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2021-11-20

Journal of agriculture and veterinary science

10.9790/2380-1410024148

Factors influencing farmers' access to the market on food produced on urban and peri-urban areas of Kericho County, Kenya

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Abstract

Many households are consistently turning to Urban and Peri-urban food production for consumption and commercial purposes. However, there is limited research, if any, that has been conducted to explore the influence of farmers' access to the market on the food produced in this areas. A descriptive research design was used in this study that examined factors influencing farmers access to the market on the food produced on urban and peri-urban areas of Kericho County of Kenya. The targeted population was a total of 3487 Urban and peri-urban agriculturalists in Kericho County. A sample of 341 Urban and peri-urban agriculturalists was sampled using stratified random sampling and simple random sampling methods. Data was collected using a structured and unstructured feedback form. Data were then analysed using frequencies and proportion while hypotheses were confirmed using Chi-square at 0.05 alpha level. Descriptive and inferential statistics were calculated using SPSS Software Version 21.0. The study concluded that access to market directly correlate with household food security in Kericho County. The study also recommends that farmers should be educated on the need to access the markets directly within their locations. It further recommends that the county government of Kericho should establish a good market network for farmers by identifying markets for local production. Finally, comparative research studies should be conducted among different counties in Kenya to find out on how urban and peri-urban farmers are accessing market for their produce. This is because the present study concentrated only on towns within Kericho County.

Keywords: Households, Farmers, market access, Urban and peri-urban, Kericho County

Date of Submission: 05-11-2021

Date of Acceptance: 20-11-2021

I. Introduction

Agriculture is among the essential sectors, and it is the foundation of the Kenyan economy, adding up to around 25% of the Gross Domestic Product (GDP). Agriculture also employs approximately 75% of the national work compel and is one of the big four agendas under the Kenya's administration (The Republic of Kenya, 2017). More than 80% of the Kenyan populations who live in the country zones earn a living, specifically or by implication from agriculture. The growth of the agricultural sector is an important aspect in terms of poverty alleviation. The economic and demographic growth of cities globally, via relocation and industrial development, results in spatial expansion, leading to encroachments by cities upon adjacent urban and peri-urban (UPA) areas (Telintelo, 2001). Several households are increasingly shifting towards Urban and Peri-urban Agricultural food production for their consumption and commercial purposes. The primary reason people engage in Urban and Peri-urban Agriculture is to respond to unreliable, inadequate, and irregular access to food supplies as indicated by the Food and Agriculture Organization (2012). Around 870 million individuals are believed to have been malnourished in 2010–2012. This figure translates to 12.5% of the worldwide. By far, most of these, 852 million resides in developing countries (Bon 2010).

Farming in Kenyan towns is exponentially gaining significance as revealed by the agricultural activities on immediate environs of these towns and in the heart of the Kenyan towns (Corrigan, 2011). Agricultural activities have been witnessed alongside roads, railways, waterways, amidst roundabouts, and in parks, just to name a few. Farm animals such as goats, cows and sheep graze around in towns and open spots. Generally, if UPA is implemented effectively, it enhances farming efficiency, leading to enhanced food availability (Romani 2003, Evenson and Mwabu 2001).

Recent studies have revealed that 64% of people leaving in urban areas in Kenya practice urban agricultural farming (Hide & Kimani, 2015). Therefore, urban agriculture is a strategic tool adopted in a bid to

address household food insecurity, challenges of unemployment, and encouraging productive participation in local and urban development.

Urban and Peri-urban Agriculture (UPA) may be practised on farmstead (on-plot) or private land (owned, leased) land away from the dwelling places (off-plot), or on public land including parks, safeguarding areas, alongside roads, watercourses, and railways. As a result of urbanization, land for farming has decreased, raising concern for some households' food security and source of income. According to Food and Agriculture Organization, (FAO, 2012), families are believed to be secure when all family members have enough food to sustain themselves for the whole year and even have supplies that they can sell to get some source of income for sustenance.

