Tropentag 2018, Ghent, Belgium
September 17-19, 2018

Conference on International Research on Food Security, Natural Resource Management and Rural Development
organised by Ghent University, Ghent, Belgium

Drivers of Commercial Rabbit Production for Nutritional Diversity in Kenya

Sylvia Moraa Mogeni[*a], Dennis Etemesi Olumeh [a] and David Jakinda Otieno[a]

a Department of Agricultural Economics, University of Nairobi, Kenya

Abstract

Rapid population growth and declining land sizes in developing countries have necessitated innovative shifts in enterprise mix towards more intensive farming systems that can adequately support agrarian livelihoods. Emerging small livestock such as rabbit that require less land are considered more viable enterprises in land constrained systems. The ability of rabbits to be produced in small land parcels ensures production even in declining land sizes. Rabbit meat has diverse nutritional benefits. However, rabbit production in Kenya is largely on small informal scale and mostly done as a hobby by youth in rural remote areas; where food and nutritional insecurity are surprisingly critical challenges. Further, commercial rabbit production has lowly been adopted in few urban and peri-urban areas. Thus, there is need to focus on factors that support and or inhibit smallholder farmers to commercially produce rabbits to be able to make comprehensive policy decisions.

This study assessed the determinants of smallholder farmers' decisions to rear rabbit for commercial purposes, as a pathway for nutritional diversity and food security through improved access to other dietary components in Kiambu County, Kenya. Primary survey data from a random sample of 70 rabbit farmers was analysed using the probit regression model. Results showed that possession of formal education, access to credit and specialised farming experience were the key motivating factors on farmers' decisions to engage in commercial rabbit production. Interventions that support up scaling of commercialisation of this relatively new and emerging meat value chain are recommended. Such initiatives include provision of value chain-specific training and affordable capital for business start-up; including low interest credit.

Keywords: Commercialisation, Kenya, nutritional diversity, Probit, rabbit

Corresponding author email: etetmesideaty@gmail.com

Introduction

Majority of the countries in Sub Saharan Africa (SSA) have agrarian dependent economies. This makes agricultural land an important resource under which development strategies for majority of SSA countries are underpinned. Further, nearly 70% of SSA population live in rural areas and is engulfed in high poverty and low-income levels. The ownership, control and use of land is therefore a critical aspect in defining growth and prosperity in Africa. This having been said, continual growth in population further jeopardizes the ability of the rural poor to have ownership to large parcels of land which is the primary resource for agricultural production. This is made much worse by land fragmentation that is mostly practiced by most African culture in the form of land inheritance. Declining land sizes have jeopardized the ability of ending hunger in Africa, thus necessitating innovative shifts in enterprise mix towards more intensive farming systems that can adequately support agrarian livelihoods. Emerging small livestock such as poultry and livestock are considered sustainable options for land constrained countries like Kenya. Rabbit farming in Kenya dates to the 19th century when the exotic breeds were first introduced in the Central part of Kenya before being spread to other regions (Republic of Kenya, 2009). The ability of rabbits to be produced in small land parcels ensures food security even in declining land sizes. More to this, Rabbit meat has diverse nutritional benefits (Bednar, 2014). However, rabbit production in Kenya is largely on a small informal scale and mostly done as a hobby by youth in rural remote areas; where food and nutritional insecurity are surprisingly critical challenges (MOLD, 2004). Interest in commercial rabbit production has been growing due its nutritional benefits and changes in consumer patterns (Serem et al., 2013). Another study by Borter and Mwanza (2011) identifies rabbit farming as one of the fastest growing livestock enterprises in Kenya. Despite the significance of rabbit farming to Kenya's economy amidst diminishing land sizes, majority of rabbit farmers still produce meat for domestic purposes with very little or no orientation towards commercialization (Kale, 2016). Previous research on agricultural commercialization have excluded the study of rabbit meat value chain. This leaves a dearth in knowledge in terms of understanding the factors that drive and/or inhibit commercialization of rabbit meat. Hence, this study was motivated by this gap.

Material and Methods

The study was conducted in Kiambu County. It was purposively selected for this study due to the growth of rabbit rearing in the county. Another factor that contributed to the selection of this study area was, the evidence in diminishing land sizes for agricultural production in support of commercial housing. Hence farmers are investing into commercial activities that do not require large pieces of land such as rabbit farming.

