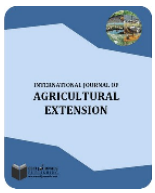

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EFFECT OF FARM SUCCESSION ON COFFEE PRODUCTION IN KISII COUNTY KENYA

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A B S T R A C T

Coffee is the world's most consumed drink next to water and second most traded commodity to oil. It is fourth GDP earner and employs 600,000 households in Kenya. Coffee production is dependent on various aspects of agronomic practices and farm succession. However, little information exists on the effect of farm succession on coffee production. Coffee farmers are elderly (Average 55 years), and reluctant to release coffee farms to the new generation, leading to reduced adoption of new technologies and reduced coffee production from 130,000 MT in 1989 to 50,000 MT in 2012 despite its profitability and opportunity of expansion. The objective of the research study was to establish the effect of farm succession on coffee production in Kisii County. Simple random sampling and purposive sampling techniques were employed to obtain quantitative and qualitative data using structured questionnaires, interviews, focus group discussion and case studies on a sample of 227 respondents from a population of 69,000 coffee farmers. Research data were analyzed using descriptive and Pearson correlation statistics at 5% significance level, with aid of SPSS and Microsoft excel programs and results reported using tables, charts and descriptions. The research findings indicated a weak significant correlation between farm succession and coffee production, P>0.05, average production of 1.77 kilograms of cherry and standard deviation of 3.23. The research findings are aimed at filling policy gaps by encouraging agricultural extension practitioners to encourage the youth to participate in coffee farming and encourage the elderly farmers to mentor the youth to take up farming. The coffee farmers need to be encouraged to widen the choice of farm successors beyond family members and beyond gender imbalance in order to encourage spurring of coffee production, thus increasing production and profitability.

Keywords: Coffee production, farmers, succession, agricultural practices and management.

INTRODUCTION:

Farm succession by the next generation is important in determining the industry structure and the total number of farmers, and has an effect on farm families that rely heavily on intergenerational succession (Mishra et al., 2010). Mishra noted that, in addition to farm, operator, and off-farm work variables, succession arrangement has a positive and significant effect on financial performance, both in profit margins and returns to equity (Morris *et al.,* 1997). The identification of a successor opens farm perspectives, which influence farm management during the current life cycle (Lobley *et al.*, 2010). Within the same phase of their lifecycle, farms can differ from each other, because of different expectations about the future (Mishra *et al.,* 2010). Calus and Huylenbroeck (2008) established that the difference between farms is characterized by the Total Farm Assets (TFA) and crop management; positively correlated with the designation of a farm successor.

The land ownership and its transfer to the next generation influence coffee farming. In Kenya, formal individualization of land has been in place since independence. The 1954 Swynnerton Plan granted secure individual land titles to African farmers, and the Plan was reinforced further by the Native Lands Registration Ordinance 1959, which was replaced later by the Registered Land Act 1963 and the Land Adjudication Act 1968 (Place and Migot-Adholla, 1998; Sifuna, 2009). While the registration process might have increased

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tenure security for many land owners (Waiganjo *et al*., 2001). It has also created new forms of disputes, such as challenges gender land ownership imbalance (Ntabo, 2011). Moreover, the high cost of registration has discouraged updating the registrations after land transactions, such as inheritance and sales (Jayne *et al*., 2003; Yamano, 2005; Sottomayor *et al*., 2011).

Households become more worried about future conflicts on unregistered parcels than registered parcels (Yamano, 2005; Too, 2013). In Uganda, Deininger, (2003) found that households headed by female and widows experienced more land conflicts than male headed households (Yamano, 2005). Widows experience conflicts with the deceased husbands' relatives. The prevailing practice after the death of a husband in Kenya is for the wife of the deceased husband holding land in trust for her male children because customary laws rarely allow widows to legally inherit land (Goetting and Schumacher 2011). In some cases, widows are often threatened to leave their land, which belongs to their husbands' ancestral land, especially when they have no children or refuse to marry one of their husbands' brothers (Wanyeki, 2003). This therefore might affect farm succession.