Urban and Peri-urban Agriculture

Urbanization in Africa, has been more fast and riotous than in Europe with insufficiencies in direction and infrastructural improvement (Johnson, Suarez and Lundy, 2006). The quick urban development is regularly in conjunction with insufficient administration frameworks, infrastructural advancement, land organization, absence of mechanical and financial development has prompted what is regularly called the African urban emergency (Chiesura, 2004). Caleb et al. (2010) noted that urban and peri-urban zones have a fairly improved, for instance in areas surrounding streets, power and telephone lines.

There is rivalry amongst agricultural production and residential housing in Urban and peri-urban land utilizers, with the housing part having a higher monetary return. Urban and peri-urban farming is seen as basically transitory or transient land employments. In this way, there is a need to take a gander at UPA regarding Urban and Regional Planning (Hide and Kimani, 2015). Since Kenya is now occupied with the improvement of a far-reaching Land Policy, there is a chance to incorporate UPA as form of land utilization and enhancing source of income.

Farmers participating in Urban and Peri-urban Agriculture faces myriad of challenges including uncertainty of land tenure, size which are normally small pieces of land, marketing of the produce, theft, less productive soils, animal and crop diseases, among others.

Kericho County in Kenya is normally characterized by heavy rainfall, high altitude and fertile soil hence highly productive for agricultural activities. The County receives rainfall almost throughout the year with the main agricultural activities being Maize production, pineapples, horticultural crops, tea, and coffee, among others. Animal production is also widely practised in most parts of the county with dairy farming dominating. Friesians and Ayrshires are the common breeds for dairy in the area. Despite the county being endowed with these agricultural productivities, little research has been done to ascertain UAP agriculture's contribution in enhancing household income through the sale or market of the farm produce from this area.

Agricultural extension service gives imperative data, for example, designs in edit costs, new seed assortments, trim administration, and advertising. Familiarity with existing advancements produces successful request by giving a basic flag to enter appropriation frameworks (Davidson et al., 2001). Along these lines, expansion frameworks and information dissemination frameworks commonly strengthen the commitment of augmentation to agrarian profitability development, relying upon working information circulation frameworks and the other way around. Also, perfect expansion framework gives criticism from agriculturists to inquire about focuses.

Agricultural extension has undergone restructuring to counter the ever-varying circumstance of progression ahead. Ranchers in inaccessible zones are being urged to develop sustenance trims initially to guarantee nourishment security. Extension needs are being created in three noteworthy agro-environmental zones to help advances extraordinary possibilities for cultivating wages and family unit nourishment while keeping up the asset base's manageability. Owens et al. (2003) scrutinized the consequence of rural augmentation benefit on cultivating generation in Zimbabwe found that in the wake of controlling for natural efficiency qualities and rancher capacity either utilizing family unit settled impacts approximation or by incorporating a degree of agriculturist capacity and the town settled impacts, access to rural expansion administrations, characterized as accepting one to two visits for every year, increases the estimation of yield creation by around 15%.

An assortment of extension strategies should be utilized. Choice and utilization of suitable strategies keeping in mind the end goal to meet particular augmentation targets with different classifications of ranchers were important. They incorporate (a) singular homestead and home visits for development, (b) assemble strategies: shows to agriculturists' gatherings, field visits, (c) media usage to make mindfulness and achieve vast population at once, (d) training of farmers and (g) stakeholder's participation.

Market linkages enable the facilitation of agricultural products' flow between the different categories of marketing levels. According to Reardon *et al.* (2003), productive showcasing foundation, such as discount, retail, and getting together markets and storerooms, is basic for practical advertising, limiting present gather misfortunes and diminishing well-being dangers. Markets assume a noteworthy part in salary age, food security,

rustic improvement, creating provincial market linkages and sexual orientation issues. Organizers and approach creators need an inside and out comprehension of how to think of market systems that meet the network's social and monetary needs. Likewise, they ought to know how to pick a reasonable site for another market

Statement of the Problem

Although there is increasing responsiveness regarding the function of urban agriculture in the sector of food security and poverty eradication for the urban population, agriculture in the cities exists largely as an informal area that has not been incorporated to agricultural strategies or urban scheduling, which makes it exposed to danger while jeopardizing its continuity. Several studies have suggested that urban agriculture will continue to increasingly play an important role in livelihood activity in developing countries by contributing significantly to the household livelihood systems and the urban informal economy. Most of the government's effort to expand agriculture has been directed to rural areas, whereas urban and peri-urban farming which has significantly contributed to food security and household income has been neglected. There is also limited research, if any, that has been conducted to explore the impact of Urban and Peri-urban Agriculture and its effects on the household source of revenue and income. Therefore this study investigated the factors influencing farmers' access to the market on food produced on urban and peri-urban areas of Kericho County, Kenya.

