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Access to land and youth involvement in agricultural value chains in Kenya

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Abstract

The study investigated the relationship between land accessibility and youth participation in the agricultural value chain in Kakamega County, Kenya. Utilizing a stratified questionnaire for data collection from 240 respondents, chosen through stratified and simple random sampling, the research analyzed data to generate frequencies, percentages, and correlations. Results showed that limited access to land is a significant barrier for youth involvement in agriculture, impacting all stages of the value chain except consumption. This study is novel in its comprehensive analysis of the entire agricultural value chain, from production to consumption, and its focuses on the youth, a crucial demographic in Kenya. The findings highlight the importance of land accessibility for the youth's active participation and the potential economic benefits thereof. The insights are valuable for policymakers and donor organizations in crafting strategies to improve land access for young people, thus enhancing their livelihoods and fostering entrepreneurial growth in the most promising segments of the agricultural value chain.

Keywords: Youth; Food Systems; Involvement; Agricultural Value Chains; Land; Kenya.

1. Introduction

In Kenya, the agricultural sector is predominantly operated by older individuals, with the average age of Kenyan farmers hovering around 59-60 years. This trend can be attributed to the escalating movement of Kenyan youth from rural to urban areas in pursuit of white-collar employment opportunities. Despite this, the issue of youth unemployment remains a mounting concern in Kenya (Kising'u, 2016).

Kakamega County, endowed with a diverse array of agricultural resources, has been unable to make substantial strides in agricultural output, despite its potential to drive agricultural productivity within the country. Notably, the yield of maize has remained stagnant at 2 tons per hectare since 1989 (Rogito et al., 2020). Although the County benefits from abundant rainfall and fertile soil, the youth populace has been slow to embrace farming due to the persisting disparities in resource accessibility (Domeher & Abdulai, 2018). While Kenya's Constitution of 2010 outlines equal rights to land access for all citizens, the effective implementation of these rights remains uneven across various regions and communities (Fairbairn, 2013). This study was to examine the correlation between land access and participation in the food systems among the youth in Kakamega, Kenya. The central research inquiry focused on elucidating the nature of the relationship between land accessibility and the engagement of youth in the value chain within Kakamega County.

According to Rogito et al. (2020), the value chain is a sequence of activities that facilitates the development of a product or service from its inception. It involves the amalgamation of production factors in agriculture to meet the market demands for the final product or service. This research recognizes the agricultural value chain as comprising activities ranging from input supply, production, distribution, transportation, processing, wholesaling, retailing to final consumption. The definition of youth varies, but it is commonly associated with specific age brackets; however, there is

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no consensus on the lower and upper age limits. In line with the Kenya Youth Enterprise Development Fund, this study refers to youth as individuals aged between 18 and 35 years (Afande et al., 2015).

The control and accessibility of crucial agribusiness assets, such as land, pose a challenge for the youth, as land ownership is often retained by parents (Cotula, 2013). Frequently, young people find themselves with either no land or small parcels, as successful agriculture typically requires significant expanses of land (Osti et al., 2015). Globally, youth often encounter limitations in accessing land, as seen in cases such as the United Kingdom, where high land prices and limited farm availability prevail (Angus et al., 2009). Traditional systems in many parts of the world grant land ownership exclusively to the head of the family, thereby restricting the youth's ability to control and utilize land for farming purposes (Michalscheck et al., 2020).

Despite the abundance of agricultural resources in Kakamega County, agricultural productivity has not shown significant improvement over time, even though the potential for stimulating agricultural growth in Kenya exists. Kakamega County benefits from ample rainfall and fertile soil; however, the youth have been slow to embrace farming due to inequalities in resource access (Charoenratana and Shinohara, 2018). Kakamega county had a substantial unemployed population, particularly among those aged 18-34 years. As a result, sectors like boda boda, cottage industries, and Jua Kali constituted a significant number of self-employed individuals, while the engagement of the youth in agriculture remained relatively low. The increasing trend of youth seeking credit to invest in non-agricultural activities such as the "boda boda" (motorcycle) business and various forms of gambling is a concern (Ehebrecht et al., 2018; Rogito et al., 2020). Encouraging youth involvement in agribusiness could potentially deter undesirable practices such as crime, sexual immorality, gambling, and substance abuse (Fox et al., 2016).

In customary African societies, agricultural activities have traditionally been associated with older men, who oversee all farming operations and the sale of produce (Fischer & Qaim, 2012). Consequently, suboptimal crop decisions are often made, leading to comparatively lower yields compared to what could be achieved with the collective involvement of the entire family and the effective utilization of resources (Jayne et al., 2014). Furthermore, social norms and customary laws in many African countries dictate how land is passed down across generations, often working against the interests of rural youth ((Djurfeldt,2020).

