

Abstract

Globally, food and livelihood insecurity have persisted for decades. This is especially so in developing countries Kenya included. Many factors are assumed to cause food insecurity though they vary from place to place. This study focused on the most densely populated irrigated rice farming system of Kiratina Sub-location in Kirinyaga County. Its aim was to determine how household land size and use affect food and livelihood security, profile the factors that determine household land size and use, interrogate the land rights and use transfer across generations and recommend interventions for achieving food and livelihood security in irrigated rice farming systems. The study adopted a cross-sectional survey design. A stratified proportionate random sampling method was applied in each of the thirteen villages leading to administration of 206 questionnaires in male and female headed households. Primary data was collected via photography, observation, key informant interviews and focus group discussions. The study found that agriculture was the main economic activity employing 79% of household heads and every household practiced some form of agriculture. Further, the sub-location's land size ranged from zero to ten acres with an average of 1.48 acres. Rice farming was the main land use taking up 91% of the land while human settlement, and other forms of land uses took 9% of the land. It established lack of significant relationship between household land size and use and household food and livelihood security, $t = 0.385$, $p = 0.701$. In 69% of the households, land inheritance to an average of four heirs was the leading contributor to land subdivision with other factors of selling (72%), gifting (12%), for loan purposes (6%) and leasing (4%). In 87% of the households, subdivision contributed to the decrease in farm sizes and total farm yields. Production was mainly attributed to factors related to farm inputs, household size, rice variety and farm maintenance all affecting household food and livelihood security. Population growth, human settlement and cultural factors of land inheritance, which accounted for 71.8% change in average land sizes from 3.9 acres to 1.1 acres within a generation, affected household land size and use. On farm-based food security lasted a farming household on average eight and half months. Off farm income sources were adopted as coping mechanisms to cater for food insecurity. Adoption of ideal household sizes recommended minimum of 2 acres, adoption of modern farming technology like systems of rice intensification and high-rise cluster settlement were recommended as interventions for addressing household food and livelihood security challenges.