ATTITUDES TOWARDS AGRICULTURE IN SECONDARY SCHOOLS: THE CASE OF TEACHERS AND STUDENTS OF BARINGO NORTH DISTRICT, KENYA

BY

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DECLARATION

Declaration by the student

This study is my original work and has not been presented in part or as a whole for any academic award in any university.

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This thesis is dedicated to my loving wife Millicent and my children Lynnette, Emmanuel and Irvyn whose love, patience and understanding during my period of study enabled me to complete this thesis.

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ABSTRACT

Attitudes of people engaged in the teaching and learning of any subject are central in influencing the teaching –learning process**.** The purpose of this study was to establish the attitudes towards Agriculture by teachers and students of selected secondary schools in Baringo North District. The study was both qualitative and quantitative in approach. A cross sectional survey design was used and a total of 12 teachers and 210 students selected from 5 schools were tested. The respondents were drawn from both the public and private secondary schools. A combination of stratified and simple random sampling techniques were used to arrive at the sample of the 222 respondents. Questionnaire was utilized to collect data. The Questionnaire comprised of a five point likert-type scale questions meant to measure attitudes towards Agriculture. Data collection was preceded by a pilot study in the adjacent Baringo district mainly to determine the reliability of the instrument. Results of the analysis of data from the pilot study found the instrument to be reliable. Data collected during the main study was analyzed using Statistical Package for Social Sciences (SPSS). Both the descriptive and inferential statistics were used to report the findings of the study. Frequency tables and percentages were the main descriptive statistics used while Chi-square analysis performed at 0.05 level of significance was the inferential statistic used to show relationships between the variables of the study. The main findings of the study indicated that teachers had positive attitudes while students had negative attitudes towards Agriculture. It was also established that teachers faced numerous challenges in implementing Agriculture curriculum ranging from wide content of topics to lack of resources for making Agriculture teaching practical oriented. The findings of the study were intended to improve the implementation and the content of the Agriculture curriculum in secondary schools. Accordingly, the study recommended that policy makers and curriculum developers should consider making Agriculture a core subject in the secondary school curriculum since the subject is vital for national development. Also, it is recommended that Agriculture syllabus be reviewed to reduce the workload in Agriculture that is viewed by teachers and students as a source of boredom especially the long topics, a suggestion that seemed to be a cause of poor attitudes towards Agriculture by students.

LIST OF ABBREVIATIONS AND ACRONYMS

AMREF	African Medical Research Foundation
ASAL	Arid and Semi Arid Land
ERSWCE	Economic Recovery Strategy for Wealth Creation and Employment
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GMO	Genetically Modified Organism
JICA	Japan International Co-operation
KCSE	Kenya Certificate of Secondary Education
KIE	Kenya Institute of Education
MOE	Ministry of Education
NCAE	National Council for Agricultural Education
PRSP	Poverty Reduction Strategy Paper
TVET	Technical and Vocational Education Training
UNDP	United Nations Development Programme

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CHAPTER ONE

INTRODUCTION TO THE STUDY

1.0 Introduction

This chapter presents the background information, problem statement, purpose of the study, objectives, research hypothesis, assumptions, scope and limitations, justification, significance, theoretical framework and definition of terms.

1.1 Background of the Problem

At independence, the Government of Kenya recognized that education and training was fundamental and the basic tool to human resource development and government's overall development strategy. A relevant curriculum was thus necessary to cater for the aspiration of the youth as well as serving the various interests of national development (Eshiwani, 1993). According to Japan International Cooperation (JICA) (2008), educational development is central to human resource development and the foundation for any socio-economic development of a country; hence lack of education and training reduces people's ability to exploit the opportunities around them making them more vulnerable and is a major cause of poverty.

Vocationalization of the curriculum was thus seen as a way of instilling education relevance to enable the school leavers either become directly employable or become self- employed (Ongeti, 1986). Republic of Kenya (2005) notes that the Government's vision of education is "Quality education and training for development". This meant that education is necessary for transmission of vital skills necessary for the job market. Attitudes towards the curriculum must thus be oriented positively if this goal has to be attained.

However, the current scenario reveals a lack of achievement to the original purpose of Agriculture in schools. This study examined the attitudes of teachers and students towards Agriculture in secondary schools. Since Agriculture is the backbone of the Kenyan economy, contributing to over 30% of the Gross Domestic Product (GDP), employs about 80% of the rural population, and is responsible for food production, the inclusion of the subject in the school curriculum would greatly improve the economic growth (Republic of Kenya, 1994). According to Gathura (2009) even universities are producing graduates who are lacking in production capacity. In a discussion of the relevance of the Agriculture curriculum in local and other universities in the developed world, scholars at an Agricultural forum in Nairobi said institutions had failed to make any credible impact on food production (Gathura, 2009).

Scientists were generally in agreement that the current agricultural training system was skewed towards producing papers for publication in the international journals other than solving practical problems. According to Gathura (2009), lecturers have been blamed for lack of engagement in any practical agricultural activity and suggestions were made to overhaul and repackage the curriculum so as to incorporate practical work on the real life situations.

The Kenyan population of 40 million people demands that necessary skills and technology be acquired to increase food production and create employment to cope up with the rising food demand and employment needs of the increasing population. Famine is currently a major challenge in Kenya with over 10 million people facing starvation (Gaitho, 2009).

The Kenya vision 2030 emphasizes that Agriculture is deemed important in alleviating the current situation and hence outlines the application of biotechnology such as genetically modified organisms and providing necessary skills for self employment through the Jua kali sector (Government of Kenya, 2007). Such technologies and skills may only be acquired within school systems such as the secondary school. However, the attitudes of both the implementers and consumers of such curricular must be positive if effective learning has to take place. The major question is "what are the attitudes of teachers and students towards Agriculture in secondary schools"? This question forms the basis for this study: to establish the attitudes of teachers and students in secondary schools.

Schools form the avenues for passing out necessary skills that can be utilized to generate food production and lead one to either salaried employment or self reliant. In order to attain such outcomes, the attitudes of teachers and students must be positive. The attitude towards Agriculture was negative during colonial era and also at early independence (Ongeti, 1986) but with the rising food insecurity, unemployment and poverty, have the conditions compelled change of attitude?. This was the main task of this study.

According to Ongeti (1986), there is little attempt made to show the young people by applying better methods, that Agriculture can be a profitable career. This study therefore seeks to establish the attitudes towards Agriculture subject by teachers and students of secondary schools in Baringo North District.

Agriculture is said to be the mainstay of the economy of Kenya. Despite this vital role, Agriculture as a subject has been undergoing numerous challenges both in the pre and post independent Kenya. At pre independence, the subject was introduced as

a means of providing practical education which was useful as a strong vehicle for social and economic development especially the development of their communities. However, the Africans saw vocational education as a means to keep them politically and economically backward (Wanjala, 1991). This led to the drop of the subject in 1931 barely five years after its introduction in 1926 because of the view of the many that it would lead them backwards both politically and economically. However the subject was later re-introduced in 1960.

During the post independent Kenya, vocational subjects were required to equip the youth with practical skills necessary for both salaried and self-reliance and also to engage in meaningful farming activities to enhance food production and to meet the challenge of industrialization. According to Nyandusi (2001), specific vocational training should be given to all secondary school graduates who have no immediate promise of further education. The secondary school graduates provide the link between the primary level and the university level and therefore were in the right positions of being given the practical skills for application outside school.

The 8-4-4 system was initiated out of the need to vocationalize the curriculum to instill relevance in education as a means of meeting the market demand in terms of employment. The vision 2030 aims at transforming Kenya into a newly industrialized country and it outlines the need to streamline vocational subjects in school to meet the needs of the society especially with regard to food production and employment (Government of Kenya, 2007). The Republic of Kenya (1976) proposes the teaching of vocational oriented skills, in order to encourage self-confidence, creative activity and evaluation capacity. These various recommendations and suggestions attest to the

need for agriculture as a way of mitigating challenges related to employment and food security. Attitudes are of principle concern in any curriculum implementation.

Ongeti (1986) proposes that there is need for a constant evaluation of teachers' attitudes towards vocational education. Mukweru (2006) in his study of the perceptions of Agriculture teachers and students towards topics of environmental conservation recommended a study on attitudes towards Agriculture subject. This study therefore seeks to accomplish this purpose with regard to teachers and students of secondary schools in Baringo North District.

Studies have been done on attitudes towards prevocational subjects. Ongeti (1986) carried out a research on the attitudes of teachers and students of primary schools towards prevocational subjects. The study compared the attitudes of teachers and students of urban (Nairobi) and rural (Tongaren in Bungoma) primary schools. The findings from his study revealed that teachers and pupils in both urban and rural schools had positive attitudes towards prevocational subjects. However his study concentrated on teachers and pupils in primary schools, while this study seeks to establish the attitudes towards Agriculture by teachers and students of secondary schools.

Similarly, Ndirangu (1985) cited in Ongeti (1986) carried out a study on attitudes of teachers towards Agriculture in a rural area. His study utilized teachers' opinions to judge the attitudes of students towards Agriculture. Ndirangu did this with the assumption that teachers knew pupils' attitudes well which may not be the case. However in one of his recommendations, Ndirangu proposed the need to assess

pupils' own attitudes. This study thus sought to accomplish this purpose at secondary school level.

Flowers and Udoto (2001) and Humphrey et al (1994) also carried out research on perception of Agriculture teachers towards Agricultural practices but failed to address attitudes towards the subject. The attitudes of people who are engaged in the teaching and learning of any subject are important as they have a direct consequence on the teaching-learning process. The studies were also undertaken in different geographical regions. This study therefore sought to establish the attitudes towards Agriculture by teachers and students of secondary schools in North Baringo District.

According to KIE (2002), Agriculture must be highly emphasized in schools since it transforms the country into an industrial nation because of its vital roles. In fact the government realized its importance by introducing Agriculture in all secondary schools (Republic of Kenya, 1984). The expansion of teaching Agriculture in all schools and at all levels was considered more important as a means of acquiring certain attitudes of mind, and basic understanding so as to enable the students to participate in social and economic change. However, Agriculture has prompted continuous argument not only at policy making levels in the Ministry of Education (MOE) but also in schools (Ngumy, 1984). Some of the issues affecting teaching of Agriculture in developing countries include curricula content (Crowdes, Bruening and Doron, 1999).