Deininger (2003) suggested that 5 to 11 percent of agricultural production is lost due to land conflicts. In Kenya, especially in the western regions closer to Lake Victoria, the HIV/AIDS epidemic has greatly increased the number of widows hence more land conflicts. Jayne *et al*., (2003) showed that the death of a working-age male household head reduces the land allocated to high value crops resulting in a large reduction in per capita household crop value production. Although various factors affect crop production after the death of a working-age male head, land/farm conflicts and succession might be a contributing factor to the reduction in farm production (Yamano, 2005). Farms on conflict have low usage of fertilizer and other agro inputs than farm without or with low conflicts (Deininger, 2003). Calus and Huylenbroeck (2008) pointed out that once farmers identify a successor they become more likely to invest in the farm. Presence of a successor enhances farmers' attitudes and behavior in regard to farm size, scale and with the degree of farm specialization (Hennessy & Rehman, 2007), making them intensify farm activities, invest in the farm business, and reduce risk adversity. This include, being more willing to adopt new activities (Sottomayor *et al*., 2011). They also believe that farmland without a designated successor is normally sold, rented out or abandoned. Coffee is cultivated in over 80 countries in the world primarily in equatorial Latin America, Southeast Asia, India and Africa (Murthy & Naidu, 2012). Coffee's energizing effect was first discovered in the northeast region of Ethiopia (Talbot, 2002) and its cultivation first took place in southern Arabia, while drinking occurred in the middle of the 15th century in the Sufi shrines of Yemen (Sualeh & Mekonnen, 2013).

Coffee is the fourth foreign exchange earner in Kenya to tourism, tea and horticulture (Gathura, 2013; Gemson, 2013). Karanja & Nyoro, (2002) reveal that the crop provides about 10% of the GDP and employs over 600,000 households in Kenya while 69,000 households are employed in the coffee industry in Kisii County (CBK, 2013). Since 1989, production in Kenya fell from about 130,000 thousand metric tons to 50,000 tons in 2009 (Theuri, 2012), out of which 2,000 tons were produced from Kisii County (CBK, 2013). This decline is attributed to decrease in yields rather than a reduction in area. Yield decline reflects reduced use of inorganic fertilizer and pesticides caused by the fall in the profitability of coffee (Nyoro, 2002). CBK, (2013) reveal that Kisii County has dropped in production from 4,500 MT in 1989 to the current 1,600MT in the year 2013. (CRF 2013) contend that many farms are neglected or over utilized in terms of cropping and less fertilizer application with minimal agricultural practices.

This research sought to establish the magnitude of the effect of farm succession on coffee productivity and production from effect of poor agronomic practices and eventual profit. The research outcome shall provide suggested guidelines for extension policy formulation.

Conceptual framework: The fundamental principal of continuity is succession strategies. Farm succession is a means of keeping generational farming continuous, it assures the successor of the future farming business and similarly enables the successor to have confidence of future handling of his farm in respect to his wish. The entrusted successor will ensure that the farm is kept well as was during the regime of the person who gave him right to ownership, this ensures continuity in production of coffee in terms of quality and quantity.

METHODOLOGY

Study Area: Kisii is located in Nyanza region, on Latitude: 0° 41' 0 N and Longitude: 34° 46' 0 E. Kisii town, the headquarter of Kisii County is 309 km (192

mi) from Kenya's capital city of Nairobi. Kisii County is predominantly inhabited by the Abagusii community, a Bantu speaking people that speak Ekegusii dialect. The community is traditionally a farming community with patriarchic bias of functionality (Omwoyo, 2008). The area is averagely 1,800 ft above sea level with bimodal rainfall whose seasonal distinction is not clearly defined. The terrain is undulating valleys and hills that are gentle. Kisii County is one of the leading coffee growing areas in the country and in the western Region of Kenya (CBK, 2013). Kisii County has a high potential of revitalization of the coffee industry despite many issues that the area is facing. Kisii County has a population of 1.1 Million people according to 2009 census report, in an area of 1317 km2 having a population density of 874.7 people per Km2. The county comprises of 10 constituencies namely; Bonchari, south mugirango, Bomachoge, Bobasi, Gucha, Nyaribari masaba, Nyaribari chache, Marani and Mosocho. The county has a total of 24 coffee farmers' cooperative societies with 69,000 coffee farmers (CBK, 2013).

