Does educational level influence the choice of farming as a livelihood career? Results of an empirical study from coastal lowland Kenya

Lewa, K. K[1]. and J. M. Ndungu[2]

[1]Kenya Agricultural Research Institute – Mtwapa
P.O. Box 16 Mtwapa-80109, Kenya
Tel/Fax:+254-0202024751
E-mail: lewakk@yahoo.com
Mobile: +254 (0) 722284640

[2]Kenya Agricultural Research Institute – Thika
P.O. Box 220-01000
Thika, Kenya
E-mail: janmwaniki@gmail.com
Mobile: +254 (0) 722780300

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[1] Corresponding author

Abstract

Kenya's long - term economic development strategy -"Vision 2030"- identifies agriculture as a key sector to deliver the envisioned economic growth. Youth, who comprise over 31% of the total population and constitute about 60% of the country's labour force, were expected to provide the human resource to drive this agricultural development. However, agriculture tended to be a practice for older people than the youth. The overall effect is that agricultural productivity and by extension, Kenya's food security is threatened while employment especially among the youth soars. To reverse the trend, agriculture has to be made more appealing as a career choice for the youth. Knowledge of the perceptions and factors that influence youth to choose agriculture as a career is a step towards developing policies and strategies that will increase and sustain the youth's interest and participation in agriculture. This study was part of a broader research project aimed to assess the experiences and perceptions of youth regarding the changes and opportunities in the agri-food sector in coastal Kenya. The study was conducted in six locations of coastal lowland Kenya and was intended to find out if there is a relationship between educational level and choice of farming as a livelihood career among the youth. A total of 129 youth aged between 15 and 30 years old were selected using purposive and multi stage random sampling techniques. The chi-square test χ^2 (at 2 df) = 2.645 and $p < 0.05$ showed no significant difference between educational level and choice of farming as a livelihood career. Only 27.9% of the respondents chose farming as their ideal career while 72.1% chose other careers. Reasons for the choice were that farming provides the main source of food (at subsistence level) and some income. The other preferred careers were business (28.1%), medicine (14.9%) and teaching (9.6%). These were seen to be more profitable, and were more stable. The study recommends policies that reorient agriculture from subsistence to commercial (to increase potential for profit); and, stabilize agricultural productivity to reduce risk. Also pro-farming career counselling in primary and secondary schools should be encouraged. Further investigation need to be done to establish the role played by participating in farming at the school farm in developing career choices.

Key words: Youth, farming, agriculture, education, career choice

Introduction

Agriculture is the backbone of the Kenyan economy. The agricultural sector contributes directly about 24 per cent of GDP and about 19 per cent of the formal wage employment (KIPPRA 2009). An estimated 60 per cent of all households are engaged in farming activities, and 84 per cent of rural households keep livestock. The sector also indirectly contributes a further 27 per cent to the country's GDP through linkages with agro-based industries (GoK 2009). Agriculture is also a key to national food security, and is expected to play a critical economic role as Kenya envisages its transformation into a rapidly industrializing, middle-income nation by the year 2030 (GoK 2007).

The government's strategy for the development and transformation of the agricultural sector is outlined in the Strategy for Revitalizing Agriculture 2004-2014 (GoK 2005) and the first Medium Term Plan (MTP) for implementation of Vision 2030. The key policy goals include raising agricultural productivity through increased resource allocations, exploiting irrigation potential, commercializing agriculture, reviewing comprehensively the legal and policy framework for agriculture, and improving governance in key agriculture institutions, especially cooperatives and farmer organizations. Given the importance of the sector to the economy, its performance continues to be of much policy interest.

Equally, young people are very much in the policy spotlight. Kenya is still at the early stages of the demographic transition, characterized by a large youth cohort. About 53 per cent of the Kenyan population falls within the 0-19 years' age bracket while 37.1 per cent is under 35 years of age. The youth population is 8.7 million and 5.6 million in the rural and urban areas, respectively. In coastal Kenya, there are about 1.27 million (656,000 and 614,000 females and males respectively) youth between 15-35 years old (KNBS 2009). They constitute 38.1% of the population. Youth form 60% of the total labour force, but the majority is unemployed or underemployed (KIPPRA 2009). Youth are therefore a very important segment of economy on whose effort Kenya's economic development will depend, whose potential contribution is not being fully realised.