II. Materials And Methods

The study was undertaken in four major towns within the four sub-counties of Kericho, namely Kericho, Kipkelion, Londiani and Litein, with the estimated population of 9000. Kericho County is one of the 47 counties in Kenya. Farming is the county's dominant activity with tea forming the largest agricultural activity. Land tenure in the county is individually owned and small scale farming is practised. There were two target populations for this study. The first populations were 3487 UPA farmers in Kericho County of different age, gender, educational level, according to the Ministry of Agriculture and Fisheries, Economic reviews (2015). The second populations were 30 extension agricultural county staff agents who were involved in UPA activities. Therefore, the researcher targeted 3487 Urban and peri-urban agriculturalists and 30 extension agents.

The study was based on a descriptive research design. This design was chosen because it helps answer the questions; what, why, when, where and how? And thus provide in-depth insights into the matter being investigated. Therefore, this research design was used to make inferences about the factors influencing UPA farmers' access to market in Kericho County through studying a representative sample of the population.

The study used interview plans and questionnaires to gather data. Kothari (2014) noted that the use of questionnaires had been widely utilized as a part of a scope of business and other related research because of its fair-minded nature and capacity to reach and get a response from many respondents. The interview schedule was utilized to gather data from the Ministry of Agriculture staff. The interview schedule was preferred because they were easy to interpret and complement the questionnaire, making them clear and understandable. The study was conducted between March and June 2019.

III. Results And Discussion

From the total of 341 questionnaires which were administered, 298 questionnaires were returned, representing a response rate of 76.5%.

Table 1: Response Rate of respondents

Response	Frequency	Percentage
Expected responses	341	100
Received responses	298	76
Un-received	43	14

Source; Researcher 2019

The questionnaires were administered, then the respondents were given time to complete them and thereafter they were collected. The reason for this was that the method used to allocate questionnaires was a drop-and-pick technique where the scholar distributed the questionnaires and waited for the respondents to complete it and thereafter took back the filled questionnaires. According to Kothari (2014), it is assumed that feedback rating at 50% is considered as average, 60-70% is satisfactory while above 70% is an outstanding rate of response. This response rate was regarded as an excellent illustration of the respondents to give information for examination and generation of effective conclusions. The sample size was illustrative of the initial sample to a high degree, ensuring the validity of the findings. The outcomes of the findings are presented in Table 1.

Furthermore, 30 officials from the department of agriculture were reached for the interview, whereby they gave more insights on questions contained in the questionnaires.

Distribution of respondents by gender

In order to determine the gender of farmers engaged in urban and peri-urban farming, the respondents were requested to specify their sex and the responses captured as shown in figure 1.

