better nutritional outcomes.

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