

ABSTRACT

The world is facing decreasing food production from agriculture, especially in Africa where smallholder farming provides most of the food. The importance of agriculture in food provision at household and national levels is now universally accepted. However, in as much as smallholder production feeds majority of rural households, the available global data only exist on well-established food systems and not on the smallholder systems. In Kenya, over 85% of farmers are smallholder mixed farmers. Further, many researchers and policy-makers have not considered household characteristics and agricultural practices as determinants to household food security hence the nexus between them has received little attention resulting in limited comprehensive data linking them. This study was carried out in the semi-arid Agro-ecological zones of Nyakach where agriculture is the main source of food and food poverty level is 65.0%. Agricultural practices that the smallholder farmers engage in could be a fundamental factor influencing household food security. Studies on food security in Nyakach Sub-County have, however, concentrated on Economic Partnership Agreements and commercial agriculture. There was therefore need to determine the influence of agricultural practices by smallholder farmers on household food security. The study adds to the existing body of knowledge and forms a basis for further research and policy analysis on agriculture and food security in semi-arid environments. The broad objective of the study was to assess the influence of agricultural practices on food security. The specific objectives were: to determine the influence of demographic and socio-economic household characteristics on food security; to examine the influence of crop farming practices on household food security; to examine the influence of livestock farming on household food security. The study population was 9,331 households. The sample size was 384 households selected using Proportionate Stratified sampling method. Purposive sampling was used to identify key informants. The study adopted cross-sectional social survey research design. Primary data on household characteristics; crop and livestock farming practices and household food security were collected through field observations; questionnaires; key informant interviews and focus group discussions. Pearson's Correlation Coefficient (r) was used to assess the relationships between household characteristics; farming practices and household food security. Logistic regression Analysis was conducted to establish significance of relationships between size of acreage; household income and expenditure; annual crop yields; livestock numbers and household food security. Chi-Square test was used to show the association between categorical and continuous variables and household food security. Multivariate analysis was done to establish the relationship between all crop farming practices and food security. Qualitative data on household size; type of crop and livestock; food coping strategies and quality of food consumed in household was transcribed and analyzed by creating relational themes. Household Socio-demographic and economic characteristics that most significantly influenced food security were family size (0.000), consumption of own-produced food (0.000), total number of livestock owned (0.002) and off-farm employment (0.003). Choice of seeds and crop varieties, use of inorganic fertilizer, organic manure, mulching and composting; irrigation, improved fallow practices and construction of anti-erosion hedges are crop farming practices that influenced household food security. Also, Livestock type, ownership, housing and veterinary services are significant determinants of household food security. The study concludes that the household is the basis of achieving food security hence the farmer and farming practices must be prioritized. The study recommends that smallholder farmers' sensitization programs and extension and veterinary services should be encouraged so as to protect household food security in semi-arid lands.