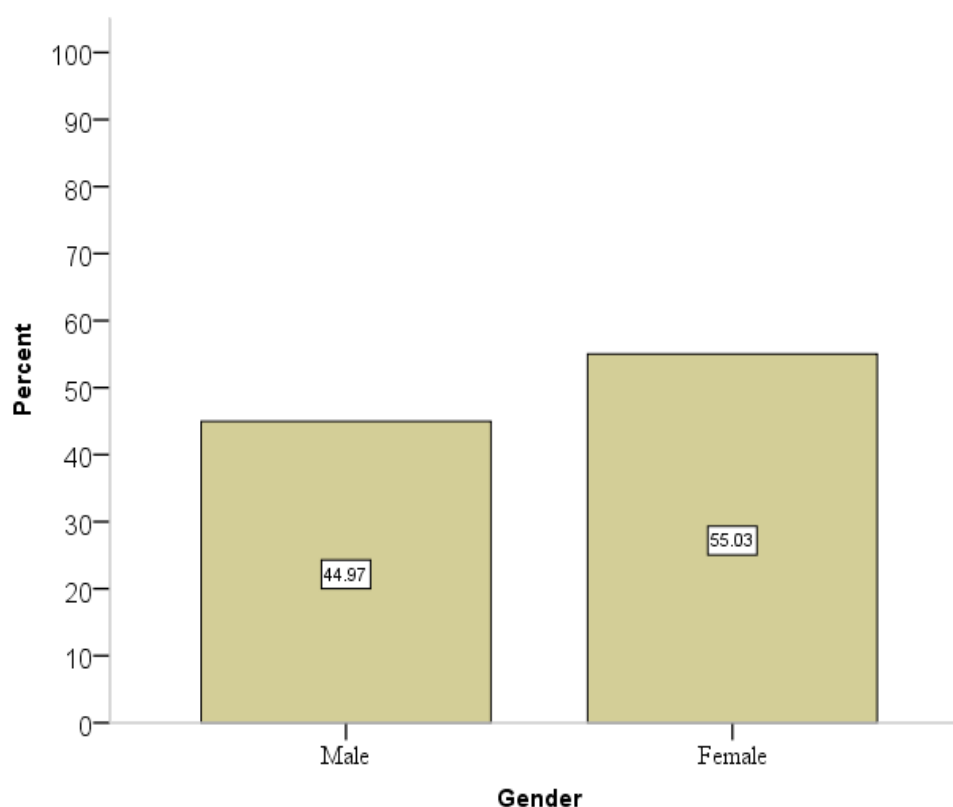


Figure 1: Respondents gender per percentage

The findings reveal that many of respondents practising urban and peri-urban farming were females as shown by the number of percentage of 55.03% of the female as compared to 44.97% of male. However, the margin between the two categories is not that large, and this shows that both genders are actively involved in urban and peri-urban farming. The findings disagree with the findings of Mwangi (2017) who found out that majority of those who are practicing UAP farming were masculine.

Distribution of respondents by age

The researcher wanted to know the age of the respondents. The findings are shown in Table 2

Table 2: Distribution of respondents by age

	Frequency	Percentage
Below 25 years	27	9.1
26-35 years	69	23.2
36-45 years	106	35.6
46-55 years	72	24.2
Over 55 years	24	8.1
Total	298	100.0

The results show that majority of the respondents were aged 36-45 years, (35.6% while the least were over 55 years (8.1%). This suggests that most farmers were aged 36 years and above, implying that younger farmers are more willing to engage in urban agriculture than older ones. It may also infer that urban agriculture is a recent phenomenon.

Distribution of respondent's by farm produce

The researcher wanted to know the nature of urban and peri-urban farming practised by agriculturalists in Kericho County, and the outcomes were as shown in Figure 2.