The National Council for Agriculture Education [NCAE] (1999) argues that the Agriculture curriculum must foster appropriate knowledge to enable learners to contribute positively to environmental conservation and increased food products and it envisions a world where all people value and understand the vital role of agriculture. Maxwel (1970) says the importance of Agriculture to Kenya makes it imperative that students develop an appreciation for its central role in nation building. Therefore Agriculture education must prepare students for successful careers and a life of informed choices in the global Agricultural, food, fibre and natural resource systems (NCAE, 1999). Although various education reports recommended Agriculture to be taught in schools, Africans saw vocational education as one having been designed to keep them politically and economically backward (Wanjala, 1991). According to Koros (2008), technical and vocational education is fundamental to the world of work.

Agriculture was introduced in Kenyan secondary schools in 1926 at Alliance high school followed by subsequent drop in 1931 and later re-introduced in 1960 at Chavakali high school. Even when the subject was reintroduced in secondary schools in 1960 it did not receive a warm welcome especially from parents because of perceptions of the subject by people as a means to keep children economically backward. Black (1999) indicates that attitudes of individuals influence their behavior.

The expansion of teaching Agriculture in all schools and at all levels was considered more important as a means of acquiring certain attitudes of mind and basic understanding so as to enable the students to participate in social and economic

changes (Republic of Kenya, 1984). However the negative attitudes towards vocational education (including Agriculture) have been encouraged by discriminate approach of colonial administrators where African children were given vocational education to prepare them for farm work while white children received academic education for white collar jobs.

According to Mukweru (2006), if teachers were change agents for increasing and sustaining Agricultural production through the teaching of Agriculture, then their attitudes would influence their effectiveness in teaching Agriculture since the Agriculture teachers' role has been very important in implementing the curriculum. Since secondary school Agriculture teachers are responsible for implementing the Agriculture syllabus, their attitudes would have a bearing on their effectiveness in implementing the teaching of Agriculture (Mukweru, 2006). This study therefore, investigated the attitudes of teachers and students of selected secondary schools towards Agriculture subject in Baringo North District.

1.2 Statement of the Problem

Kenya gained independence with a pledge to fight ignorance through provision of quality and relevant education to meet the demands of its citizens. At the time of Independence employment, illiteracy reduction, food production and the need to industrialize were critical issues of the young independent nation. Education commissions were thus constituted to recommend ways of improving the education sector to cater for the demands. Vocational education was seen as relevant in addressing these critical demands. Agriculture was one of the vocational subjects that were seen as the means to address post independent challenges.

Although Agriculture accounts for over 30% of the GDP and is responsible for employment to over 80% of the rural population, the subject since its introduction has not received the dignity it deserved especially considering its vital role. It leaves many questions as to whether the attitudes are negative so that Agriculture is not gaining any popularity. Agriculture soon elicited arguments as to whether to scrap, merge with others or whether to be examinable or not. At one point, it was said to be for primary schools. At another time, it was recommended to be merged with other subjects and the debate is still going on to date. At the moment the subject is offered as an elective in secondary schools.

The rate of unemployment in Kenya is increasing, food insecurity is also a major concern at the moment, yet Agriculture was to offer vital skills to the school leavers for self reliance or salaried employment while on the other hand producing sufficient food through improved or modern farming techniques and biotechnologies such as the technology on genetically modified organisms (GMOS) that was necessary to combat the food insecurity problem that is currently threatening the lives of many Kenyans.

The critical questions at the moment are whether the original objectives of teaching Agriculture are diverted or shelved so that the intentions of creating employment and improving food production are not achieved?. Secondly, what are the contents and scope of secondary school Agriculture in relation to relevance towards meeting the goals of employment creation and improved food production?. Thirdly, do the implementers (teachers) and consumers (students) of the Agriculture subject possess the right attitudes towards the subject so that teachers can appropriately offer the right skills and convince the students of the importance of Agriculture for self reliance? With positive attitudes, students can utilize the skills and rightly apply after school for

self employment and to create opportunities for employing others, while at the same time utilizing the skills learned to improve food production.

This study sought to respond to the third question by establishing the attitudes of teachers and students towards Agriculture subject in secondary schools. Attitudes are seen as of primary importance or foundation of the other concerns like content and scope because planners will develop appropriate curriculum if they have positive attitude towards the subject. Many research studies done examined teachers' and students' attitudes towards Agriculture subject at primary school level but failed to address attitudes at secondary school.

Ongeti (1986) and Ndirangu (1985) examined the attitudes of teachers and pupils towards Agriculture subject in primary schools in different geographical locations while the present study targets secondary schools in Baringo North district to establish their attitudes toward agriculture subject. This study established the attitudes of teachers and students towards Agriculture in selected secondary schools of Baringo North District.

1.3 Purpose of the study

The purpose of this study was to investigate the attitudes of teachers and students towards Agriculture in secondary schools of Baringo North District.

1.4 Objectives of the Study

In order to accomplish this purpose, the following objectives guided the study.

1. To find out the relationship, if any, between sex of teachers and students and their attitudes towards Agriculture.

2. To find out the relationship between students' age and their attitudes towards Agriculture.
3. To find out whether the teachers' academic qualifications influenced their attitudes towards Agriculture.
4. To establish the influence of the location of school on the teachers' and students' attitudes towards Agriculture.
5. To find out the relationship between the school land size and the attitudes of teachers and students towards Agriculture.
6. To establish the relationship between the teaching experience of teachers and their attitudes towards Agriculture.

1.5 Research Hypotheses

HO_1 : There is no significant relationship between the sex of teachers and students and their attitudes towards Agriculture.

HO_2 : There is no significant relationship between students age and their attitudes towards Agriculture.

HO_3 : There is no significant relationship between the teachers' academic qualifications and their attitudes towards Agriculture.

HO_4 : There is no significant relationship between the geographical location of a school and the attitudes of teachers and students towards Agriculture.

HO_5: There is no significant relationship between the school land size and the attitudes towards Agriculture by teachers and students.

HO_6 : There is no significant relationship between teaching experience and attitudes towards Agriculture.

1.6 Assumption of the study

The following assumptions were made in this study.

1. That the respondents would express their sincere feelings in responses to the questionnaire items.
2. That the attitudes of secondary school teachers and students towards Agriculture subject would be expressed when solicited.
3. Those attitudes so expressed would be measured using response expressions to the questionnaire item.

1.7 Scope and limitations of the study

The study was carried out in Baringo North District and involved teachers and students of selected secondary schools in Baringo North district. The study also confined itself to Agriculture in the secondary curriculum though many other subjects of the curriculum are offered. The research tool used to measure the attitudes may not have been standardized because of the difficulty to standardize tools for attitude measurements. Therefore results were interpreted in the light of this limitation though efforts were made to prepare a reliable tool. Also the study considered the changeability of human disposition as another limitation given that it is always difficult to assess the attitudes of an individual or group because the very attempt at assessment may cause a change in attitude.

1.8 Justification of the study

The study intended to establish the status of Agriculture in secondary schools to determine how teachers and students view the usefulness of agriculture subject in the secondary school curriculum. The various stages in which Agriculture has underwent

since its introduction in schools in 1926 has necessitated this study. First the subject was introduced in 1926 followed by its drop in 1931.

Second, the subject was reintroduced in 1960 though since then it has elicited numerous arguments both at policy and school level as to whether the subject could be retained or withdrawn in the school curriculum (Republic of Kenya, 1984). Currently, the subject is placed under electives in secondary school curriculum. The question is: What are the attitudes towards Agriculture by teachers and students? This study attempted to answer this question and targeted teachers and students who are the implementers and the consumers of the curriculum respectively.

1.9 Significance of the Study

This study was born out of the passion to establish attitudes towards Agriculture. It was envisaged that findings would assist in strategizing ways of improving Agriculture subject in schools so as to effectively utilize it to engage in meaningful economic development. The findings of the study may thus be useful in establishing how teachers and students view the usefulness of the subject and will help curriculum developers at KIE to provide a means of improving the implementation of the curriculum as well as the content to be included. Policy makers may utilize the findings of the research to make informed decisions based on actual facts and provide a means of addressing the challenges facing the implementation of the Agriculture curriculum.

1.10 Conceptual Framework

The theoretical basis for developing this conceptual framework was grounded in Rosenberg and Havland (1960) cited in Ongeti (1986) who presented attitudes as

having a stimuli and response. The stimuli according to Rosenberg and Havland (1960) are measurable independent variables such as statements on Agriculture and responses are the measurable dependent variables such as verbal statements of affect, verbal statements of belief, and verbal statements concerning behavior.

Attitudes are inferred from what a person says about a thing (an attitude), from the way he feels about it and from the way he says he will behave towards it. Therefore, according to this study, the expressed opinions of respondents will be taken as the verbal expression of attitude. Attitude was used to measure the magnitude to which teachers and students of secondary schools value the usefulness of Agriculture.

Accordingly, the independent variables under this study would be the sex of respondents, age, teacher qualification, and teaching experience, size of the school land and the location of the school (geographical). These factors are manipulated to measure their effects on the dependent variable which is the attitudes towards agriculture. In this case, this study assumed that a variety of factors, one being attitudes influence the status of Agriculture and this study measured the attitudes towards the Agriculture using a variety of factors that the study assumed would influence attitudes. This can be represented by the equation that;

$$As = SC + E$$

Where As = Attitudes

SC= Selected characteristics such as Sex, Age, teacher Qualification, school land size and Location of the school and teaching experience.

E = other factors not measured by this study.