Land tenure issues continue to impede many young people from participating in agriculture, as several of them utilize land without exclusive ownership rights (Oluoko et al., 2019). Similarly, reluctance among older individuals to share land with younger generations remains prevalent, as seen in countries like Pakistan, where concerns about equitable distribution prevail (Abbink, 2011). In several rural communities, young people, particularly in countries like Ethiopia and Mozambique, often lack legal ownership despite constitutional provisions granting them access and control over communal land (Rogito, 2020; Osti et al., 2015).

The issue of gender exacerbates the challenges of land access, particularly for young women (Yisak et al., 2012). The Gender and Land Rights Database maintained by FAO indicates global gender disparities in landholdings, where in countries like Mali, only a small percentage of land is owned by women (FAO, 2013). This inequality is often reinforced by both customary and statutory laws governing land rights in many societies (Sala et al., 2019).

In Kenya, traditional laws often deny women the right to own or utilize land, as land is typically inherited by men, and women gain user rights through their association with male relatives (Mwaura, 2017). This prevailing cultural framework significantly hinders young women's access to land for agricultural purposes (Ombogo, 2017). Despite the progressive provisions in the 2010 Constitution of Kenya, which emphasize human rights and specifically address land reforms, challenges persist in ensuring youth's access to land as a resource for sustainable agriculture (Swarts & Aliber, 2013). Youth access to land operates on two levels: physical land use and decision-making provisions (Kijima & Tabedayo, 2020). Customary and statutory laws govern land rights across various regions and communities in Kenya, often leading to situations where many youths cultivate family land without reaping any benefits (Boye & Kaarhus, 2011).

Despite the emerging issues concerning youth's limited involvement in agriculture, there has been a lack of comprehensive research to gauge youth perspectives, aspirations, and sentiments toward agribusiness. The burgeoning challenges within society, often stemming from unemployment, could be alleviated by revitalizing the agricultural sector and integrating youth participation. Through full engagement in the agricultural sector, young people could potentially steer clear of socially unacceptable practices. The study focused on evaluating the correlation between land accessibility and the engagement of youth in agricultural value chains.

2. Materials and methods

This research was conducted within Kakamega County, targeting the youth farmers residing in this specific geographical region. The study encompassed all 12 Sub Counties within the county, which was chosen due to its predominant economic activity of farming. This decision was informed by the comprehensive data available for the study within the Kakamega County Development Profile (2017), along with considerations of cultural diversity, ease of access, and population stability. Notably, Kakamega County boasts a total of 897 farmer groups, out of which 146 are youth groups, distributed across the 12 sub-counties. Each of these youth groups is comprised of 15 to 20 members, reflecting the agricultural vibrancy within the region (Kakamega County Development Profile, 2017). The study directly involved 2453 youth farmers as participants. The determination of the total sample size was achieved using Taro Yamane's formula, which is well-suited for data sets presumed to have a normal distribution, thereby accommodating the diverse groups of individuals under consideration. To ensure the study's accuracy, an acceptable sampling error of 6.5% was utilized, in alignment with Opie's (2019) recommendation of maintaining a sample size with less than a 10% error margin.

The formula is as shown:

$$n = \frac{N}{1 + Ne^2}$$

In which: N=population size- 2453 e= sampling error 0.065 n=sample size

$$\text{Therefore: } n = \frac{2453}{1+2453(0.065)^2}$$

Consequently, to achieve a 6.5% sampling error, the study identified 240 respondents, exceeding the minimum acceptable number of 216. A combination of simple random and stratified random sampling techniques was employed. The population was stratified into the 12 sub-counties within the area, from which 240 youth participants were randomly selected using a database from the social service department, facilitating the distribution of questionnaires. This approach enabled the collection of vital and relevant information from a diverse range of individuals, as emphasized by Opie (2019).

To ensure the study's quality, instrument piloting was conducted in the neighboring Vihiga County. Questionnaires were administered to a randomly selected sample of 25 respondents as a preliminary test before the commencement of the actual research. The accuracy of the results was carefully examined by testing and retesting the questionnaires with the randomly chosen participants. This process aimed to prevent any misinterpretation of the questions by the respondents, eliminate irrelevant codes and terminologies, and rectify any inconsistent instructions provided to the participants. In terms of instrument validity, the study relied on the Content Valid Index (CVI) to ensure the consistency, legitimacy, and significance of the relevant items concerning the research objectives compared to the overall number of items. This is relevant items to the objectives over the overall number of items.

$$CVI = \frac{\text{Relevant Items}}{\text{verall number of items}}$$

According to Opie (2019), items in the instrument are legal and acceptable when the CVI is 0.7 and above.