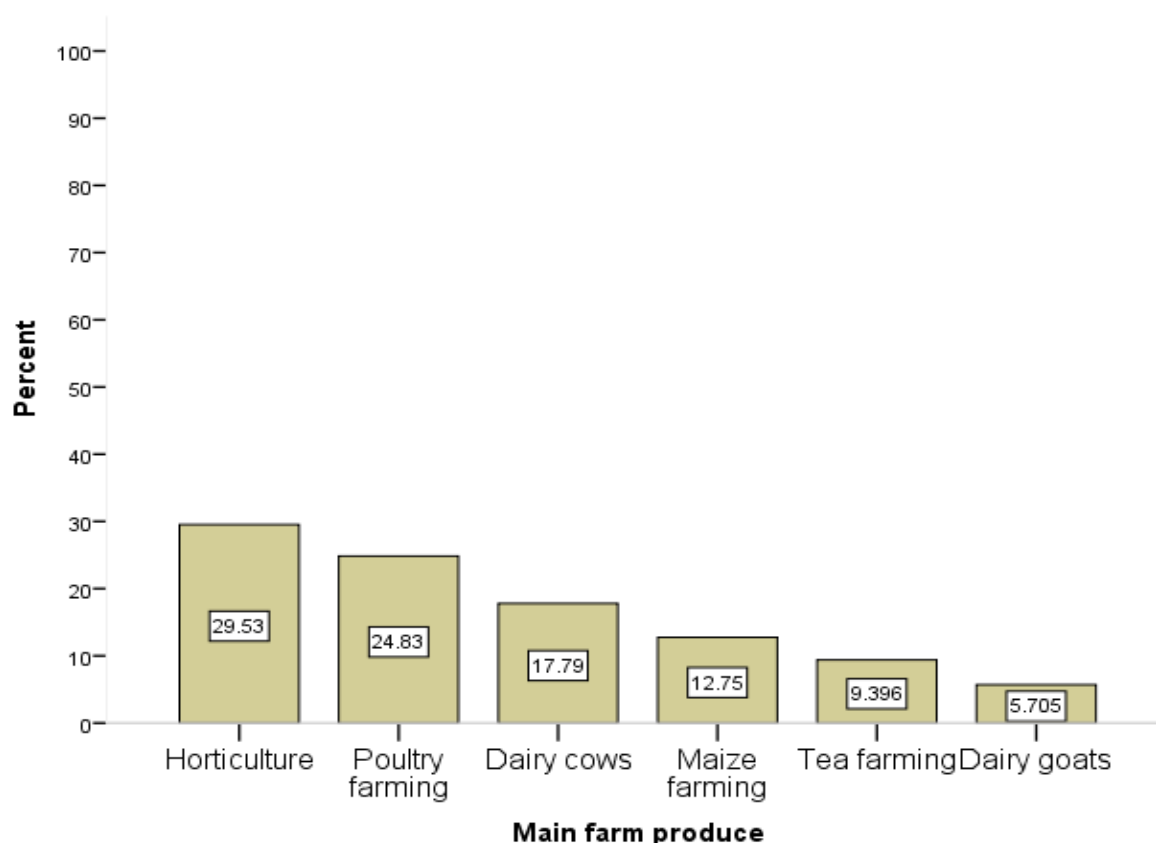


Figure 2: Distribution of types of farming in UPA per percentage

The results reveal that 29.53% of the respondents practice horticultural farming, 24.83% poultry farming, and 17.79% kept dairy cows, 12.75% maize farming, 9.396 tea farming and 5.705% dairy goats. This means that majority of the farmers in Kericho County mainly practice horticulture and poultry farming in urban and peri-urban such as Kericho town, Londiani, Kipkelion and Litein. The finding agrees with that of Ravertz (2000) who found that farmers in urban areas mostly produced horticulture and poultry products. He further found out that urban nourishments can be diverse and of more nutrition benefits than the rural ones for individuals who have ways of accessing various food.

Distribution of respondent's by experience

As indicated in Table3, 37.6% of respondents had an experience of 6-9 years, 22.8% had 2-5 years, 22.5% had 10-12 years, 10.7% had over 12 years and 6.4 had less than one year of experience.

Table 3: Respondent's by experience in UPA by frequency

	Frequency	Percentage
Less than 1 year	19	6.4
2-5 years	68	22.8
6-9 years	112	37.6
10-12 years	67	22.5
Over 12 years	32	10.7
Total	298	100.0

This is a signal that a substantial number of the respondents had undertaken Urban and Peri-urban Agriculture for a significant period of time, and consequently, they were in a spot to provide dependable information relevant to this study. This indicates that many of the participants had enough knowledge of Urban and peri-urban farming.

Distribution of respondent's by education

The participants were requested to specify their peak educational level; the results are shown in Table 4.

Table 4: Respondents education level

	Frequency	Percentage
Illiterate	17	5.7
Kenya Certificate of Primary Education	20	6.7
Kenya Certificate of Secondary Education	123	41.3
Diploma	60	20.1
Degree	60	20.1
Masters	18	6.0
Total	298	100.0

Source; Researcher 2019

From the study results, 41.3% of the respondents had attained Kenya Certificate of Secondary Education (KCSE) level, 20.1 had a college diploma and degree credentials, while 6.7% of the participants showed they had achieved Kenya Certificate of Primary Education (KCPE) level, and 6% of the participants showed they had reached masters level of education. This suggests that many of the participants were well-educated, and consequently, they were in a position to answer the study question with comfort. The findings differ with that Kenya of Economic Survey (2013), which reported that those who practised Urban and Peri-urban Agriculture had fairly low education achievement as compared to middle-income people. Nearly 65% of the population had only primary or half-finished secondary education, whereas 10% has never been to school.