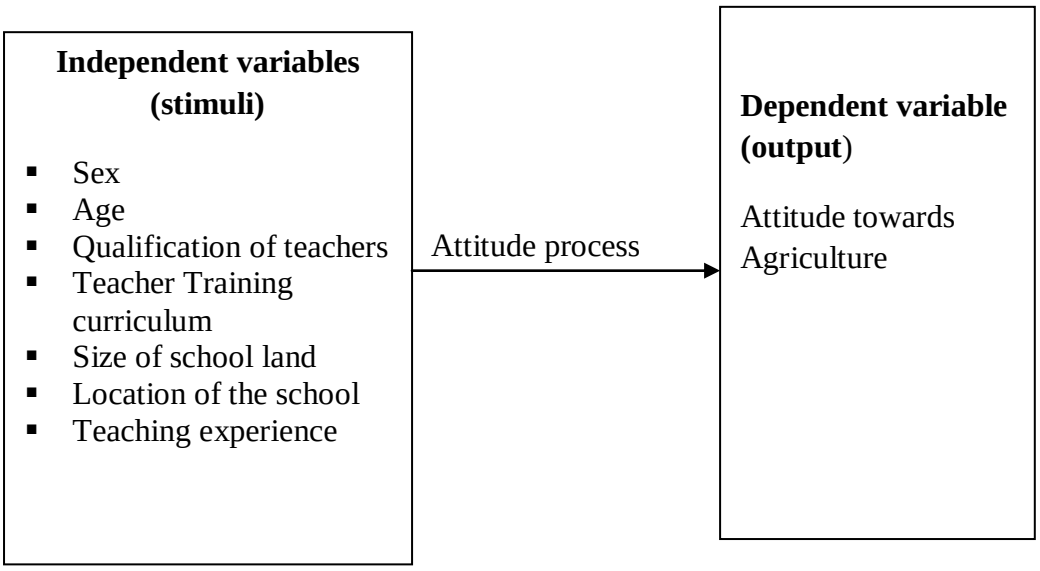

Figure 1: Conceptual framework showing the relationship between variables in the study.

1.11 Definition of Terms

Agriculture Teachers Are the implementers of the Agriculture curriculum in a school.

Attitude This refers in the dictionary to the way you think, feel or behave. It is a positive, negative or mixed reaction about Agriculture subject

Curriculum The dictionary meaning of a curriculum refers to all subjects that are taught in a school, college or university. In this study, it refers to all what is taught and learned by learners by students in school.

Gender- Garret (1992) defined as socially determined personal and psychological characteristics associated with being a male or female. In this study, gender refers to the biological state of being male or female.

Perception Is the meaning we attach to information through our senses (Woolfolk, 1987). In this study perception will therefore refer to the opinion regarding the usefulness of secondary school Agriculture subject or the judgment/evaluation regarding appropriateness of Agriculture knowledge, skills and attitudes integrated in KCSE Agriculture syllabuses.

Head teacher - According to this study is the head of a school. In this study it refers to the person in charge of the institution or a secondary school.

Secondary School - According to oxford dictionary, it refers to a school for children aged from eleven to eighteen. However in this study it refers to the

third level of Education after three years in pre-school, and eight years in primary school.

Student - The dictionary meaning of a student is a person who is studying in any level of a school. In this study therefore, it refers to learners in a school who are the actual consumers of the curriculum.

Vocational Education The dictionary meaning refers to education that provides skills and knowledge that one needs to do a particular job. In this study, it refers to an education programme that provides students with knowledge and skills for a particular occupational field such as Agriculture

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter presents related studies on attitudes towards Agriculture. Past research on attitudes towards Agriculture have been reviewed, their findings assessed and their recommendations reflected upon. The chapter is organized to provide a summary of these findings and how they relate to the proposed study. The chapter is organized into role of Agriculture, Literature related to the historical development of Agriculture curriculum in secondary schools; Agriculture curriculum in secondary schools; objectives of Agriculture Education; Literature related to attitudes towards Agriculture; Studies related to the variables of the study: Measurement of attitude; Challenges of implementing Agriculture curriculum and finally chapter summary.

2.2 Role of Agriculture to the economy of Kenya

Agriculture provides virtually all the food required to feed the population (KIE, 1985). According to Republic of Kenya (1994), Agriculture accounts for about 30% of Gross Domestic Product (GDP) and generates employment opportunities to over 80% of the rural population besides playing a very important role in the economy of Kenya.

Agriculture also supplies raw material to industries and guarantees food security as well as earns foreign exchange. Maxwel (1970) contends that the importance of agriculture to Kenya makes it imperative that students develop an appreciation for its central role in nation building. The government has therefore realized this role of Agriculture by introducing agriculture in all secondary schools in Kenya (Republic of Kenya, 1984).

According to Wanjala (1991) Agriculture plays a vital role in the economy of the country by ensuring increased income and employment to rural population especially small-scale producers.

It is therefore worth noting that Agriculture is the backbone of the Kenyan economy and it is the livelihoods of many people especially in Kenya. This important role of Agriculture is evidenced by setting up of many institution offering careers in Agriculture and the expansion of Agricultural industries that are vital in building the economy. Republic of Kenya (1994) states that the government will continue to ensure that principles of Agriculture and livestock production are firmly incorporated in the syllabi and curricular of primary and secondary schools, specialized Agricultural training institutes and at the university. This is to reinforce Agriculture as a gainful source of living and employment. This study therefore, sought to establish the attitudes of teachers and students towards Agriculture in secondary schools.

2.3 Literature related to the historical development of Agricultural curriculum

Agriculture curriculum is as old as education in Kenya. The curriculum has undergone various developmental stages during both the pre and post independent Kenya. According to Ondiek (1986) the curriculum that was offered to the youth since 1890 was meant to prepare them for responsibility as an adult and included among others farming that include raising cattle. The primary goal of missionary education was to make converts and train catechist but it soon established the following practical skills like gardening to maintain mission stations.

The various education commissions saw further development of the Agriculture subject. The Frazer report 1909 came up with technical education for Africans thus

led to the establishment of industrial training in schools in 1912 in basic skills such as Agriculture. Frazer report thus became the foundation of technical education.

The Phelps-stokes report of 1924 emphasized practical Agriculture oriented education and recommended that African curriculum was to be practically orientated. This led to the introduction of Agriculture in secondary schools in 1926 at Alliance High School. However, technical education was taken as manual labor to take Africans back to the land.

This was perhaps the reasons why the subject was dropped in 1931 after its introduction in 1926 possibly due to this negative perception and attitude towards the subject. According to Shiundu and Omulando (1992) there has been a negative attitude towards technical and vocational education by a large section of the Kenyan community yet JICA (2008) says in many countries, technical and vocational Education Training (TVET) is considered as a strong vehicle for social and economic development. The Beecher report (1949) reinforced the arguments of its predecessors' reports (Frazer, 1908 & Phelps stokes, 1924) that Africans should be provided with practical education which is suitable to the development of their communities.

The Beecher report reinforced the need to offer practical education (Agriculture) possibly to instill positive perception and attitudes towards the subject owing to its drop after a short period of introduction of the subject in secondary schools. The Beecher report (1949) became the turning point in the subject and in 1960 the subject was re introduced at Chavakali High School. The Ominde report (1964) continued to emphasize the teaching of agriculture in schools but concentrated much on a positive orientation towards Agriculture as the principle industry of Kenya thus brought the issue of attitude change on the subject. Ominde report also recommended agriculture

as a subject to be offered as part of a revised general science curriculum. On the general attitude towards Agriculture in secondary school curriculum, the Ominde report (1964) states:

> Apart from agriculture as vocational objective, our witnesses have rightly insisted on the need to create a more positive attitude towards the land among the generality of pupils. The main thing is not however an intimate knowledge of detail but a positive orientation towards agriculture as the principle industry of Kenya (Republic of Kenya, 1964: 84).

The Bessey(1972) and Gachathi (1976) reports emphasized the teaching of Agriculture to schools to ensure students are informed of the vital role of Agriculture to economic development of the country. Notably, the Bessey report (1972) recommended the teaching of vocational subjects like Agriculture in both primary and secondary education.

The Mackay report (1982) oriented the content of curriculum towards technical education and moved away from examination centeredness. This paved way for the introduction of 8-4-4 system of education in 1985 which Moi (1987) as cited in Nyandusi (2001) states that the 8-4-4 system was born out of the need to "impart enjoyable technical and scientific knowledge to learners at each stage by promoting technical and vocational education. Agriculture as a practical skill education was thus taught in upper primary (Oketch and Asiachi, 1992). Koech report (2000) recommended curriculum of primary school Agriculture to be examinable subject while the secondary school Agriculture to be placed under electives.

Currently Agriculture subject is in group 4 under applied practical skills and technical and vocational subjects where students choose one subject from among a variety of

subjects in the category. Okaka (2001) lists these technical and vocational subjects as agriculture, wood work, metal work, power mechanic, electricity, drawing and Design, Building and construction, Business Education art and Design and Music. This indicates a negative perception towards Agriculture subject.

The subject is placed under electives yet it is widely said Agriculture is the backbone of the Kenya's economy which is expected to transform the country into rapid industrialization. There was need therefore, to investigate into current attitudes of teachers and students towards agriculture which formed the basis for this study.

2.3.1 Agriculture curriculum in secondary schools

According to the Republic of Kenya (1984), Agriculture was introduced in all secondary schools in Kenya because the government realized its importance. Various commissions recommended Agriculture to be taught to Africans, though the Africans saw Vocational education as one having been designed to keep them politically and economically backward (Wanjala, 1991) yet Koros (2008) says technical and Vocational Education is fundamental to the world of work. Agriculture was introduced to all secondary schools to ensure that youth is informed of the vital role that Agriculture plays. According to Hunger ford and Volk (1990), education programmes (including Agriculture) can influence behaviour of learners.

The 8-4-4 system emphasized teaching more technical and vocational skills in secondary schools in order to serve those who would not continue with further formal education (Kathuri, 1990). According to the Republic of Kenya (1984) when the 8-4-4 system of education was introduced the government of Kenya had policy that each

secondary school must offer a technical and vocational education subject or more a long with the other academic subjects.

Infact professor Ngeno the then Minster for education at launching of 8-4-4 system said;

> In this regard, agriculture will be taught in all our secondary schools to enable many of our youth to appreciate the role of Agriculture in national building effort (Republic of Kenya, 1994; p vi)

The 8-4-4 system of education was thus intended to develop the right attitudes towards technically oriented subjects such as Agriculture (Eshiwani, 1993). According to Bloom (1976) technical subjects were seen to provide an opportunity for students to develop their domains of cognitive, affective and interactive skills. Agriculture was therefore seen as a means of enhancing economic development which is currently seen as mainstay of the Kenya's economy.

The expansion of teaching Agriculture in all schools and at all levels was not just to add to the factual knowledge and basic skills but what was considered more important was the acquisition of certain attitude of mind and basic understanding so as to enable the student to participate in social and economic changes (Kathuri, 1990).