Kenya has had several policies to address youth issues. The current economic blueprint (Vision 2030) identifies specific policies and interventions that need to be implemented to fully develop the potential of the youth as well as prepare and engage them in the socio-economic development of the country. Key intervention areas are: (i) building capacity and empowerment to equip youth to engage in productive activities; (ii) creating employment opportunities; (iii) providing the youth with the necessary support (e.g., financial and market linkages); (iv) supporting initiatives that mould character; (v) strengthening programmes to advance youth health and well-being; and, (vi) giving the youth a voice to articulate their issues as well as participate in decision making. Indeed the goal of the current Youth Policy (GoK 2006) is to promote youth participation in community and civic affairs. Its strategic objectives include employment creation in the informal sector through, inter alia, encouraging agricultural production and cottage industries in rural areas. Similarly, the National Agricultural Sector Extension Policy (2001) identifies youth as one of the factors affecting extension service delivery and specifically advocates for dissemination of gender sensitive technologies and interventions that target the youth, both in and out of school, to help mould them as future farmers and agri-business entrepreneurs.

If youth are to choose careers in the agriculture (farming) sector they have to see the sector as financially rewarding, modern and challenging. Currently the average age of the Kenyan farmer is reported as between 56 - 60 years old. This is seen by some as a constraint to adoption of modern farming technologies which are essential to increased agricultural productivity.

Education in Kenya

Kenya has always placed education as a priority at all levels, promoting it as a key indicator for social and economic development. Indeed, investing in education is a critical part of Vision 2030 (GoK 2007). In agriculture, education is a key determinant of technology adoption and education levels are highly correlated with technology adoption rates. This in turn increases agricultural productivity, incomes and improved livelihoods (Olwande et al 2009, Uaiene et al 2009).

Education has been defined as the process through which knowledge, skills, attitudes and values are imparted for the purpose of integrating the individual in a given society, or changing the values and norms of a society. For individuals, this process is life-long: it begins at birth and ends with death. The UNESCO International standard classification of education defines education as comprising organized and sustained communication designed to bring about learning (UNESCO, 1975). In Kenya, as in other countries, this sustained communication is organized and managed through a coherent education system put in place by the Government.

Kenya has an educational system which is commonly referred to as the 8-4-4 system, consisting of eight years of primary, and four years each of secondary and university (depending on the course).

Primary education

Primary school is the first phase of the 8-4-4 education system and serves students between the ages of 6 - 14 years. The main purpose of primary education is to prepare students to participate in the social, political and economic well being of the country, and prepare them to be global citizens (Wosyanju 2009). The primary school curriculum is designed to provide functional and practical education that caters to the needs of children who complete their education at the primary school level and also for those who wish to continue with secondary education. A major goal of primary education is to develop self-expression, self-discipline, and self-reliance, while at the same time providing a rounded educational experience. At the end of the eighth year, primary education candidates are examined in five subjects: Kiswahili, English, Mathematics, Social Studies and Science and Agriculture.

Secondary education

Secondary school education begins around the age of fourteen and is aimed at meeting the needs of the students who terminate their education after secondary school and also those who proceed onto tertiary education, other professional training or employment. The required secondary school subjects are categorized into five groups as follows:

- Group 1: English, Mathematics, and Kiswahili;
- Group 2: Biology, Physics, Chemistry, Physical Sciences, and Biological Sciences;

- Group 3: History and Government, Geography, Christian Religious Education, Islamic Religious Education, Social Studies and Ethics, and Hindu Islamic Education;
- Group 4: Home Science, Art and Design, Agriculture, Woodwork, Metalwork, Building Construction, Power Mechanics, Electricity, Drawing and Design, and Aviation Technology; and
- Group 5: French, German, Arabic, Music, Accounting, Commerce, Economics, Typewriting and Office Practice.