Access to market

Access to the market place allows the distribution of agricultural products, and it is one of the important components of food chain management. The participants were requested to give their responses to various market access indicators. The outcomes were as indicated in Table 5.

Table 5: Market outlets for farm produce by percentage

	Frequency	Percentage
Supermarket	23	7.7
Open Market Centers	104	34.9
Neighbourhood	53	17.8
Middlemen	56	18.8
Markets outside the county	62	20.8
Total	298	100.0

The results show that 34.9% of respondents produced and sell the produce in the open market, 20.8% sells the produce outside the county, 18.8% sells their produce to the middlemen, 17.8% sells their produce to the neighbourhood, and 7.7% sells their produce to the supermarkets. This implies that most farmers produced for local consumption while the rest were sold to various market outlets. Local consumption is significant as it helps alleviate food insecurity. On the other hand, the export of produce ensures more income to the farmer given competitive prices offered at the international market. Furthermore, the country is able to earn a substantial foreign currency due to the export business. The findings are in line with that of Kinuthia (2008) who found out that urban farming has the possibility to flourish in most recent municipalities of the world, because of its diverse roles and links with city issues. Cities offer easy access to the market place and the dominant high demand for food.

The hypothesis corresponding to this study stated that “*There is no statistically significant influence of access to the market on the contribution of Urban and Peri-urban Agriculture on household food security in Kericho County.*” The results for the chi-square test are presented in Table 6.

Table 6: Chi-square results of access to market and household food security

Variable	N	Chi-square value χ^2	Significant level (P-0.05)
Access to market	298	639.701	0.000

As shown in Table 6, the chi-square test shows $P=0.000<0.05$. Since this value is less than 0.05, the study fails hence it rejects the null hypothesis that states that “there is no statistically significant influence of access to the market on the contribution of Urban and Peri-urban Agriculture on household food security in

Kericho County” and accept the alternative hypothesis which is that “there is a statistically significant influence of access to the market on the contribution of Urban and Peri-urban Agriculture on household food security in Kericho County.

IV. Conclusion, Recommendation And Further Studies

Most farmers (82.7%) had no specific buyer for their produce, with (71%) of them targeting the local market. Most farmers (69.9%) sold their produce to direct consumers. Of significance, no farmer was found to be selling their produce to cooperatives. Furthermore, most farmers (80%) preferred to dispose of their produce through market sellers and grain millers. On availability of storage facilities, very few farmers (29%) had this important resource, the general store and home store being the most adopted one. Again, most farmers (75%) lacked the means to preserve their produce. The packaging was the only value addition practice employed by some farmers (7.1%). However, the majority (92.1%) did not bother to add value to their produce. Most farmers (88%) stated that they experienced very few difficulties during the marketing of their produce. The nature of market difficulty found to be affecting most of the farmers was poor road network as recorded by 96% of them. On pricing, most farmers (80%) were not involved in setting prices of their produce. Furthermore, availability or seasonality of the produce was recorded as the most influential price determinant as captured by 50.6% of farmers. Other important price determinants included brokers and prevailing market prices. Lastly, it was concluded that access to the market by most of the farmers was still a challenge despite them being close to the market places. The study found that majority of the farmers was selling their produce to individuals for re-sale.

The study recommends that farmers should be educated on the need to access the markets directly within their locations. This is to ensure that their produce fetches the maximum prices and ensure good distribution and exchange of various agricultural products within the available markets.

The study also recommends that farmers should be educated on the need to access the markets directly within their locations. It further recommends that the county government of Kericho should establish a good market network for farmers by identifying markets for local production.

Finally, comparative research studies should be conducted among different counties in Kenya to find out on how urban and peri-urban farmers are accessing market for their produce. This is because the present study concentrated only on towns within Kericho County.

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Richard Kipkoech Rotich, et. al. "Factors influencing farmers' access to the market on food produced on urban and peri-urban areas of Kericho County, Kenya." *IOSR Journal of Agriculture and Veterinary Science (IOSR-JAVS)*, 14(10), 2021, pp. 41-48.