

Abstract

Background: Watershed degradation in semi-arid regions of Kenya has emerged as a critical environmental and socio-economic challenge, threatening ecosystem sustainability and rural livelihoods. In Makueni County, increasing pressure from population growth, unsustainable land-use practices, climate variability, and poverty has accelerated soil erosion, deforestation, sedimentation, and declining agricultural productivity, thereby undermining food security and environmental integrity.

Aim: The present study aimed to determine how institutional conditions influenced watershed management in Makueni County, Kenya. The specific objectives were to determine how land-use methods influenced the socio-economic and biophysical conditions of watershed resources in Makueni County and their effects on livelihoods, and how the institutional framework contributed to watershed management in the study area.

Study Design: The study used a descriptive survey research approach to obtain data on the socio-economic characteristics of the study area and historical trends in land use.

Place and Duration of Study: Makueni County, Kenya; September 2024 to April 2025.

Methodology: Structured and semi-structured questionnaires were used to collect data from the community and key informants. The data collected were analysed using the Statistical Package for the Social Sciences (SPSS) and Microsoft Excel 2010. Data from household and key-informant questionnaires and focus group discussion (FGD) notes were processed using thematic analysis to establish leading themes, trends/patterns, relationships, or correlations.

Results: The study established that livelihood strategies and the current natural resources management framework had a negative impact on watershed management, with 92% of respondents reporting that unsustainable utilisation methods led to watershed degradation. The most conspicuous effects of watershed degradation were reduction in vegetation cover, increased soil erosion (82%), diminishing farm sizes (75%), water scarcity (63%), and diminishing grazing land (37%). Several government and non-governmental organisations are actively involved in

watershed management in different capacities. However, local community participation in watershed restoration activities and involvement in institutional decision-making remain largely unaddressed, thus compromising the sustainable and holistic integrity of watershed resources.

Conclusion: We conclude that, although some institutional efforts are in place to maintain watersheds in the study area, the approach is uncoordinated and the local community is largely isolated. Despite multiple actors, weak coordination, sectoral approaches, and limited community participation undermine sustainable watershed management. We therefore recommend an integrated and holistic strategy for sustainable watershed management in which the community becomes a central part of policy formulation and decision-making.