For this study,

$$\frac{\text{Relevant Items}}{\text{verall number of items}} = \frac{25}{27} = 0.92$$

The instrument's validity was confirmed with a CVI of 0.92, surpassing the threshold of 0.7, thus validating the instrument's credibility. Moreover, the study incorporated input from both experts in the field and the supervisor. Consultation with a subject-matter expert ensured comprehensive coverage of all the themes outlined in the research objectives, aligning with Opie's (2019) assertion that content validity is bolstered through expert evaluations.

For data collection, the study utilized a structured questionnaire as the primary tool. This questionnaire was administered face-to-face to the 240 youth farmers in Kakamega County, facilitated by two trained research assistants. The completed questionnaires were subsequently collected and the data was captured digitally for streamlined analysis.

Descriptive statistics, aided by Eviews7 software, were employed to analyze the collected data. The study derived the overall trends of the variables from the descriptive data, including frequencies, means, standard deviations, and percentages, presented in tabular format. In order to assess the relationship between the resources in question and the involvement in the agricultural value chain, the study utilized the Pearson correlation coefficient (Opie, 2019).

3. Results and discussion

Table 1 Respondents profile

General Information		F	%	Mean	S. D
Gender	Male	134	54.8	47.24%	0.494
	Female	106	44.2		
	Other	0	0		
Age	15-20	33	13.8	73.04%	0.597
	20-30	140	58.3		
	30+	67	27.9		
Education Level	No Formal Education	47	19.6	60.00%	0.986
	Primary	101	42.1		
	Secondary	59	24.6		
	Post-Secondary	33	13.8		
Marital Status	Single	145	60.4	51.95%	0.721
	Married	64	26.7		
	Other	31	12.9		
Main Occupation	Business	23	9.6	68.95%	0.776
	Employed	39	16.3		
	Farming	151	62.9		
	Other	27	11.3		

The study findings revealed that there was a slightly higher representation of male respondents compared to female respondents. However, the distribution was relatively equitable, with 54.8% being male and 45.2% being female. The low standard deviation (0.494) suggested a balanced gender distribution within the sample. The majority of the participants fell within the (20-30) age bracket, which aligns with the designated youth age range under examination. Regarding educational background, respondents were distributed across various levels, including those with no formal education, primary, secondary, and tertiary education. The bulk of the participants had attained education levels ranging from primary to secondary education. Most of the respondents were single, and according to table 1, 62.9% identified farming as their primary occupation. Notably, the standard deviation for the education level of the youth farmers was relatively high (0.986), indicating a significant variation in educational attainment among the youth farmers. Among the participants, 151 individuals considered farming as their main occupation, while others were engaged in either employment or business, with farming serving as a supplementary source of income. These results collectively suggest that the sample adequately represents the target population for drawing conclusions related to the study objectives within Kakamega County.

The study findings indicated that youth participation across the agricultural value chain predominantly centered on their roles as final consumers, transporters, and processors. Notably, their involvement in ownership of processing plants, as well as in wholesale and retail activities, was comparatively low, with a recorded percentage of 26%. Conversely, their engagement in production and the supply of essential inputs such as seeds, fertilizers, and chemicals was above the average, as highlighted in table 1. Overall, the study underscored that youth primarily function as

consumers and are predominantly employed in processing plants. This trend is concerning, especially given that the study sample was drawn from youth farmers. The study aimed to assess the extent of youth involvement throughout the agricultural value chain.

Table 2 Youth involvement in Agricultural value chains

STATEMENT		N	SE	LE	A	%	S.D
Producers Youth involvement as producers	F	45	145	34	16	(52%)	0.769
	%	18.8	60.4	14.2	6.7		
Input Suppliers Youth as suppliers of fertilizers	F	39	143	34	24	(54%)	0.821
	%	16.3	59.6	14.2	10.0		
Youth as suppliers of seeds	F	41	133	44	22	(55%)	0.826
	%	17.1	55.4	18.3	9.2		
Youth as suppliers of chemicals	F	44	141	37	18	(53%)	0.791
	%	18.3	58.8	15.4	7.5		
Transporters Youth as transporters of agro products	F	14	63	104	59	(71%)	0.819
	%	5.8	26.3	43.3	24.6		
Distributors Youth as distributors of agro products	F	23	81	103	33	(65%)	0.841
	%	9.6	33.8	42.9	13.8		
Processors Do youth own processing plants	F	224	15	1	0	(26%)	0.273
	%	93.3	6.3	0.4	0.0		
Processors Youth as processors	F	34	43	113	50	(69%)	0.945
	%	14.2	17.9	47.1	20.8		
Whole Sellers Youth as wholesalers	F	89	98	45	8	(47%)	0.825
	%	37.1	40.8	18.8	3.3		
Retailers Youth as retailers	F	121	89	26	4	(41%)	0.742
	%	50.4	37.1	10.8	1.7		
Final Consumers Youth as consumers	F	0	0	13	227	(98.6%)	0.227
	%	0.0	0.0	5.4	94.6		