Nature, source of data and sampling technique: Data were collected from primary and secondary sources. Secondary data were collected from relevant texts, journals and reports. Well-structured questionnaires were used to obtain relevant information from 227 respondents. Respondents were selected through simple random sampling and purposive sampling techniques. A sampling frame of the twenty four farmer's cooperative societies in Kisii County was developed in which ten were randomly selected; another sampling frame for the ten farmers cooperative societies was developed in which twenty farmers and two cooperative management officers were randomly selected from each farmers cooperative society. Two private coffee growers, two agricultural officers, two cooperative officers and one officer from the milling section were purposively selected. Data were collected on the following variables viz:

Age measured in years, Farm size in acres, Marital status, Appointment of successor, Gender of successor, Presence of will, Awareness of succession plan by successor, Age of successor, Production of cherry in kilograms

Method of analysis: Descriptive statistical and quantitative methods were used to analyze the data collected. The descriptive statistics used were frequency distribution, mean, mode and tables. The Pearson correlation was used to test for the statistical significance of the variables at 5% significance level.

RESULTS AND DISCUSSION

Socio-economic characteristics: Table 1 shows the gender of the respondents, results showed that 70.6% were male and 71% were aged over 50 years in the study area. The mean age was 57 years while the modal age group was 51-60 years age bracket (Table 2). This implies that coffee farmers in the study area were ageing.

Results also show that majority of farmers in the study area were married with adult children. Table 3 shows that 74.3% were married, while 21% and 4.7% were widowed and single, respectively. Majority of the respondents were married which could imply that there was stability in the families thus high farm productivity.

Results show that most farmers in the study area were small-scale farmers as 61.1% reported farm size of less than an acre while only 24.4% had between 1 and 2 acres of land (Table 6). Implying that coffee farming in Kisii County was in small scale. Table 12 shows that 42.1% of the respondents had male successors while 5.6% had female successors. Most successors were male revealing gender disparity in farm succession in the region.

Table 9 shows the presence of a successor in the family of respondents. Results indicate that 47.7% of the respondents had a successor while 49% didn't have a successor. This may have a negative impact on coffee farming succession and production due to lack of a known successor. 36.9% of the respondents had their spouses working on the farm, 5.6% had their successors working on farm and 48.6% had family paid labour. This could have negative impact on succession and coffee production since successors are not mentored to engage in farming which may impede adoption of coffee farming by successors. Results showed that 25.2% of respondents had a will while 72.5% did not have a will (table 8). Table 10 shows that 34.1% of respondents had their successors aware of the succession plan while 15% had not informed their prospective successors, this could jeopardize succession morale and may affect adoption of coffee farming after succession. The findings indicated that 3.8% of the population had successors aged below 18 years, 24.3% had successors aged 19-35 years, 16.3 % had successors aged 36-50 years while 2.8% had successors aged above 50 years with the highest appointed successor aged 59 years.

This could infer unwillingness of coffee farmers releasing coffee farms to next generation. This could negatively impact on future coffee farming and production.

Return rate: The questionnaires were administered to 227 respondents that included 222 farmers, 20 cooperative management officers, 2 agricultural officers, 2 cooperative officers and 1 officer from the milling section. A total of 214 questionnaires were returned, this translates to 94.3 % return rate meaning the respondents were positive towards the study.

Demographic Information: Since the research topic was a sensitive issue, the researchers found it necessary to establish the background information of the respondents. The demographic information include, gender, age, marital status, number of children, acreage of coffee farm, who undertakes farm work and whether the farmer had a will in respect to coffee farm, this therefore formed the basis of understanding the kind of individuals interacted with and basis for information sought.

Gender of Respondents: Findings from table 1 indicate that 151 respondents were male which translates to 70.6% while 63 respondents were female translating to 29.4%. This shows an imbalance in the accessibility of the existing resources and information by the females, this finding concurs with findings by Ntabo (2011).

Table 1. Gender of respondents.

Gender	Frequency	Percent
Male	151	70.6
Female	63	29.4
Total	214	100.0

Source: Author (2014).

