

Building farm resilience - Agro-pastoral land management practices, rainfall variability and crop production outcomes in Kathonzwani Sub-County, Kenya

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In a context of land degradation and high rainfall variability characterizing semi-arid environments, land management practices such as terracing, agroforestry, conservation tillage, cover-cropping, mulching and manuring are critical for securing crop production. Agro-pastoralists' decision to favour certain land management practices depend among others on their adaptive capacities, which are shaped by current social-ecological contexts and their perceptions of opportunities and constraints. As farm resilience is multidimensional and depends on complex interactions between various social-ecological factors, it cannot be directly measured. Agro-pastoral land management practices can thus serve as a surrogate of the capacity of the agro-pastoral social-ecological system in the short-to mid-term to navigate change. Understanding how these different factors interact is important for building resilience in agro-pastoral farm production. This paper analyses agro-pastoral land management practices and how they enable crop production despite stresses and shocks, in a given rainfall variability context. Data was collected through a survey of 138 farmers in Kathonzwani sub-county and the analysis of average monthly vegetation indices was used as a proxy for rainfall conditions. The paper identifies factors enabling farmers to adopt sustainable land management practices that ensure crop production during disturbances such as droughts. It explores how the current ecological, political, economic and socio-cultural context influences agro-pastoral land management practices, how such practices relate to crop production outcomes during low rainfall conditions and by extension, the capacity to build farm resilience in Kathonzwani.