The usefulness of agriculture in schools can only be realized if there is a positive perception of the subject. This can go a long way in improving the success of Agricultural enterprises in the school. A careful examination of objective of agriculture subject reveals that if they are achieved the learner will appreciate the role played by Agricultural education in secondary schools.

According to Dlamini (1992), Agriculture projects in schools were bringing a more positive attitude towards Agriculture. The goal of 8-4-4 system of education among others was to respond to the challenges of National development and participation of the youth in development.

It was also to provide a practical oriented curriculum that will offer a wide range of employment opportunities. This saw the emphasis of technical and vocational education thus ensuring that the students graduating at every level have some scientific and practical knowledge that can be utilized for self employment, salaried employment or further training (Republic of Kenya, 1994).

2.3.2 Objectives of Agriculture education

Mukweru (2006) defined objectives as statements outlining terminal behaviour change in the learner after being exposed to a set of experience. The objectives therefore determine the expected outcomes of learning and are thereafter used for selecting materials, content, instructional procedures and preparing tests (Kathuri, 1990). Objectives are used as a reflection of what is important in terms of acquisition of desirable, cognitive, psychomotor and affective skills by the learner (Mukweru, 2006).

According to KIE (2002), the following are the current objectives of teaching Agriculture in Kenya secondary schools:

1. To develop an understanding of Agriculture and its importance to the family and nation.
2. To promote interest in Agriculture as an industry and create awareness of opportunities existing in Agriculture and related sectors.

3. To demonstrate that farming is a dignified and profitable occupation.
4. To enhance skills needed in carrying out Agriculture practices.
5. To provide a background for further studies in Agriculture.
6. To develop self-reliance, resourcefulness and problem solving abilities in Agriculture.
7. To develop an occupational outlook in agriculture.
8. To enable schools to take an active role in national development though Agricultural activities.
9. To create awareness of the role of Agriculture in technology, industrial and technical development.
10. To enhance understanding of the role of technology and industrialization in Agricultural development.
11. To promote consciousness of health, promoting activities in Agricultural production.

The objective of teaching Agriculture was to instill skills to the graduands, create positive attitudes towards agriculture, appreciate role of agriculture in national development and to take agriculture as a career in life. A study on the attitudes towards Agriculture by teachers and students of secondary schools was the main concern of this study.

2.4 Literature related to attitudes towards Agriculture subject

Attitudes are learned pre dispositions to respond positively to certain objectives, situations, instructions or persons (Oppenheim, 1992). Attitudes are said to be positive when they are favorably directed towards a target. When they are directed

unfavorably towards a target they are said to be negative. Attitudes are inferred from what a person says about an object, from the way he feels about it and from the way he says he will behave towards it (Ongeti, 1986). According to Taba (1962), initiating a curriculum change encompasses human engineer, a strategy of modifying attitudes and feelings which often is a task of producing competence for curriculum development.

Agriculture was recommended to be taught in all secondary schools to enable many of the youth to appreciate the role of Agriculture in national building effort (Republic of Kenya, 1994). The students' appreciation of the subject was central in developing positive attitudes towards the subject. This is further supported by Husen and Postlewaite (1994) that attitudes are central to the education process both as ends and means depending on whether they are positively or negatively directed towards a particular subject. They are considered to promote or inhibit students' behaviour in the classroom, they are also considered to influence choice to attend, respond, value, participate and make commitment to educational activities.

Ferron (1985) also indicated that if implementation of innovation has to succeed in classroom procedures, the feelings of teachers and learners should be taken care of. According to Ongeti (1986) a highly conceived curriculum projects have been known to fail due to lack of support from participating teachers and pupils. Ongeti says the implementing personnel and their attitudes have an impact on curriculum implementation and therefore once attitudes of teachers and students are known would help to improve the prevocational curriculum in schools (Ongeti, 1986).

A study conducted by Onyango (1982) to examine the secondary school students' attitudes towards rural life in central province indicated that students had a positive

attitude towards farming and Agriculture. However, differences in attitude existed in relation to age and class with older pupils in higher classes favoring Agriculture more than younger ones in lower classes. Also males appear to favor Agriculture more than female. This study was limited to primary schools and therefore little is known on attitudes of secondary school teachers and students towards Agriculture. This study was seeking to establish attitudes towards Agriculture by the teachers and students.

Based on Gross et al (1971) the factors that facilitate or hinder the effective implementation of education innovations include among others the teachers and pupils attitude towards the innovation. The main process involved in curriculum implementation is changing the attitude of pupils, administrators, teachers and learners (Shiundu and Omulando, 1992). Bishop (1985) suggests that the process of curriculum implementation involve changing attitudes of all the parties involved. Therefore, during curriculum development process people must be persuaded to accept change because people do not like change by nature (Oluoch, 1982). According to Gross et al (1971), when teachers have positive attitudes towards an innovation they will be willing to spend time and efforts in the implementation process.

Saylor and Alexander (1973) indicate that research has demonstrated a relationship between teacher attitude towards a curriculum and its ultimate effectiveness. Determining the reasons for any teacher dissatisfaction may suggest remedies which when implemented will bring a change of teacher attitudes and subsequently increase the effectiveness of a curriculum. Saiti (1999) further indicates that the failure to implement curriculum was attributed to negative attitudes by teachers and students and lack of management support for teachers. However, Dlamini (1992) indicates that

Agriculture projects in schools were bringing a more positive attitude towards Agriculture.

The attitudes of implementaters and consumers of Agriculture subject is thus paramount in developing strong positive perception towards Agriculture and effective as well as efficient implementation of the Agriculture curriculum. In order to develop the positive attitudes towards Agriculture, the individuals need to be positively directed towards the intended direction.

The objectives of teaching Agriculture was thus to instill skills to the graduants, create a positive attitudes towards Agriculture, appreciate the role of Agriculture in national development and to take Agriculture as a career in life. This is because Black (1999) says that the attitude of individuals influence their behavior. The need for positive attitudes towards a subject is important because a relationship has been found to exist between attitudes and achievements (Ongeti, 1986). The importance of Agriculture to Kenya makes it imperative that students develop an appreciation for its central role in nation building (Maxwell, 1970). The government realized importance by introducing Agriculture to all secondary schools in Kenya (Republic of Kenya, 1984).

Attitudes towards the subject determines to a great extent the way the subject is chosen by candidates, allocation of resources to the subject by principals, the seriousness to which the subject is undertaken and the way in which the subject is implemented in schools. During the colonial era, the subject was held in low esteem because of the perceived reasons behind its introduction. It was perceived as a preparation for farm work and also to keep children economically backward (Wanjala, 1991).

Mukweru (2006) suggests that if agriculture teachers were change agents for increasing and sustaining Agricultural production through teaching of Agriculture, then their characteristics and attitudes would influence their effectiveness in teaching Agriculture. The secondary school Agriculture teachers have the challenge of implementing the Agriculture syllabus and their attitudes would have a bearing on their effectiveness in implementing the teaching of Agriculture.

According to Black (1999) the attitudes of concepts of teachers are related to morale and the personality of the industrial and that those opinions leads to behaviour. Ngaroga (1996) while highlighting the recommendations of the Ominde Commission of 1964 indicated that agriculture cease to be a separate subject in primary schools and becomes an ingredient in a revised general science syllabus. The subject was thus made part of the general science until 1985 when the 8.4.4 system of education was introduced. In light of these facts, this study established the current attitudes of teachers and students of secondary schools towards Agriculture.

The Ominde commission gave less emphasis on vocational subjects like Agriculture because Agriculture had become unpopular because first it was associated with punishment and tedious chores; second Agriculture was viewed by pupils, teachers and parents with contempt and thirdly it was looked down upon and was associated with school failure (Ngaroga, 1996). These factors highlighted by Ominde commission are pointers to the way agriculture was viewed or perceived.

The negative attitudes of the subject may explain why the Agriculture subject was introduced to schools in Kenya in 1926 followed by subsequent drop of the subject in 1931 though it was later re-introduced in 1960 at Chavakali high school. In the current secondary school curriculum, Agriculture is placed under elective or optional

subjects which also provide facts on the attitudes even by policy makers and curriculum developers today. There is therefore need to investigate the current attitudes towards the subject by teachers and students of secondary schools.

This study therefore, was seeking to establish the attitudes of teachers and students towards Agriculture subject in secondary schools. Teachers are involved in the implementation of the school curriculum and the students are the actual consumers of the Agriculture curriculum and therefore their attitudes are of paramount importance if successful curriculum is to be realized.

2.5 Studies related to the variables of the study.

Agriculture at the moment is taught in all secondary schools from form one to four. However, the subject is offered as an elective. A study conducted by Onyango (1982) to examine the secondary school students' attitude towards rural life in central province, indicated that students had a positive attitude toward farming and Agriculture.

The differences in attitude existed in relation to age and class with older pupils in higher classes favoring Agriculture more than younger ones in lower classes. Also males appeared to favor Agriculture more than females. However, the study was limited to primary schools and little is known on attitudes of secondary schools towards the subject. Besides, the study was principally concerned with attitudes towards rural life.

Therefore this study seeks to address this gap to establish the attitudes towards Agriculture by the concerned. Ages of teachers and students will also be the variable of the study to establish its influence on the attitudes towards the subject. Secondary

school Agriculture is provided as part of the mainstream education curriculum for students to appreciate the role of Agriculture and where possible, pursue a future career in it (FAO, 1992; Ongeti, 1986). Therefore understanding attitudes towards the subject is instrumental to reveal areas to be addressed with the aim of improving the implementation of the subject.

The status of Agriculture is assumed in this study to be influenced by a variety of factors one of which is attitudes. Kathuri (1990) in his study of the new Agriculture education curriculum in secondary schools in Kenya indicated that teacher characteristics which include age, qualification and teaching experience contribute to students' achievement. Teacher qualification was found to contribute significantly to students' achievement while teachers experience contributed very little.

The study also indicated that Agriculture teachers differ in the way they perceive secondary school Agriculture. The difference in perception can partially be explained by the different characteristics. The study further showed that parents' residence had an influence on students' interest in Agriculture and that students whose parents lived in the city indicated that learning of Agriculture did not increase their interest in Agriculture.

