

## **Abstract**

A cross-sectional study was conducted with the aim of describing livestock production systems in semi-arid and arid pastoral agro-ecological zones (AEZ) in Kitui County. Sample size of 110 households were calculated and distributed proportionately. Simple random sampling was used to get final respondent. Five livestock production systems were identified. Low intensive ruminant (11.8%), low intensive mixed (9.3%) and extensive ruminant (34.5%) were primarily found in semiarid farming zone. Extensive mixed ruminant (38.1%) and non-ruminant (6.3%) were mainly in arid pastoral zone. All household kept chicken. Livestock was the main source of income in semi-arid farming zone (81.7%) and arid pastoral zone (79.4%). Rabbits (6.3%) and pigs (0.9%) were the least species kept in the study area. From the study, livestock was the main source of income with different livestock production systems existing in different AEZ. There is need to empower respondents to improve livestock production in relation to their AEZ.