

Dynamics of Terrace Adoption, Propagation, Benefits & Challenges among Dryland Agro-Pastoralist Communities of West Pokot

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Abstract

Conventional approach of establishing soil conservation strategies in degraded drylands has had negligible success. This has been contributed by many constraints, including; lagging of farmers in technology adoption, inadequate resources, and lack of motivation. Thus, a study was conducted among three agro-pastoral community farmer groups in Korellach Parak, Kapkitony, and Kaporowo villages domiciled in Chepareria ward, West Pokot, Kenya, to assess contributory factors and consequences of adopting terracing as a soil conservation measure. Mixed methods comprising; one-on-one interviews, cross-sectional field measurements, and focus group discussions (FGDs), were used for data collection. Results indicate that the agro-pastoral communities are fully aware of soil degradation and its impacts. Besides terracing, farmers practice stone bands, enclosures, agroforestry, and ridges. Terracing is a recently adopted farm-level soil conservation practice achieved through organized farmer groups dubbed “Kemorokorenyo” (meaning let us reclaim our land) merry-go-round. Within the three villages, 60% of the households have their farms terraced with an average terrace volume of $103.8 \pm 21.45 \text{m}^3$, $105.89 \pm 33.126 \text{m}^3$, and $129.6 \pm 15.966 \text{m}^3$ in Parak Kapkitony and Kaporowo, respectively. Rapid sedimentation of terraces dykes, which contributes to the reduced effectiveness of the terrace system was identified as the major challenge. The sediment volume significantly differs along the slope, with the highest sediment build-up experienced on high slopes as shown by the Kruskal Wallis test; $H(2) = 6.699$, $p = 0.035$. Terrace embankments reinforcement practice to counter sedimentation challenge has faced slow adoption. The poor reinforcement is attributable to the lack of knowledge on suitable local context multipurpose materials to meet the community’s needs.

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