This study only examined teacher characteristics in relation to students' achievement but failed to address the relationship between teacher characteristics and attitudes towards Agriculture as subject. Further, the study did not exhaust on the various variables that are likely to influence attitudes towards the subject. In addition, the study was carried out in a different geographical locality other than the proposed study area. The study also concentrated on parents' residence in relation to students' interest in Agriculture but did not elaborate the attitudes of students towards the

subject. Owing to this limitation, this study attempts to establish the attitudes of teachers and students towards agriculture subject. Qualification and teaching experience formed part of the variables for this study to establish its influence on the attitudes towards Agriculture subject.

Sifuna (1984) explained that untrained teachers are a great set back to the curriculum implementation. By this he meant the qualification of teachers is a pre-requisite if effective implementation has to be attained. This is supported by Tum (1996) that the question of teachers' quality comes during implementation. The teachers' qualification plays an important role in teaching because they influence instructional competence and may also determine existence of instructional problems in specific subject (Rotumoi, 2005).

Although the training aspect is widely advocated here for effective teaching, Republic of Kenya (2005) reports that some teachers are inadequately trained. This raises the question of quality of teachers in secondary schools which also raises concern on the effect of attitudes towards the subject. According to Ongeti (1986) teachers are criticized for not having the conviction, the knowledge or the training to inculcate the right attitude to Agriculture, pastoral and manual activities. There is therefore need to constantly supervise the teachers' attitudes if the success of the subject is to be realized. Teachers have also been reported to be disinterested in vocational education because a majority of them had never been trained to teach Agriculture and they did not wish to play the part of curriculum officers (Ongeti, 1986).

However, the current government programmes for teacher education aim at providing qualified teachers and are therefore central to ensuring the provision of quality education (Republic of Kenya, 2005). The objectives of teacher education are to

develop communication skills, professional attitudes and values. The growth in the quality of education services should also entail continuous skills upgrading for teachers. However this has not been the case and the limited opportunities for in service training has denied most of them the chance to enhance their skills beyond those acquired during their basic training (Republic of Kenya, 2005).

A study by Kathuri (1985) on prospects and problem in secondary school Agriculture revealed that head teachers and Agriculture teachers have a significant role to play in making the teaching of Agriculture practical. The teacher has a professional role; the headmaster being in control of all the finances in the school would be expected to release the funds. He is supposed to understand this role from both academic and economic point of view. The attitude position of the implementers will thus be very important aspect in determining the resource allocation towards the subject.

Humprey, Linhart and Stewan (1994) contend that teachers with Agriculture experience have more agriculture knowledge and more accurate perceptions of Agriculture. This goes a long way in influencing their attitudes towards Agriculture subject. Agriculture teachers with more knowledge on content are likely to be more effective in teaching agriculture.

The studies did not however explain the dimension of the relationship between these teacher characteristic (qualification and experience) and their attitudes towards Agriculture subject hence the need to study on attitudes towards Agriculture subject.

Mukweru (2006) in his study of perceptions of Agriculture teachers towards topics of environmental conservation posits that teachers' gender is likely to influence their perceptions towards topics in KCSE Agriculture syllabus. The study only

concentrated on topics in agriculture syllabus but failed to address the attitudes towards the Agriculture subject. The study was also limited to perceptions and failed to address the attitude aspect towards the subject. This necessitated this study to establish the attitudes of teachers and students towards the Agriculture subject.

The study also indicated that if teachers were change agents for increasing and sustaining Agricultural production through the teaching of Agriculture, then their characteristics and perceptions would influence their differences in teaching agriculture.

The role of Agriculture teachers has been very important in implementing the curriculum. The secondary school Agriculture teachers have the challenge of implementing the Agriculture syllabus and their perceptions and personal characteristics would have a bearing and their effectiveness in implementing the teaching of Agriculture. Indoshi (1992) says that effectiveness and efficiency in teaching and learning are determined by teacher academic and professional characteristics as well as experience of a teacher.

According to Kathuri (1990) teacher characteristics contribute to students' achievement while Mukweru (2006) posits that gender is likely to influence the teacher perceptions towards topics in KCSE Agriculture syllabus. The characteristics and perceptions would thus influence the teachers' effectiveness in teaching agriculture (Mukweru, 2006). These perceptions further have a bearing on attitudes towards Agriculture subject.

There is therefore need for schools to realize that they are handling a very important subject thus must give it its due respect which can be achieved through developing the right attitudes towards the subject. Since teachers are the implementers of the curriculum and the students are the ultimate consumers, the students can thus determine the quality of the curriculum because Tanner and Tanner (1980) says the user of the house is even a better judge of the house than the builder.

There was need to examine the various factors likely to influence attitudes towards the subject. This formed the basis for this study.

Gender is one of the variables that this study seeks to establish its influence on attitudes towards Agriculture subject. In a study on the perception of Agriculture teachers towards the topics of environmental science, Mukweru (2006) says teachers' gender is likely to influence their perceptions towards topics in the KCSE Agriculture syllabus. The study however did not explain how gender influences attitudes towards Agriculture as a subject which was the main concern of this study.

Onyango (1982) in his study of secondary school pupils' attitudes towards rural life in central Province posits that male students appear to favor Agriculture more than female. The study was examining the attitude and did not explain the role of gender in influencing attitudes towards Agriculture as a subject. Further, the study was carried out on a different set up other than the one this study is examining and the findings can be used for comparison purposes in the two regions.

According to Koros (2008), a closer examination of girl's enrollment in technical and vocational education subjects like Agriculture reveals a heavy traditional bias for Agriculture subject. In his study on the learners' Perceptions towards technical and

vocational Education in Kenya, Koros (2008) indicates biasness towards the choice of technical and vocational subjects with girls preferring Agriculture more than boys. The study however did not elaborate on how the gender difference influenced attitudes. The study was also conducted in a different geographical location other that the study area of the current study.

The Review of this literature by the various scholars indicated a gap in gender influence on attitudes towards Agriculture subject. This study addressed the gap to establish the attitudes towards Agriculture subject. While elaborating on the importance of Agriculture projects, Dlamini (1992) says Agriculture projects were bringing a more positive attitude towards Agriculture yet Ongeti (1986) contends that training youths in village polytechnics for farming is frustrated by the unavailability of farming land. This is also an indication to the effect that farming land (school land) is a factor that can influence attitudes towards the subject and was therefore a critical variable for investigation in the current study.

2.6 Measurement of attitudes

Attitudes according to Ongeti (1986) has three components namely the cognitive component which is the idea used by people to think; the affective component which is the emotion that charges the idea such as feeling good or bad and finally the behavioral component which is the predisposition to action such as admiring agriculture subject. According to Rotumoi (2005), an attitude held can manifest itself through behavior. This addresses the third component of attitude which pre disposes action like admiring or disliking Agriculture subject. While Elaborating on attitude, Ongeti (1986) says;

> Attitudes are inferred from what a person says about an attitude object, from the way he feels about it and from the way he feels about it and from the way he says he will behave towards it (Ongeti, 1986; 31***).***

By this, Ongeti elaborates therefore that attitudes can thus be measured by various methods owing to the various components of attitudes. This study utilized the behavioral component of studying the expressed opinions of the respondents as an expression of their attitudes.

The challenge with the method was the possibility of allowing subjectivity in interpretation (Ongeti, 1986). In order to overcome the challenge, a set of statements on which agreements or disagreements could be expressed was useful in generating their opinions on their attitudes towards Agriculture subject.

Likert (1937) cited in Ongeti (1986) developed summated rating which involves defining the issue towards which attitudes might be expressed and measured such as Agricultural subject. The researcher collects a number of statements which are relevant to the issue. However, the likert scale is not standardized to measure attitudes towards all possible things but will be useful tool in this study.

2.7 Challenges of implementing Agriculture curriculum

Curriculum Implementation is a critical stage in any school curriculum. This stage demands co-ordination of various human and material resources necessary for successful curriculum implementation. Theorists like Oluoch (1982) and Shiundu and Omulando (1992) concurs with Gross et-al (1971) that the befitting conditions for any implementation requires changing attitudes of people involved when implementing any programme, providing a adequate materials, facilities and equipments, training

teachers and providing sufficient and continuous, reliable administrative support to teachers.

However, there is a general inadequacy of use of the recommended text books in schools (Rotumoi, 2005). Although some materials are available in some schools, it is at times difficult to obtain them for use due to bureaucratic nature of some schools adopted in obtaining these instructional materials (Rotumoi, 2005). In the catalytic role model in combine schools, Gross et-al (1971) reported that implementation was hindered by the lack of resource materials and facilities. Orora (1997) also named several elements such as physical facilities, qualified and competent lecturers, curriculum and instructional materials and equipments, teaching and learning strategies, comprehensive and continuous evaluation, and effective management as the main determinants of quality success.

Wafula (1990) in his investigation of the teaching of geography at ordinary level in Harambee schools in Bungoma District notes that the lack of proper text books, teaching Aids and libraries affected the teaching of Geography. According to Tum (1996), unequal supply of educational facilities in the various regions of Kenya is prevalent. In some schools teachers are in adequate while in some, untrained teachers are utilized to teach vital subjects like Agriculture.

The lack of human and material resources, poor attitudes towards agriculture and lack of administrative support poses great challenges in implementation of technical & vocational subjects like agriculture (Koros, 2008). Curriculum implementation must therefore be assessed in terms of its effectiveness. There is need therefore to find out the challenges faced by agriculture teachers while implementing Agriculture

curriculum and this study in its specific objective sought to establish the challenges faced by Agriculture teachers in curriculum implementation.

2.8 Chapter Summary

The studies in the literature indicated an emerging trend in the attitudes towards Agriculture. From the literature reviewed, the researcher established that attitudes are significant for effective implementation of the curriculum. It was also revealed through the literature reviewed that teachers' characteristics such as the training attained in colleges, the academic qualification, the teaching experience were paramount in the implementation of the Agriculture curriculum.

The chapter looked at the general literature related to the importance of Agriculture followed by the literature related to the historical development of Agriculture, and finally the challenges faced by teachers in implementing the Agriculture curriculum. It was revealed through the literature reviewed that Agriculture was slowly withdrawn from being a main subject in school curriculum to an ingredient in some major subjects and finally to an elective position of the subject in the current secondary school curriculum.

