Abstract

Farmer Managed Natural Regeneration (FMNR) has emerged as a transformative, community-driven approach for rehabilitating degraded lands, especially in arid and semi-arid regions. This mixed-methods study assessed the impact of FMNR practices across four sites in three Kenyan counties: Osiligi (Kajiado County), Mara (Narok County), and Kalawa and Kitise (Makueni County). Using data from 1,632 lead farmer households, complemented by focus group discussions, key informant interviews, and field observations, the study evaluated land degradation extent, restoration achievements, household well-being, and FMNR adoption and awareness rates. Results revealed notable regional differences: Osiligi exhibited the highest degraded land area (3,407 hectares) and the largest absolute area under restoration (893 hectares), although Mara achieved the highest restoration-to-degradation ratio (86.6%). A statistically significant association was found between county of residence and household perceptions of ability to provide for family needs ($\chi^2 = 203.23$, $p < 0.0001$). FMNR adoption rates varied, with Mara leading at 66% and Kitise lagging at 41%, despite overall high awareness levels ranging from 82% to 97%. ANOVA tests confirmed significant differences across the four sites regarding land restoration efforts and socio-economic outcomes ($F(3,4) = 18.74$, $p = 0.0045$). The findings affirm FMNR's potential as a scalable, low-cost restoration strategy that simultaneously enhances ecosystem health and rural livelihoods. However, they also highlight the need for context-specific interventions that address adoption gaps, strengthen community institutions, and align land restoration efforts with broader climate adaptation and sustainable development goals.