Students are required to take all three subjects in Group 1 and at least two subjects from Group 2. They are also required to select subjects in the other three remaining areas. The selection of subjects is dependent upon what each of the individual schools offers and also the student's interest. This is in turn dependent upon the resources and teachers available in the individual schools. At the end of the fourth year in secondary school, the Kenya Certificate of Secondary Examination (K.C.S.E.) is taken in the mandatory and elective subjects in preparation for tertiary and higher education. The curricula for primary and secondary institutions are centrally developed by the Kenya Institute of Education.

Research question

This research addressed the question: what factors influence young people's career choices?

In general career choice is thought to be influenced by both extrinsic and intrinsic factors. The extrinsic factors might include: i) peer groups, ii) hero worship, iii) economic satisfaction, iv) opportunities, v) dignity in social and personal esteem and vi) family and social groups; and vii) loyalty to family traditions. The intrinsic factors on the other hand include: i) The skills learnt and the ability to apply those skills; ii) idealized career; iii) education and educational experiences (Borchert 2002, Dlamini et al 2004, Ferry 2006). Schooling is a cultural and socioeconomic factor in choosing a career. Education should play a key role on career choice as it facilitates the acquisition of new skills and knowledge.

The career choice that young adults make is embedded in their perceptions of the "ideal job" and their career decision-making maturity. Occupational choice is not a mere matching process; rather, it is a choice made in a context of many influencing factors. The perception of the "ideal job" acts as a filter for job appropriateness and influences the choice process (Ferry 2006).

In this study, it was hypothesized that as the youth acquire more education, they are less likely to choose farming as a career.

The presence and opportunity to work in the school farm or garden would provide the youth with a richer experience on the opportunities available within the agricultural sector, in addition to providing practical skills to undertake the agricultural activities.