Key: F-frequency S.D-Standard deviation %-percentage N-Never SE-Small Extend LE-Large Extend A-Always ; Source: Field Data 2019

The results revealed that a significant percentage (98.1%) of the youth primarily functioned as final consumers within the agricultural value chain, with a low standard deviation (0.227), indicating a consistent pattern of youth involvement in consumer roles. However, ownership of processing plants among the youth was notably low, as evidenced by a low mean of 26% and a corresponding low standard deviation (0.273), signifying that a majority of the youth in Kakamega were not involved in the ownership of processing plants. Nonetheless, it was noted that a substantial proportion of the youth (69%) were employed in processing plants, although the high standard deviation (0.945) suggested a significant variation in responses regarding their involvement in this particular aspect of the value chain.

The research findings highlight the significant challenge faced by youth in terms of land ownership, with a substantial 93% of the youth not owning land. The predominant ownership of land by the family head was reinforced by a high response rate of 96%, accompanied by a low standard deviation of 0.469, signifying the universality of this trend across all the sub-counties in Kakamega County and among its diverse cultural groups. Acquiring land through purchase was reported as a challenging endeavor by 87% of the respondents, while an overwhelming 93% indicated that accessing land through leasing and inheritance also presented significant obstacles for the youth in Kakamega County.

Table 3 Youth access to land and land use in Kakamega county

STATEMENT		SD	D	A	SA	MEAN	S.D
Youth do not possess land	F	3	7	37	193	(93%)	0.568
	%	1.3	2.9	15.4	80.4		
Youth do not get land through purchasing	F	6	9	36	189	(87%)	0.661
	%	2.5	3.8	15.0	78.8		
Youth do not acquire land through leasing	F	7	9	87	137	(93%)	0.708
	%	2.9	3.8	36.3	57.1		
Young women do not secure land by Inheritance	F	9	8	20	203	(93%)	0.698
	%	3.8	3.3	8.3	84.6		
Youth do not have user privileges over land	F	17	28	31	164	(86%)	0.952
	%	7.1	11.7	12.9	68.3		
The land is in the name of the head of the family	F	0	9	24	207	(96%)	0.469
	%	0.0	3.8	10.0	86.3		
Youth access to land will enhance farming	F	0	6	27	207	(71%)	0.432
	%	0.0	2.5	11.3	86.3		
Society has no authority In land allocation in the family	F	185	31	21	3	(34%)	0.691
	%	77.1	12.9	8.8	1.3		
Youth judgements over land will enhance farming.	F	12	15	24	189	(82%)	0.814
	%	5.0	6.2	10.0	78.8		

Key: S.D-Standard deviation %-percentage F-frequency SD-Strongly Disagree D- Disagree A- Agree SA- Strongly Agree
Source: Field Data 2019

The issue of land use user rights emerged as a notable challenge in the region, with 86% of the respondents underscoring this concern. Furthermore, a striking 93% of the participants highlighted the difficulties young women face in securing land through inheritance. Among the 240 sampled youth farmers, a substantial 207 individuals (86%) expressed their belief that enhancing youth access to land could greatly improve agricultural productivity. Moreover, 71% of the respondents emphasized that improving youth access to land would invariably contribute to the overall advancement of farming practices.

The study unveiled a strong positive correlation between youth's access to land and their management of land use, particularly in relation to their involvement in consumption within the agricultural value chain. Additionally, a weak positive correlation was observed between access to land and youth engagement in the transportation segment of the agricultural value chain. Conversely, a strong negative correlation was detected between youth access to land and their participation in wholesaling and retailing within the agricultural value chain. Furthermore, a negative correlation was identified between access to land and youth involvement in production, input supply, and processing, as indicated in table 4. The examination of the relationship between access to land and land use management, along with youth participation in the agricultural value chain, illustrated a strong positive correlation between youth's lack of land ownership, challenges in land acquisition through leasing and purchasing, and their participation in final consumption, as highlighted in table 3.

