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Agro-ecological approaches for fruit and vegetable production systems: Opportunities and boundaries in Turkana county, Kenya

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Abstract

Eastern African Drylands, including Turkana County, experience frequent droughts and occasional heavy rains, posing challenges to fruit and vegetable production, consequently affecting people's nutritional status. This study, which focused on agro-ecological methods for fruit and vegetable production systems, was carried out within the scope of the Sustainable Food Environment for Food and Nutrition Security in Eastern African Drylands project. The study used trials of improved practices (TIPs), engaging 50 farmers in two community units: Kabulokor (mainly agro-pastoralist) and Atala Kamusio (mainly pastoralist). Twelve gender-disaggregated Focus Group Discussions (FGD) were conducted to inform the TIPs. During the FGDs, participants discussed promising agro-ecological methods to enhance fruit and vegetable production on their farms. For TIPs, 50 agro-pastoralist households were randomly selected to participate. Farmers chose their preferred agro-ecological method out of a list of 7 to enhance vegetable or fruit production. Data was collected during each of the three visits in the TIPs process which lasted three-month. The study revealed that farmers initially selected multiple agro-ecological methods such as mulching, applying ash as pest management, early hand weeding and tree planting. However, later most farmers focused on specific techniques, mainly intercropping, pest management by ash and applying animal manure. Follow-up workshops to gather farmers' opinions on the outcome showed participants were 1) unfamiliar with important agricultural practices, like mulching, 2) intercropping as a farming practice, was restricted to cowpea, kales with maize and Sorghum for some due to lack of seeds, 3) they relied on seeds that they bought from agro vets. 90% of the participants showed lack of knowledge in bottle irrigation techniques. Restricted access to training and seeds underscores the importance of bolstering extension services and local seed production for agricultural sustainability and independence. Filling knowledge and resource gaps is essential to ensure effective and accessible production of fruits and vegetables in drylands, as demonstrated in previous projects. Findings from this study informs policymakers on fruitful agro-ecological methods, enhancing food security and sustainability at county and national levels.

Keywords: African drylands, food and nutrition security, fruits, vegetables