It was further revealed that a rising rate of food insecurity, poverty and unemployment are currently experienced in Kenya yet Agriculture was initially thought to be the intervention strategies to the challenges mentioned. Agriculture was introduced in schools to equip learners with vital skills and technologies necessary for fighting food insecurity, poverty and unemployment which was a threat to the nation. However, a careful examination on the literature reviewed showed a discontentment on the manner in which Agriculture was being handled.

The observed trend has prompted the researcher to establish the current status of Agriculture by the teachers who are the implementers and the students who are the actual consumers of the Agriculture curriculum. This study seeks to establish the attitudes of teachers and students towards Agriculture in secondary schools. Various studies highlighted in the chapter indicated the influences of the various factors of principals, teachers and students towards students' achievement in the subject but did not establish the relationship between the various factors and their attitudes towards Agriculture. This gap necessitated the quest for this study.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This study endeavored to establish the attitudes of teachers and students of secondary schools towards Agriculture. Specifically the study sought to investigate the relationship between the various independent variables of the study. The variables of concern in the study were age, sex, and academic qualification, and teaching experience, size of the school land, training of teachers and the location of the school. These variables were investigated to establish their influence on the attitudes of teachers and students towards Agriculture subject. This chapter thus contains a description of the characteristics of the study area, research design, the study population, sample size, sampling procedures, data collection instruments, data collection procedures and data analysis.

3.2 Research Design

According to Kothari (2004) a research design is a conceptual structure within which research is conducted. It constitutes blue prints for collection, measurement and analysis. This study employed a cross-sectional survey design. A survey design is mainly looking at phenomenon, events and issues the way they are (Mugenda & Mugenda, 1999). Survey design is also concerned with making accurate assessment of the influence, distribution and relationship of phenomenon (Edwards, 2006). The design was thus appropriate because it mainly looks at phenomena, events and issues the way things are (Mugenda & Mugenda, 1999). Survey design is the only means through which views, opinions, attitudes and suggestions for improvement of

educational practice and instructions and other data can be collected (Koul, 1993). In addition, the design provides accurate descriptive analysis of characteristics of a sample which can be used to make inference about the population (Kerlinger, 1973). Therefore, a cross-sectional survey design was seen as appropriate in this study.

3.3 Study Area

The study was carried out in Baringo North District in Rift Valley province. The district was chosen because there was insufficient research in the district especially on attitudes towards Agriculture. The district is bordered to the North by Baringo East District, to the East by Marigat District, to the south by Baringo District and to the west by Keiyo and Marakwet Districts. Administratively, the District is divided into 4 divisions namely Kabartonjo, Barwessa, Kipsaraman and Bartabwa divisions with 14 locations. It has a population of 78,529 people according to 1999 population census (Action Aid, 2006) and the district is classified into three agro-ecological zones namely highlands suitable for Agriculture and dairy farming; Midland inhabited by agro-pastoralists and Lowlands mainly for livestock rearing.

The highlands receives an average annual rainfall of 1200mm with mean annual temperature of 25^0c at highland while lowlands receive an average annual rainfall of 600mm with temperatures above 32^0c. The largest area of the district is considered arid and semi arid (ASAL) land. High poverty rates and food insecurity compounded with poor infrastructure characterizes the district (Government of Kenya, 2006).

3.4 Study Population

Population under study comprised teachers and students of the five secondary schools in Baringo North district selected through stratified sampling because the schools are heterogeneous in nature due to their varying characteristics. For the purpose of this study, stratification was based on whether a school was single sex or mixed. There were 18 secondary schools in the district out of which 3 were Girls, 2 were Boys schools while the rest 13 were mixed schools. A total of 5 schools were selected from the three strata of Girls, Boys and mixed schools. The students' population from the selected schools was 800 while the teacher population was 50. It was from this population that a sample was selected to participate in the study. Out of the 50 teachers from the 5 selected schools, only 12 were sampled to participate in the study. Teachers were selected irrespective of whether they were Agriculture teachers or not.

3.5 Sampling Design and Sample Size

Sampling refers to the procedure the researcher will adopt in selecting items for the sample (Kothari, 2004). Stratified sampling was done using a sample frame of secondary schools in the District to form various categories of the strata based on whether a school was single sex or mixed school. Three strata was generated namely Girls, Boys and Mixed schools. This is because the population is heterogeneous and according to Kathuri & Pals (1993), the sub-group in a population is more or less reproduced making the study results more reliable.

Kathuri & Pals (1993) recommended the use of 30% of a population to form a sample, while Kothari (2004) suggested the use of over 10% of a population to form a representative sample for a study. A simple random sample was used to pick 5

schools from across all the three categories of the strata. The total population of students from form 1-4 in the 5 selected schools was 800 while that of teachers was 50. Therefore the total population was 850 from which a sample was obtained. Simple random sampling was used to select respondents to participate in the study. Therefore, the total sample size used in this study was 222 respondents which represented 26.12% of the total population.

3.6 Ethical Considerations

Permission was sought from the relevant authorities to undertake the research. Clearance to carry out the research was sought from the department of Curriculum Instruction and Educational Media of Moi University. The permission was further used to obtain permit from the National Council for Science and Technology. The head teachers were informed of the exercise through a letter prior to the start of the exercise. The researcher personally delivered the research instruments, administered and collected them for analysis. The respondents were assured of confidentiality in the information they provided while responding to the questionnaire.

3.7 Research Instruments

The research utilized questionnaires to collect data. A questionnaire was chosen because of its simplicity in administration and its ability to cover a larger sample (Mugenda & Mugenda, 1999). The instrument consisted of both open and closed ended questions and was administered to the respondents who filled on their own. This was because the respondents were all literate. A cover letter accompanied the questionnaire to introduce the subject to the respondents. The questionnaires were given to all the selected teachers and students of the selected schools. Teachers were

chosen because they were the actual implementers of the curriculum while students were the consumers of Agriculture curriculum. The questions on the questionnaire consisted of a five point Likert-type questions used to measure attitudes towards Agriculture. The subjects had to check one possible response on each item. Some of the items were stated negatively while others were stated positively.

3.8 Validity and Reliability of the Research Instrument

3.8.1 Validity of the Research Instruments

Validity refers to the extent to which an instrument measures what it purports to measure. It deals with how accurately the data obtained in the study represents the variables of the study. It therefore implies that validity is the accuracy and meaningfulness of inferences which are based on the research results (Mugenda & Mugenda, 1999).

According to Best and Kahn (1989), the validity of an instrument is demonstrated, when the instrument is seen to be asking the right question in the least ambiguous way. In this study, expert judgment of content validity was used. Kothari (2004) argues that determination of content validity is primarily judgmental and intuitive. It can also be determined using a panel of persons who shall judge how well the instrument meets the standards, but there is no numerical way to express it. Thus, assistance was sought from the researcher's supervisors and other research experts in the department of curriculum, instruction and Educational media of Moi University to assess the relevance of the research tools against the objectives of the study. Their suggestions were used to improve the clarity of the items on the questionnaire used in study.

3.8.2 Reliability of the Research Instruments

Reliability is the extent to which a measuring instrument contains variable error, error that appeared consistently from observation to observation during any one measurement attempt or that which vary each time a given unit is measured by the same instrument (Nachmias & Nachmias, 1996). Piloting was carried out in two secondary schools in the adjacent Baringo District. This was done outside the district of study to avoid leakage of information to the respondents who would participate in the actual study as this would interfere with the findings of the study. Test – Retest technique was used to determine the reliability in where the questionnaires were distributed to the selected respondents in the piloted schools and then analyzed to assess the reliability of the instruments. The pilot phase helped to determine the clarity or ambiguity of items and the level of language that the study used. During piloting, items which received a low "undecided" frequency and a low ambiguity index were deemed suitable in the final questionnaire while the unsuitable items were those which received more "undecided" responses and which had ambiguous questions. The items of low reliability were improved or not used in the final questionnaire.

A Cronbach alpha coefficient was used to determine the reliability of the instruments. According to Mugenda and Mugenda (1999), a Cronbach alpha reduces the time to compute a reliability coefficient in other methods and also its application results in a more conservative estimate of reliability. A reliability coefficient of 0.7 was obtained which proved that the instrument was reliable and implied that the items correlated

highly among themselves hence; there was consistency among the items measuring the concept of interest.

3.9 Scoring of questionnaire

The questionnaire was divided into four sections numbered A to D. Section A of the questionnaire dealt with the respondents' bio data which mainly consisted of closed ended questions. The section mainly described the respondents in terms of their characteristics. Section B of the questionnaire dealt with the main purpose of the study on Attitudes towards Agriculture. This section consisted of a five point likert-type scale in which the respondents were required to respond to given statements as Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D) and Strongly Disagree (SD).

Each of the items in this section had the five alternatives from which the respondents were asked to tick against only one. Some of the items were stated as if to imply positive or favorable responses while others were presented as if to imply negative or unfavorable responses. For purposes of analysis, numbers were assigned to the responses as follows; 1=SA; 2=A; 3=U; 4=D; and 5=SD for negative statements while 5=SA; 4=A; 3=U; 2=D; and 1=SD for positive statements.

Frequency counts of behavior for all the observed teachers and students from the questionnaire were tallied and expressed as percentages of the total expressed. On the teachers' questionnaire, a total of 15 statements were positively stated while 14 statements were negatively stated. On the students' questionnaire, a total of 21 statements were stated positively while 12 statements were stated negatively.

Section C of the questionnaire required the respondents to give their views or comment about Agriculture. Three sets of statements were provided from which to pick favorable choice of their own. Opinions expressed in this section were not subjected to statistical tests but rather have been analyzed and presented in discussion form.

The last section of the questionnaire dealt with the challenges faced by teachers while implementing the Agriculture curriculum. The section consisted of 10 questions of a five point likert-type scale stated negatively. Scoring was done just as in the case with the section B of the questionnaire.

3.10 Methods of Data Analysis and Presentations

The data was analyzed both descriptively and inferentially. Descriptive statistics used were frequency tables and percentages while inferential statistic used was Chi Square performed at 0.05% level of significance. Further the data was analyzed using the Statistical Package for the Social Sciences Programme (SPSS) by statistical analyst. The results of the analysis were presented and used to answer the main question of the study.