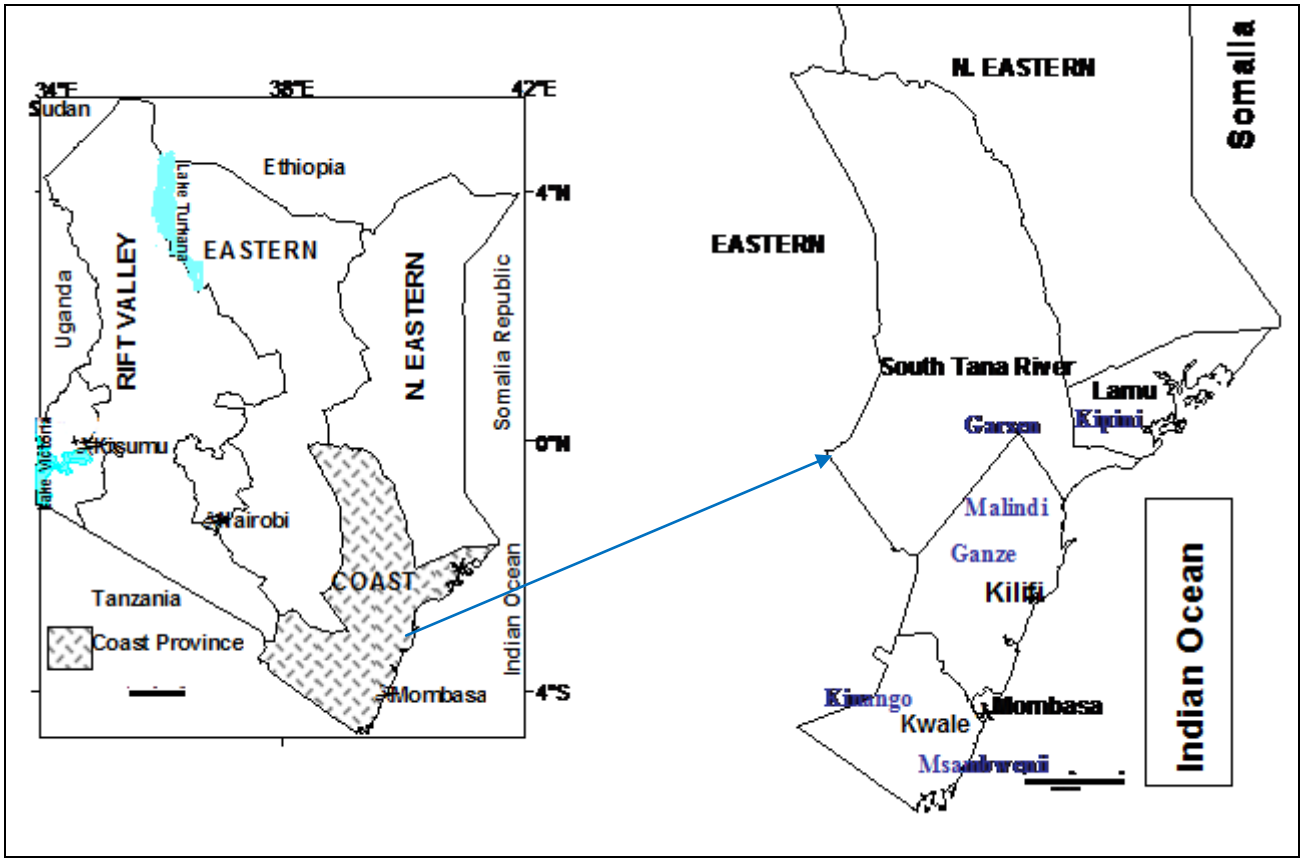
Methodology

Study areas

This study was part of a larger study that aimed to assess the experiences and perceptions of young people regarding the changes and opportunities in the agri-food sector in coastal Kenya. The study was carried out in June and July 2011. Data on the educational levels was teased out from the main study and analysed. It is this data that is reported here.

This study was conducted in Kwale, Kilifi and Tana River counties of coastal lowland Kenya. (Map 1). These counties were selected because they are largely rural and the major socioeconomic activities involve crop farming and livestock keeping. Over 80% of the populations rely on agriculture for employment and general livelihood. They have varying agroecological zones with contrasting agricultural production potential and opportunities, farming systems and cultural backgrounds. The region is ecologically diverse and ranges from the humid and sub-humid areas close to the Indian Ocean coast to the arid and semi-arid lands (ASALS) further in the hinterland. They fall in agroecological zones CL3 - CL4 (for the humid areas) and CL5 – CL6 for the ASALs. The humid and sub-humid areas include Msambweni, Bahari, Malindi and Mpeketoni. They are characterized by high precipitation ranging between 900 and 1300 mm per annum with a mean annual temperature of 24^0 C. These are areas with high agricultural potential, and the major agricultural activities include dairy, production of cash crops such as citrus, mangoes, coconut, cashew, banana, bixa, sisal, and food crops such as maize, rainfed and irrigated rice, sweet potatoes, cowpeas and vegetables (tomatoes, chillies), pawpaw, simsim, cassava, natural fodder, sunflower and pineapples. On the other hand, the ASALs are low agricultural potential areas which included Kinango, Bamba and Garsen in Kwale, Kilifi and Tana River counties. These are the livestock millet and lowland ranching zones in CL 5 and CL 6 with less than 900 mm per annum rainfall which is erratic and unreliable. These areas are sparsely populated. They are also characterized by low food security, with a majority of farmers producing enough food to last them for less than three months in a year.

Map 1: Kenya and Coast Province showing the study areas



Data collection and analysis

Data for this study were collected through interviews of key informants including youth officers from the Ministry of Youth Affairs, youth group leaders, agricultural and livestock extension workers from the study areas; focus group discussions; and a formal questionnaire survey. Here we analyse the results from the survey.

