Abstract

Land degradation driven by unsustainable land use practices is a serious concern, especially in Kenya's arid and semi-arid lands, and it has led to soil erosion, loss of vegetation cover, and reduced agricultural productivity. The consequences include declining crop yields and increased vulnerability to climate change impacts like droughts and floods. Famer Managed Natural Regeneration (FMNR) is one of the low-cost agroforestry practices being promoted in land restoration. Data collected from a cross-sectional baseline study conducted by World Vision Kenya in July 2024 in the counties of Makueni, Kajiado and Narok was used to demonstrate the economic benefits of FMNR to farmers practising it. The study analyses (1) FMNR's association with crop and livestock yield improvements and resulting income changes; (2) its contribution to enhanced soil fertility and water retention, which bolster agricultural resilience and reduce the cost of regeneration. A total of 1628 farmers from four areas within the three counties were sampled for the study and interviewed using a semi-structured questionnaire. This information was complemented by focus group discussions and key informant interviews. The benefits of FMNR accruing to farmers were categorised into increased crop yields, increased pasture yields, improved soil fertility and reduced costs of regenerating land. The benefits were compared between FMNR and non-FMNR farmers. The data was then analysed using descriptive and inferential statistics. Results show that more than 50% of the farmers reported high crop yield, indicating the potential of FMNR to increase crop productivity. Furthermore, there are significant differences in pasture yields ($\chi^2 = 72.05$, $p_{0.05} < 0.05$), soil fertility ($\chi^2 = 237.76$, $p_{0.05} < 0.05$) and cost of land regeneration ($\chi^2 = 20.72$, $p_{0.05} < 0.05$) between FNMR and non-FMNR farmers. There were significant differences in soil fertility perceptions across the study sites ($p_{0.05} = 0.029568$), with Kajiado farmers perceiving the highest soil fertility attributed to the practice of FMNR. It was concluded that tangible economic benefits in terms of increased crop yield, pasture yields and soil fertility are realised by farmers who have embraced FMNR at the onset of the project. These benefits are attributed to increased environmental services associated with complex interactions between trees, crops, animals and the abiotic environment. It was recommended that longitudinal data over the life of the project should be collected in order to quantify the actual benefits accruing to farmers adopting FMNR practice.