3.11 Chapter Summary

The chapter highlighted the design, location of the study, research population, sampling procedures, sample size, instruments and data analysis procedures. The design selected was a cross sectional survey design. The study location was Baringo North District and the sample size was 222 respondents. Questionnaire was the main instrument for data collection while data analysis utilized both descriptive and inferential statistics. Dependent variable was the attitude towards Agriculture while

the independent variables were the sex, age, academic qualification, teaching experience, training obtained, type of school, location of school and size of school land.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents the results of both the descriptive and inferential statistical analysis of the data. The data collected using the instruments was analyzed and a summary of analysis presented in this chapter. Interpretation of analyzed data was also discussed in the chapter. The chapter is structured to cover the introduction, background characteristics, attitudes towards Agriculture, comments on Agriculture, challenges faced in the implementation of Agriculture curriculum and finally a discussion of findings.

The objectives that guided this study included: to find out the relationship, if any, between sex of teachers and students and their attitudes towards Agriculture; to find out the relationship between students' age and their attitudes towards Agriculture; to find out whether the teachers' academic qualification influenced their attitudes towards Agriculture; to establish the influence of the location of school on the teachers' and students' attitudes towards Agriculture, to find out the relationship between the school land size and the attitudes of teachers and students towards Agriculture and to establish the relationship between the teaching experience of teachers and their attitudes towards Agriculture. A combination of both descriptive and inferential statistics was used to present data.

Various hypotheses were tested on the relationships between the independent and dependent variables. A Chi Square (χ^2) test was performed at 0.05 level of

significance at varying degrees of freedom as generated by the various contingency tables prepared.

The researcher utilized the formula for Chi-Square (χ^2)

$$(\chi^2) = \sum \frac{(fo-fe)^2}{fe}$$

Where χ^2 = Chi-Square

$\sum$ = Summation

fo = Observed frequencies

fe= Expected frequencies

The calculated values of χ^2 were compared with the critical values (table values) each at 0.05 level of significance and the results of comparison were used to make a decision on the hypothesis on whether to reject or accept. Rejection of hypothesis implied going against the null hypothesis while acceptance implied that the stated null hypothesis was true. Interpretation was made based on the findings obtained and conclusions were made based on the decision made on the hypothesis. First, the objective investigation was stated followed by the statement of the hypothesis and finally a brief presentation of results and interpretation of the findings were made based on the decision made on the hypothesis.

In order to present the results of the hypotheses, contingency tables of frequency counts were worked out so as to calculate the Chi-square values. The total responses for each category of attitude scales were recorded. These were used to obtain the expected and the observed values in order to work out the Chi- square values. The objectives were restated followed by the statement of hypothesis. In order to work out hypothesis testing on the teachers, frequencies were converted into percentages since the expected frequencies were less than 5 and could lead to misleading results.

4.2 Background characteristic of the respondents.

The purpose of this section was to obtain information on the background characteristics of both teachers and students of secondary schools in Baringo North District. The section is thus presented in two levels; first the teachers followed by the students. Descriptive statistics are presented followed by the results of hypothesis testing on the variables that employed the chi-square test.

4.2.1 Teachers

The respondents were required to provide information on sex, teaching experience, academic qualification, current position, training period, type of school and location of the school and size of school land. The information was useful in providing information on the nature of the respondents in the study and also for testing the hypothesis on this variable.

a) Teachers' sex

The questionnaire was administered to 12 teachers in the sample schools of which 7 (58.3%) were male while 5 (41.7%) were female. Table 4.1 shows the sex distribution of teachers in the sampled schools.

Table 4.1: Sex of the teachers

Sex	**Frequency**	**Percentages**
Male	7	58.3
Female	5	41.7
Total	**12**	**100**

Objective 1 was seeking to find out the relationship, if any, between sex and the attitudes of teachers and students towards Agriculture. Hypothesis one attempted to answer this objective. The hypothesis under this objective was stated as;

Ho_1: there is no significant relationship between sex of teachers and their attitude towards Agriculture.

Contingency table was worked out in order to test the hypothesis. Table 4.2 shows the contingency table for teachers' sex and their attitudes towards Agriculture

Table 4.2: Contingency table for Teachers' Sex and their Attitudes towards Agriculture

	Attitude			
Sex	**Positive**	**Negative**	**Neutral**	**Total**
Male	4	2	1	7
Female	3	2	0	5
Total	**7**	**4**	**1**	**12**

The critical values of χ^2 at 0.05 level of significance at degree of freedom 2 equal to 5.99 while the results of χ^2 calculations equals to 3.77 implying that the χ^2 calculated (3.77) is less than the critical value of χ^2 (5.99) hence: accept the Null (Ho) hypothesis and a conclusion was made that there is no significant relationship between the sex (male and female) of teachers and attitude towards Agriculture.

b) Teachers' Academic Qualification

Results of this study showed that all the teachers in the study were professionally trained and qualified to teach with 6 (50%) being diploma holders, 3 (25.0%) holding Bachelors degree in Education, 1 (8.3%) holding Masters Degree while 2 (16.7%) having other qualifications such as PhD Degree or currently undertaking similar programme. Table 4.3 shows a summary of the academic qualification of teachers in the sampled schools.

Table 4.3: Teachers' Academic Qualification

Academic qualification	**Frequency**	**Percentages**
Diploma	6	50.0
BSC AGED	1	8.3
BED SCIENCE	2	16.7
MED/MSC	1	8.3
OTHERS	2	16.7
TOTAL	**12**	**100**

Objective 3 sought to establish the relationship between the teachers' academic qualification and their attitudes towards Agriculture. The hypothesis was stated as follows:

Ho_3: There is no significant relationship between the teachers' academic qualification and attitudes towards Agriculture.

The contingency table for this hypothesis is shown in table 4.4.

Table 4.4: Contingency table on the Teachers' Academic Qualification and Attitudes towards Agriculture.

	Attitude			
Academic qualification	**Positive**	**Negative**	**Neutral**	**Total**
Diploma	3	2	1	6
Degree	2	1	0	3
Others	2	1	0	3
Total	**7**	**4**	**1**	**12**

The table values were expressed as percentages prior to the chi-square calculations since the frequencies were giving small expected values of below 5. It was therefore convenient to convert into percentages.

The calculated χ^2 value obtained was 10.73 while the critical value of χ^2 at degree of freedoms 4 and 0.05 level of significance was 9.488 implying that the calculated value was greater than the critical value. A decision was thus taken to reject the Null hypothesis (Ho) implying that there is a significant relationship between teachers' academic qualification and the attitudes towards Agriculture with teachers of high academic qualification tending to favor positively agriculture more than teachers of low academic qualification.

c) Teaching experience

Majority 8 (66.7%) of the teachers in the study sample were found to be less experienced in teaching that is below five years, 1 (8.3%) has taught for 6-10 years, 1 (8.3%) taught for 11-15 years and 2 (16.7%) have 16-20 years of teaching experience.

Long period of teaching is advantageous as it enables the teacher to have a good mastery of content. Table 4.5 shows teaching experience of the teachers in the sample study.

Table 4.5: Teaching Experience of Teachers

Teaching experience	**Frequency**	**Percentages**
Below 5 years	8	66.7
6-10years	1	8.3
11-15years	1	8.3
16-20years	2	16.7
Total	**12**	**100**

Objective 6 sought to establish the relationship between the teaching experience of teachers and their attitudes towards Agriculture. A null hypothesis was used to answer this objective which stated that;

Ho_6: There is no significant relationship between the teaching experience of teachers and the attitudes towards Agriculture.

Table 4.6 shows the contingency table on the teaching experience of teachers and the attitudes towards Agriculture.

Table 4.6: Contingency table on the Teaching Experience of Teachers and the Attitudes towards Agriculture.

	Attitude			
Teaching experience	**Positive**	**Negative**	**Neutral**	**Total**
0-5 years	4	3	1	8
6-10 years	1	0	0	1
Over 11 years	2	1	0	3
Total	**7**	**4**	**1**	**12**

However the frequencies were converted into percentages for easy working of chi-square. A χ^2 calculation resulted in a value of 4.39 against a critical value of χ^2 of 9.488 performed at 0.05 level of significance and at 4 degrees of freedom. The calculated value (4.39) of χ^2 was found to be less(<) than the critical value of χ^2 (9.488) thus a decision was made to accept the Null hypothesis and say there is no significant relationship between the teaching experience of teachers and their attitudes towards Agriculture. Hence, teaching experience does not influence the teachers' attitudes towards Agriculture.

d) Current position of teachers

The administrative position of teachers in the sample schools was established and the results reflected upon. The results indicated that 3 (25.0%) were either head teachers or deputy head teachers, 3 (25.0%) were either heads of departments or senior teachers while 5 (41.7%) were assistant teachers. The position held by a teacher in a

school was necessary to establish its influence on attitudes towards Agriculture. Table 4.7 summarizes the results of findings on teachers' responsibility position.

Table 4.7: Teachers' Current Position

Current position	**Frequency**	**Percentages**
Head teacher	2	16.7
D/head teacher	1	8.3
Head of department	2	16.7
Senior teacher	2	16.7
Assistant teacher	5	41.7
Total	**12**	**100**

e) Teachers' current Grade

Teachers in the sampled schools were also required to state their highest professional qualification in terms of their present grade. The results of the analysis revealed that 9 (75.0%) held graduate teacher 1 grades, 2 (16.7%) were approved teachers while 1 (8.3%) were senior graduate teachers. The results therefore indicated that all the teachers in the sample study were professionally qualified. Table 4.8 gives a summary of the results of the findings.

Table 4.8: Teachers' Current Grade

Current Grade of teachers	**Frequency**	**Percentages**
Graduate teacher 1 (GTI)	9	75.0
Approved teacher (ATS)	2	16.7
Senior graduate teacher 1(SGTI)	1	8.3
Total	**12**	**100**

f) Training of teachers

Teachers in the sample schools were asked to state when they were trained. This was related to the experience in teaching. The results of the findings revealed that 2 (16.7%) were trained between 1985 and 1990, 2 (16.7%) were trained between 1996 and 2000, 6 (50.0%) trained between 2001 and 2005 while 2 (16.7%) trained between 2006 and 2009. It is thus clear that majority of the teachers in the sampled schools were young teachers trained in the recent years, hence less experienced as earlier revealed by the study findings. Table 4.9 summarizes the results of this variable.