Both purposive and random sampling techniques were used. Six districts in coastal Kenya were purposively selected to represent successful and less successful agricultural areas. Locations within the successful and less successful areas were randomly selected. From the locations, households that have youth were identified with the assistance of village elders and staff from the Ministries of Agriculture and Livestock Development. These comprised the sample frame from which the households to be interviewed were randomly selected. The total sample for the questionnaire survey had 129 respondents. The questionnaire was pretested, refined and administered by trained enumerators.

For the study, youth were defined as the men and women aged between 15 and 30 years. All 129 respondents fell within this age bracket. The educational level was established by asking the respondents to indicate their highest level of education which was finally grouped into three categories: i) no school – for those who did not have any formal schooling, ii) primary school and iii) secondary /post secondary school. Another aspect considered together with the education level was the presence of a school farm or garden and whether the respondents worked in the school farm.

To establish the career choice, respondents were invited to indicate their "ideal career choice" through an open question. This was the career that they would have wanted to do. Some respondents were working in their selected career while others were not. The ideal career choices were later clustered into the careers which were related to farming, medicine, teaching etc. Respondents also gave their reasons for choosing their ideal career and for those currently not involved - why they could not pursue their ideal careers (Annex 1).

Descriptive statistics were used to describe the survey respondents. A chi square test was used to determine differences among the sample categories under study.

Demographic characteristics of the study sample

Of the 129 respondents, 60.5 per cent were females and 39.5 per cent were males (Table 1). The sample was spread across four age groups. Over half of the respondents (52.7 per cent) reported their highest level of education as primary, while 31% had no formal education and 16 per cent reported their highest education level as secondary or post secondary. Compared to males, female respondents were 2.7 times more likely to have no formal education (Table 2).

Table 1. Distribution of survey respondents by age, sex and level of education

Variable	Frequency (n)	Percentage (%)
Age (years)		
15-18	27	20.9
19-22	31	24.0
23-26	33	25.6
27-30	38	29.5
Total	129	100
Sex		
Male	51	39.5
Female	78	60.5
Total	129	100
Educational level		
Secondary / post secondary	21	16.3
Primary	68	52.7
None	40	31.0
Total	129	100

Table 2. Distribution of respondents by sex and level of formal education

Sex	Level of education			Total
	Secondary/post secondary	Primary	None	
Male	16	27	8	51 (39.5)
Female	5	41	32	78 (60.5)
Total	21 (16.3)	68 (52.7)	40 (31.0)	129 (100)

*Numbers in parenthesis are percentages

Results and discussion

Ideal career choice

Of the 129 respondents, 26.4 per cent reported farming as their ideal career choice, while 27.1 percent reported business as their ideal career choice (Table 3).

Table 3. Distribution of ideal career choice by respondents

Ideal career choice	Frequency	Percentage
Business	35	27.1
Farming	34	26.4
Medicine	17	13.2
Teaching	11	8.5
Artisanship	8	6.2
Others	24	18.6
Total		**100**

Influence of level of education on choice of farming as a livelihood career

Kenya's agricultural sector, unlike in the developed world, is dualistic in nature. It is composed of a predominant smallholder sub-sector and a relatively small number of large scale farmers and ranchers. The smallholder sub-sector is further sub-divided into: (i) subsistence farmers and pastoralists, and (ii) small-scale commercial farmers mainly found in the high and medium rainfall areas.

More than 70 per cent of all respondent indicated ideal careers other than farming. The chi-square test χ^2 (at 2 df) = 2.645 and $p < 0.05$ showed no significant difference between educational level and choice of farming as a ideal career choice.

Table 4. Distribution of respondents by level of education and choice of career

Level of education	Ideal career choice		Total
	Farming	Other	
None	8 (19.5)	32 (79)	41 (100)
Primary	20 (29.4)	48 (70.5)	68 (100)
Secondary	6 (28.5)	15 (71.4)	21 (100)
Total	34 (26.4)	95 (73.6)	129 (100)

*Figures in parenthesis are percentages within the category

Primary school farms and gardens

Respondents were asked whether their primary school had a school farm or garden. For those whose schools had a farm or garden, they were further asked if they participated in farming or gardening activities at the school. The presence of a school farm or garden was

expected to provide practical learning experiences and exposure to farming at a young age. Working would give the youth basic skills and appreciation of farming as a potential livelihood career. But how would such exposure influence ideal career choice?