Age bracket of the respondents: The researcher determined the age of the respondents in Kisii County, since age is a key factor in adoption rate of technologies and performance of the farmer as he or she engages in farming or retiring from farming (Table 2). Majority of the respondents were aged between 50-60 years old representing 29.0% while below 50 years were 28.5%, 61-70 years were 25.6% years and over 70 years were 16.4%. This means 71% of the respondents were over 50 years of age hence proves that the youth participation in coffee farming is low. This concurs with Theuri (2012) in his research in Mukurueni district, Kenya, who found out that the minimum average age for coffee farmers is 51 years and Bogue (2012) in his research in Ireland who found out that half of the land owners were aged 55 while only 6.2% were less than 35 years of age.

Table 2. Age of farm owners.

Age in Years	Frequency	Percent
<50 Years	61	28.5
50-60 Years	62	29.0
61-70 years	55	25.6
70< Years	35	16.4
No response	1	.5
Total	214	100.0

Source: Author (2014).

Marital status of respondents: Marital status information was sought to get an in-depth understanding of the influence of marital status on farm succession**.** Majority of the respondents representing 74.3% were married while 21% were widowed, the remaining 4.7% were either single or separated. This concurs with Wanyeki, (2003), as it reflects male dominance on land ownership.

Table 3. Marital status of coffee farmers.

Marital Status	Frequency	Percent
Married	159	74.3
Widowed	45	21.0
Single	10	4.7
Total	214	100.0

Source: Author (2014).

Number of children and age: This section sought for information on the number of children the farmer has and their age. About 68.7% of the respondents had children who were adults, 25.2% had children below 18 years and 5.6% didn't have children. This meant that the farmers were old and had mature children. However, most of them had not allowed their adult children to own land.

Table 4. Number and age of children of the farmer.

Children age	Frequency	Percent
None	12	5.6
Adult	147	68.7
Under 18	54	25.2
No response	1	.5
Total	214	100.0

Source: Author (2014).

Who has another enterprise in the family: 57% of the respondents owned other enterprises with their spouses besides coffee farming, 23.3% of the respondents had other enterprises while 15% had spouses who owned other enterprises. This indicates that coffee farmers do not depend solely on coffee income but they supplement it with income from other sources.

Table 5. Alternative enterprise of the farmer.

Who has another enterprise	Frequency	Percent
Respondent	50	23.3
Spouse**Partner/**	32	15.0
Both	122	57.0
None	1	.5
No response	9	4.2
Total	214	100.0

Source: Author (2014).

Coffee farm acreage: 61.1% of the respondents had less than 1 acre of coffee while 24.4% had between 1-2 acres, only 7.5% had more than 2 acres with the highest being 8 acres. This makes Kisii County a more small scale farming area. The average farm size under coffee is 1.15 acres with standard deviation of 1.05 implying that largely coffee farming is on small scale in Kisii County.

Table 6. Acreage of farms.

Acreage	Frequency	Percent
<1acres	131	61.1
1-2 acres	52	24.4
>2 acres	16	7.5
No response	15	7
Total	214	100

Source: Author (2014).

Effect of farm succession on coffee production: 48.6% of the respondents paid for the labor of the coffee farms, 36.9% of the respondents indicated that their spouses worked in the farms while 5.6% indicated that the appointed successor worked in the farm. Farmers seemingly did not involve successor in training them on the coffee farm practice. This implies that the successors may later not engage in coffee farming as they are not mentored.

Have you made a will: 72.5% of the respondents didn't have a will at the time of response while 25.2% had a will for their farms. This implies that the higher percent of the Kisii residents didn't have legally appointed person to take over while the owner is not available. This could jeopardize farm succession once the owner of the land is not available as dependents may engage in fights for farm ownership thus affecting coffee production.

Table 7. Who Undertakes coffee farm work.

Who undertakes	Frequency	Percent
Spouse**Partner/**	79	36.9
Successor	12	5.6
Other	4	1.9
Family paid	104	48.6
Non family	6	2.8
Rented out	4	1.9
No response	5	2.3
Total	214	100.0

Source: Author (2014).

Table 8: Presence of will.

Will presence	Frequency	Percent
Yes	54	25.2
No	155	72.5
No response	5	2.3
Total	214	100.0

Source: Author (2014)

Identified farming successor: 49.0% of the respondents did not have an appointed successor to the coffee farms, while 47.7% had identified a successor to the coffee farms. For those who had appointed successors to the coffee farms, there are high chances of continuity in coffee farming unlike in households where successors had not been appointed.