The research underscores the limited access to land for agricultural productivity among the youth in Kakamega County. Land inheritance poses a challenge, particularly as young individuals attain the age for land inheritance while still in their adulthood. Older men display reluctance in relinquishing land to the younger generation, with young women being disproportionately affected due to the difficulty they face in accessing land traditionally owned by males in the county. The restricted access to land adversely impacts youth engagement in various sectors of the agricultural value chain, including primary production, input supply, distribution, and wholesale and retail activities, leading to their limited involvement in agricultural value chains within Kakamega County, as outlined in the preceding analysis. Consequently,

this limitation on land access translates to youth primarily assuming the role of consumers rather than producers of agricultural products.

Table 4 Correlation between access to land and land use in and youth involvement in agricultural value chains in Kakamega County

	Production	Input Supply	Transport	Distribution	Processing	Whole Selling	Retailing	Consumption
Youth do not own land	-0.570	-0.492	0.133	0.347	-0.460	-0.910	-0.797	0.993
Youth do not acquire land through buying	-0.567	-0.490	0.119	0.359	-0.450	-0.905	-0.788	0.995
Youth do not acquire land through leasing	-0.692	-0.622	0.485	0.004	-0.605	-0.994	-0.962	0.840
Young ladies do not acquire land through Inheritance	-0.537	-0.461	0.027	0.437	-0.390	-0.862	-0.724	1.000
Young ladies do not secure land by inheritance	-0.488	-0.408	0.065	0.393	-0.443	-0.854	-0.740	0.998
The land is under the name of the head of the family	-0.524	-0.445	0.081	0.387	-0.440	-0.875	-0.757	0.999
Youth do not have user privileges over land	-0.056	-0.137	-0.842	0.604	0.998	0.562	0.821	-0.434
In land allocation in the family Society has no authority	-0.056	-0.140	-0.807	-0.557	0.996	0.577	0.824	-0.478
The land is in the name of head of the family	-0.114	-0.194	-0.838	-0.624	1.000	0.515	0.786	-0.398

Source: field data 2019

Despite limited access to land, the transportation of agricultural produce remains largely unaffected, as youth in Kakamega County resort to utilizing motorcycles (boda boda) for transportation due to the lack of land. This finding corroborates the observations made by Gichimu & Njeru (2014), who also highlighted that limited access to land in Kenya leads to reduced productivity and decreased participation by the youth in the agricultural value chain. Moreover, these findings align with the Weberian theory, emphasizing that to effect change in society, youth require access to wealth, power, and prestige, with land serving as a critical component of wealth that signifies prestige and power.

4. Conclusions

Limited access to land severely impedes the active participation of youth in the agricultural value chain. Young individuals keen on pursuing agricultural endeavors often encounter difficulties in securing land, compelling them to seek livelihoods in other sectors of the economy. Effective utilization of youth access to land and adept land use management bears the potential to significantly boost agricultural productivity in Kakamega County.

According to the Food and Agriculture Organization (FAO) (2015), addressing inequalities within the sector could potentially raise agricultural output by 20-30%. Failure to rectify these inequalities and augment the proportion of youth involved in agriculture could curtail growth, limit output, and inadvertently hamper the efficacy of the Agricultural Value Chains. The agricultural business sector presents a promising avenue for providing meaningful employment opportunities for the substantial number of underemployed and unemployed young people.

Based on the research findings, we recommend the following:

- The government should reinforce and synchronize legal frameworks with customary land practices, ensuring the inclusion of individuals of all genders and age groups in this process.
- Implementation of comprehensive land ownership policies should be prioritized by the government.

- Government authorities and investors should identify sizable land tracts and allocate them to youth or youth groups interested in farming for both sustenance and livelihood, with charges deducted during marketing.
- Within households, both male and female smallholder farmers should adopt a family-based farming approach that adequately involves the youth. Household leaders should strategize and manage family land for optimized agricultural production.
- Facilitating land ownership among young people is essential to attract them to the field of agriculture.

The research findings underscore the significance of granting youth equivalent control, accessibility, and land rights as other members of society. Realizing improved agricultural productivity is feasible through increased yields and subsequently enhanced income from agribusiness. However, these positive outcomes hinge on bolstering youth access to land. The insights presented in this study are pertinent to both governmental bodies (at both county and national levels) and development organizations focused on youth engagement in agriculture, as well as stakeholders involved in land use management, all geared towards enhancing agricultural productivity.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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