In the primary school curriculum, agriculture is an examinable subject and is compulsory for all students. However, its coverage as a subject is very basic, mainly because agriculture is combined with other science subjects such as biology and physics.

About 62 per cent of respondents reported having had a farm in their primary school. Among the respondents who had a farm or garden at primary school, 25 per cent indicated farming an ideal career choice, compared to 35 per cent for those with no primary school farm or garden (Table 5). The presence of a farm or garden at primary school would seem to have a small negative effect on subsequent choice of farming as an ideal career

Table 5. Whether primary school had a farm and choice of farming as a career

Did your primary school have a farm?	**Ideal career choice**		**Total**
	Farming	**Other**	
Yes	14 (25.5)	41 (74.5)	55 (100)
No	12 (35.3)	22 (64.7)	34 (100)
Total	26 (29.2)	63 (70.8)	89 (100)

*Figures in parenthesis are percentages

Of the 55 respondents who had a school farm in primary school, 74.5 per cent reported that they has worked in it (Table 6). This is the group that would have been expected to acquire practical skills in farming. Again for both those who worked in the farm or garden and those who did not, a majority (73.2 per cent and 78.6per cent respectively) did not identify farming as an ideal career. The practical experience of working in the school farm or garden does not appear to be a factor in the choice of agriculture as an ideal career.

Table 6. Participation in primary school farming and choice of farming as a livelihood career

Did you work in the primary school farm?	**Ideal career choice**		**Total**
	Farming	**Other**	
Yes	11 (26.8)	30 (73.1)	41 (100)
No	3 (21.4)	11 (78.6)	14 (100)
Total	14 (25.5)	41 (74.5)	55 (100)

*Figures in parenthesis are percentages

Secondary school farms and gardens

Respondents who had reached the secondary school level of education were asked whether their secondary school had a school farm or garden. For those whose schools had a farm were further asked if they participated in farming activities at the school farm.

In the secondary school curriculum, agriculture is taught as an elective subject. Studying agriculture at secondary level should expose students to the opportunities offered within the agricultural sector, and give them a broader view of agriculture and the careers available within the sector (Mbaga 1996), including in agricultural extension, research, marketing, processing etc.

Only 16.3 per cent (21 respondents) of the total number of respondents had reached secondary school level of education. Of these, 57.1 per cent reported having a farm or garden in their secondary school (Table 7). Fifty per cent of the respondents who had a farm in secondary school identified farming as their ideal career choice, while none of those without a school farm or garden chose agriculture. Here it would appear that the presence of a farm or garden at secondary school level is positively associated with the choice of farming as an ideal career choice.

Table 7. Whether secondary school had a farm and choice of farming as a career

Did your secondary school have a farm?	**Ideal career choice**		**Total**
	Farming	**Other**	
Yes	6 (50)	6 (50)	12 (100)
No	0 (0)	9 (100)	9 (100)
Total	6 (28.6)	15 (71.4)	21 (100)

This, however, is an area that would benefit from further interrogation. For instance for those who reached secondary school, how many of them studied agriculture as an examinable subject? For the respondents who had no farm and preferred other careers to agriculture, it would be important to establish whether their school offered agriculture as a subject and if they took it.

Of the 21 respondents who reported having a school farm or garden in secondary school, 42.9 per cent reported working on it, and of these nine, 55.6 per cent indicated farming as an ideal career choice (Tables 8). Of the 12 respondents who did not participate in their secondary school farm work, only 8.3 per cent (1 respondent) indicated farming as an ideal career choice. This further reinforces the observation that participation in the school farm at the secondary school level may have a positive influence on selecting farming as a career of choice. Usually secondary schools that have agricultural projects where students participate have projects that are aimed to generate income for the school and or provide products that the school requires - such as milk (dairy), or eggs (poultry). The students who participate in these activities may become aware of the income that is generated from these activities, hence can appreciate its ability to sustain ones livelihood.