. Table 9: Farmer identified successor.

Have farming successor	Frequency	Percent
Yes	102	47.7
No	105	49.0
No response	7	3.3
Total	214	100.0

Source: Author (2014).

Awareness of successor to succession plan: Results show that 34.1% of the respondents had the successor aware of the succession plan, while 15.0% acknowledged of not having informed them. 50.9% did not respond to the question, a clear indication that farmers had reservations on having a successor.

Table 10: Successor aware of succession plan.

The successor is aware	Frequency	Percent
Yes	73	34.1
No	32	15.0
No response	109	50.9
Total	214	100.0

Source: Author (2014).

Age of the successor: 28.1% of the respondents indicated having appointed a successor of less 35 years and less, meaning it is the only percentage of youth appointed for coffee farm succession, 16.3% had appointed a successor aged between 36-50 years while 2.8% had appointed successors of over 50 years with the highest age appointed as successor being 59 years. More than half of the population (52.8%) did not respond to the question giving an assumption that the topic could be a sensitive one. The mean age of appointed successor is 33.26 years with standard deviation of 10.256.

Table 11. Age of successor.

Age of successor	Frequency	Percent
<18 Years	8	3.8
19-35 Years	52	24.3
36-50 Years	35	16.3
>50 Years	6	2.8
No response	113	52.8
Total	214	100

Source: Author (2014).

Gender of successor: Among the appointed successors, 42.1% were male while 5.6% were female. This concurs with Omwoyo (2008) who indicated that the Gusii community was a male dominated community. Most households favor appointing male successors as the females may get married and join different families.

Table 12: Gender of successor.

Gender	Frequency	Percent
Male	90	42.1
Female	12	5.6
No response	112	52.3
Total	214	100.0

Source: Author (2014).

Inferential statistics on effect of farm succession on coffee production: From the Pearson Correlation, farm succession has no significant relationship, hence there are other factors contributing more to reduced coffee production than farm succession. The mean production is 1.77 Kilograms per tree per year with standard deviation of 3.23. Results differs from Calus & Huylenbroak (2008) findings that farm succession has a significant effect on farm performance, however, it concurs with findings from Nyoro (2002) who found out that decline in production was due to reduced use of inorganic fertilizer. Similarly, the findings concur with Hennessy & Rehman (2007), who found out that presence of a successor enhances farmer attitudes and behavior in regard to farm size, scale and degree of specialization.

Table 13: Inferential Statistics.

		Production
Identified farm successor	Pearson Correlation	-0.147
	Sig. (2-tailed)	0.051
	N	176

Source: Author (2014).

CONCLUSION AND RECOMMENDATIONS

The main objective of the study was to find out the effect of farm succession on coffee farming in Kisii County, Kenya. The study was conducted on coffee farmers and stakeholders and involved participation of 222 coffee farmers and 5 stakeholders. Data analysis was conducted through the use of descriptive and inferential statistics. The study findings showed that there was no strong significant influence of farm succession on coffee production with critical value P>0.05, mean production of 1.77 kilograms and standard deviation of 3.23. However, farm succession keeps production supply constant; therefore it is supposed to be envisaged as a continuation strategy of income to the family and supply of coffee to the customers. Since coffee production is labour intensive, there needs to be constant energy to provide labour and skills of modern and sustained production strategies. Like any other succession, particularly of assets, coffee farming needs to be put on a succession plan to ensure that quantity and quality production is assured throughout the value chain. In the light of the discussions and conclusions of the research findings, the following recommendations are made:

1. There is need for farmers to encourage their children and appointed successors to participate in coffee farm work and train the successor on agricultural practices either informally and formally before final takeover of coffee farming business.

2. The farmers need to be encouraged to appoint successors who have interest in farming irrespective of gender or close family affiliation.

3. Farmers need to be encouraged to appoint successors of youthful age who can spur modern farming with latest available technologies.

Suggestion for further research based on the nature and conclusion emanating from the study findings, the study suggests further research to be done on;

1. Gender influence on coffee production in Kisii, Kenya.

2. Factors influencing farm succession in Kisii County, Kenya.

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