Primary data was majorly used in this study. Data was collected using semi structured questionnaires. A total of 70 rabbit farmers were randomly sampled and data was collected through face-to-face interviews. This method was beneficial in that it allowed for probing and clarifying the questions during data collection. Statistical Package for Social Scientists (SPSS) was used in data entry, cleaning and analysis.

Qualitative and quantitative methods were used in data analysis. Qualitative methods such as means and frequencies were used in profiling rabbit farmers whereas quantitative methods were used to determine the factors that significantly affected rabbit commercialization. A Probit regression model was used to analyse the socioeconomic and institutional factors that significantly influenced rabbit commercialization.

Results and Discussion

Socio-economic characteristics of rabbit farmers

Results in Table 1 showed that approximately two thirds of rabbit farmers were male and participated in commercial rabbit production. Further, more than three quarters of the farmers had an educational level that was above primary, had access to credit, and were members in a development group.

Table 1: Socio economic characteristics of rabbit farmers

Variable	Statistics
Gender (% male)	67
Education level (% above primary)	79
Credit access (% yes)	87
Credit use (% otherwise)	64
Group membership (% yes)	79
Market participation (% yes)	64

Results from the Probit analysis illustrated that level of education, farming experience, and access to credit significantly influenced commercialization decisions among rabbit farmers. A unit increase in years of schooling increased the probability of rabbit commercialization. A year increase in rabbit farming experience increased the likelihood of rabbit commercialization. Results on level of education and experience are expected from the fact that educated farmers and farmers who are more experienced in rabbit production are aware of the benefits associated with commercialization of rabbit meat, thus they are likely to participate in the market.

Table 2: Probit regression results on determinants of farmers' decision on commercial rabbit farming

Variable	Coef.	Std. Err.	P>z
Gender of the respondent	-0.025	0.430	0.953
Level of education***	0.604	0.222	0.007
Farming experience***	1.668	0.520	0.001
Access to credit*	-0.856	0.490	0.081
Constant	-2.222	1.579	0.159

Notes: ***Notes: ***, **, * significance levels at 1, 5 and 10 percent respectively.***

Source: Survey Data (2017).

Further, farmers who had access to credit were less likely to participate in markets. This result can be assumed to mean that farmers who had higher access to credit preferred investing in other agricultural enterprises as opposed to rabbit production.

Conclusions and Outlook

The study assessed the determinants of farmers decision on commercial rabbit farming. Results showed that factors such as level of education and farming experience had a positive and significant effect on commercial rabbit production, whereas access to credit negatively influenced farmers decision to participate in commercial rabbit farming.

These results call for various policy implications. Interventions that support up scaling of commercialisation of this relatively new and emerging meat value chain are recommended. Such initiatives include provision of value chain-specific training and affordable capital for business start-up; including low interest credit. Targeted credit mechanisms that support the rabbit meat value chain should be developed and advanced to ensure credit that is accessed is specifically used in the rabbit meat value chain.

References

Bodnar, k. & Skobrak, e. b. (2014). main traits of the rabbit meat in its marketing. *Lucrări Științifice Management Agricol*, *16*(2), 104.

Borter, D. K., & Mwanza, R. N. (2011). Rabbit production in Kenya, current status and way forward. In *Proceedings of Annual Scientific Symposium of the Animal Production Society of Kenya. Driving Livestock Entrepreneurship towards attainment of Food sufficiency and Kenya Vision* (Vol. 2030, pp. 13-19).

Kale, P. C., Kitilit, J. K., & Kebeney, S. J. (2016). Rabbit production practices among smallholder famers in Kenya.

MOLD. 2004. Annual Report, Department of Livestock Production. Ministry of Livestock Development. Nairobi.

Republic of Kenya (2009). Kiambu West District Livestock Production. Annual Report. Government Printer, Nairobi.

Serem, J. K., Wanyoike, M. M., Gachuiri, C. K., Mailu, S. K., Gathumbi, P. K., Mwanza, R. N., ... & Borter, D. K. (2013). Characterization of rabbit production systems in Kenya. *Journal of Agricultural Science and Applications*, *2*(3).