Table 8. Participation in secondary school farming and choice of farming as a livelihood career

Did you work in the primary school farm?	Ideal career choice		Total
	Farming	Other	
Yes	5 (55.5)	4 (44.4)	9 (100)
No	1 (8.3)	11 (91.7)	12 (100)
Total	6 (28.6)	15 (71.4)	21 (100)

*Figures in parenthesis are percentages within the category

Apart from taking agriculture as a subject, students participate in farming activities at school as an extracurricular activity, usually as members of the Young Farmers' Club (YFC). Membership to the YFC is voluntary but gives the students exposure to practical farming technologies and the opportunities within the agrisector. The farm activities are usually complemented with visits to model farms, research institutions, processing factories, markets etc.

Conclusion and recommendations

From this study the following conclusions can be made:

The level of education does appear to influence the choice of farming as an ideal career choice.

The presence of a school farm or garden at secondary school appears to be positively associated with the selection of farming as an ideal career choice.

Participation in a school farm or garden at secondary school also appears to be positively associated with the selection of farming as an ideal career choice.

In the 1960s, the Kenya Government incorporated agricultural programmes in secondary school curricular that were intended to introduce students to modern farming methods and to explore the breadth of careers available as a means of creating student interest and ultimately their commitment to careers in agriculture (Mbaga 1996). Agricultural education in public schools has a successful record of helping students set and achieve career and educational goals (Bajema et al 2002). Therefore as a policy option agriculture could be made a core course in the secondary school curriculum. Schools could also be encouraged to have agricultural activities to expose students to the career options available in agriculture. Whereas rural schools may have the land for farming, urban schools could explore other activities that do not require a lot of land such as balcony farming, floriculture, poultry farming, rabbit rearing, fish farming, agro processing.

More awareness on agriculture opportunities should be created to the youth in and out of school. This could be done through visits to model farms, research centres etc, and invigorating the Young Farmers Clubs in secondary schools and 4 – K Clubs in primary schools. This could be through the Ministries of Youth Affairs, Ministry of Education and

Ministries of Agriculture and Livestock. Proper guidance, information, exposure and support could go a long way in making the youth prefer agricultural related careers.

Career counseling that encourages selection of farming careers should be encouraged both in primary and secondary school. Borchert (2002) observed that some students do not choose their careers well until they have gone through their high school. Therefore if the students are exposed early enough to opportunities in agriculture, they may take up the careers in farming. For Kenya, there are few role models who have made decent livelihoods from farming. This makes it difficult for the students to appreciate the farming careers in their totality, especially after they have gone out of the school system. Involvement of parents in the career selection process can also be helpful (Ferry 2006). Osoro et al 2000 found that rural students in Kenya tend to seek help from parents and teachers more than urban students, and that parents, more than career teachers, play a major role in the career decision-making of students. Thus the exposure of the parents to the opportunities and careers in farming is equally important.

More research should be done to motivators behind choice of agriculture as a career, the influence of learning agriculture both in primary and secondary schools, and the influence of a school farm on selecting agriculture related careers.

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Annex 1: Respondents career choices and reasons for selecting the careers

Career	Reasons for choosing career
Farming	Source of food Profitable Provides self employment Does not require high qualifications
Business	Provides high incomes and profits Has low risk – does not depend on weather It gives independence of action
Medicine (Doctor/Nurse/ Pharmatist)	Commands high respect from the community Has high pay Help the community
Teaching	Jobs are easily available Does not require much qualification Has access to loans
Engineering	Has high pay Is respectable within community
Pilot	Has high pay Is respectable within the community Can travel to different countries
Lawyer	Has high pay Many jobs are available Provides self employment
Armed forces	Does not require high qualifications Can access loans To improve security of the area
Artisans	Provides self employment Does not require high qualifications
Accountancy	To follow in family tradition Has high pay