Table 4.9: Training Period of Teachers

Training period	Frequency	Percentages
1985-1990	2	16.7
1996-2000	2	16.7
2001-2005	6	50.0
2006-2009	2	16.7
Total	**12**	**100**

g) Type of school

Teachers in the sample schools were asked to state the type of schools they were teaching. 8 (66.7%) taught in mixed schools, 2 (16.7%) taught in girls schools while 2 (16.7%) taught in boys secondary schools. All the categories of the schools were represented in the study. Table 4.10 gives the results of the findings of the study.

Table 4.10: Type of School

Type of school	Frequency	Percentages
Mixed	8	66.7
Girls	2	16.7
Boys	2	16.7
Total	**12**	**100**

h) Location of the school

The geographical location of school was deemed necessary in this study to establish its influence on attitudes towards Agriculture. The results revealed that 5 (41.7%) of the teacher respondents taught in rural schools while 7 (58.3%) taught in urban schools. Table 4.11 presents the results of the findings.

Table 4.11: Location of school

Location of school	**Frequency**	**Percentages**
Rural	5	41.7
Urban	7	58.3
Total	**12**	**100**

Objective 4 endeavored to establish the relationship between the location of a school and the attitudes of teachers and students towards Agriculture. To address this objective effectively, the following hypothesis was formulated;

Ho_4: There is no significant relationship between the physical location of a school and the attitude of teachers and students towards Agriculture.

The contingency table was worked out and it is shown in table 4.12

Table 4.12: Contingency table of the Physical Location of a School and the Attitude of Teachers and Students towards Agriculture.

Attitude

Location of the school	**Positive**	**Negative**	**Neutral**	**Total**
Rural	3	2	0	5
Urban	5	2	0	7
Total	**8**	**4**	**0**	**12**

The table values were expressed as percentages to enable the expected frequencies to rise beyond 5. The test was performed on both the teachers and students. Results of the teachers revealed the χ^2 calculated value as 2.25 while critical value of χ^2 at 2 degrees of freedom and at 0.05 level of significance was 5.99 implying that the χ^2 calculated value (2.25) was less than the critical value of χ^2 (5.99) hence the Null hypothesis (Ho) was accepted and it was concluded that there is no significant relationship between the location of a school (rural or urban) and the teachers attitudes towards Agriculture.

Similarly, the students' results on hypothesis testing regarding the location of the school indicated that the χ^2 value calculated was 2.87 against the critical value of 5.99 performed at 0.05 level of significance and at 2 degrees of freedom. The results indicated that the calculated 2.87 was less than the critical value (5.99) hence a decision was taken to accept the Null hypothesis and a conclusion was drawn that indeed there is no significant relationship between the location of a school and the

students' attitude towards Agriculture. Therefore, both the teachers and students attitude are not influenced by the location of the school.

i) Size of the school land

The size of the school farm deemed necessary for investigation to establish its influence on attitudes towards Agriculture among secondary school teachers. The findings revealed that 7 (58.3%) of the teacher respondents said their schools had below 5 acres while 5 (41.7%) said their schools had 6 acres and above. Table 4.13 summarizes the finding on the variable.

Table 4.13: Size of the School Farm

Size of the school farm	**Frequency**	**Percentages**
Below 5 acres	7	58.3
Above 6 acres	5	41.7
Total	**12**	**100**

Objective 5 attempted to find out the relationship between the school land size and the attitudes of teachers towards Agriculture. To achieve this objective, the following hypothesis guided the study:

Ho_5: There is no significant relationship between the school farm size and attitudes of teachers towards Agriculture.

The frequency counts were first expressed as percentages prior to the Chi- square calculation. Table 4.14 summarizes the results.

Table 4.14: Contingency table of the School Farm Size and Attitudes of Teachers towards Agriculture.

Attitude

School farm size	Positive	Negative	Neutral	Total
0-5 Acres	36	20	2	58
6 and above	27	12	3	42
Total	**63**	**32**	**5**	**100**

The χ^2 critical values at 2 degrees of freedom and 0.05 level of significance was found to be 5.99 while the χ^2 calculated was 1.00.Therefore χ^2 calculated (1.00) was found to be less than the critical value (5.99) prompting the researcher to accept the Null hypothesis that there is no significant relationship between the school farm size and the teacher's attitudes towards Agriculture. The school land size does not influence the teachers' attitudes towards Agriculture.

The results of the study revealed that majority of the teachers 8 (66.7%) had teaching experience of less than 5 years while the rest 4 (33.3%) had over 6 years teaching experience. This implies that majority of the teachers who responded to the questionnaire were young in the profession. However, the combination of both the young and the old experienced teachers was crucial to the study to provide information on the views on attitudes towards Agriculture from both side of the young and the experienced teachers.

Regarding the academic qualification, 5 (41.7%) said they were diploma holders, 3 (25.0%) were holders of first degree, 1 (8.3%) was a holder of masters degree while 2 (16.7%) were under others who include those with either PhD degrees or undergoing

other academic programmes at various levels of masters or PhDs. It was clearly evident therefore that majority of the teachers 7 (58.3%) were graduate teachers compared to 5 (41.7%) of the diploma holders. This was further elaborated by the qualification of teachers which indicated that majority 10 (83.3%) had both graduate and senior graduate teacher 1 grades with only 2 (16.7%) having approved teachers (ATs) grade. The results revealed therefore that teachers were all qualified and experienced to teach in secondary schools.

The study findings further revealed that 2 (16.7%) of the teachers were head teachers, 1 (8.3%) was a deputy head teacher 2 (16.7%) were heads of departments, 2 (16.7%) were senior teachers while the majority 5 (41.7%) were assistant teachers. This is in agreement with the information on teaching experience that indicated that the majority 8 (66.7%) were having teaching experience of below 5years hence majority were thus assistant teachers. This could be interpreted to mean that all the experienced teachers were in responsibility positions as either head or deputy head teachers of the schools, heads of departments or senior teachers in their schools.

The period of training also indicated the experience of the teachers. The results showed that the majority of the teachers 10 (83.3%) were trained between 2005 and 1985 indicating that they are experienced enough to teach while only 2 (16.7%) were trained between 2006 and 2009. This information was to be used to show the relationship between the experience and the attitude towards Agriculture**.**

Regarding the type of school and the physical location of the schools, 8 (66.7%) of the teachers were from mixed schools, 2 (16.7%) were from girls schools while 2 (16.7%) were from boys schools. In addition, 5 (41.7%) of the teachers were from rural schools while 7 (58.3%) were from urban schools. The information on type of

school and physical location of the school were important for revealing the extent to which the type of school and the location of the school were influencing the attitude of the teachers towards Agriculture.

On the basis of the size of school farm, 7 (58.3%) said their schools had below 5 acres while 5 (41.7%) said their schools had over 6 acres of land. It appears that majority of the schools had small land size.

4.2.2 Students

The study collected data from 210 student respondents. Information sought by the questionnaire included sex, age, class, type of school and location of the school.

a) Students' sex

Male students who participated in the study were 85 (40.5%) while the female students who participated in the study were 125 (59.5%).Table 4.15 gives the results of the study.

Table 4.15: Sex of students

Sex	**Frequency**	**Percentages**
Male	85	40.5
Female	125	59.5
Total	**210**	**100**

b) Age of students

Students were required to state their ages from the variety of choices given. The results revealed that 79 (37.1%) of the students aged between 10-15 years, 130

(61.9%) aged between 16-20 years while only 1 (1.0%) aged 21-25 years. Table 4.16 summarizes the results on the age.

Table 4.16: Age of Students

Age	**Frequency**	**Percentages**
10-15	79	37.1
16-20	130	61.9
21-25	1	1.0
Total	**210**	**100**

Objective 2 was seeking to establish the relationship between the ages of students and their attitudes towards Agriculture. Hypothesis 2 sought to answer this objective. The hypothesis was stated as follows:

Ho_2: There is no significant relationship between the ages of students and their attitudes towards Agriculture.

Contingency table was worked out in order to calculate the chi-square value. Table 4.17 shows the contingency table of this variable.

Table 4.17: Contingency table showing Age of Students and Attitudes towards Agriculture

Attitude

Age	**Positive**	**Negative**	**Neutral**	**Total**
10-15 years	25	51	3	79
16-20 years	33	80	17	130
21 and above Years	0	1	0	1
Total	**58**	**132**	**20**	**210**

The results gave a Chi-square value of 5.82 against a critical value of 9.488 at 4 degrees of freedom worked at 0.05 level of significance. The results thus indicated that the Chi- square values was less than the critical value, hence a decision was taken to accept the null hypothesis. This implied that there is no significant relationship between the age of students and the attitudes towards Agriculture.

c) Type of school

Like the teachers, students were asked to state the type of school they schooled in. All the various categories of the schools were represented in the study. The results revealed that 86 (41.0%) were in mixed secondary schools, 77 (36.7%) said they schooled in girls schools while 47 (22.3%) said they schooled in boys secondary schools. The results of the findings are summarized in table 4.18

Table 4.18: Category of School

Type of school	**Frequency**	**Percentages**
Mixed	86	41.0
Girls	77	36.7
Boys	47	22.3
Total	**210**	**100**

d) Class/form

Information on class was sought from students. The findings revealed that 73 (34.8%) were in form one class, 62 (29.5%) were in form two class, 55 (26.2%) were in form three class while 20 (9.5%) were in form four class. All the classes in secondary schools were thus represented. The results are summarized in table 4.19

Table 4.19: Class of students

Class	**Frequency**	**Percentages**
Form 1	73	34.8
Form 2	62	29.5
Form 3	55	26.2
Form 4	20	9.5
Total	**210**	**100**

e) Location of the school

The students were further asked to state the location of their school. 108 (51.4%) said they were in rural schools, 100 (47.6%) said they were schooling in urban schools while 2 (1.0%) did not state the location of their schools. The results are summarized in table 4.20. Again, this variable will be useful in the hypothesis testing.

Table 4.20: Location of the School

Location of the school	**Frequency**	**Percentages**
Rural	108	51.4
Urban	100	47.6
Unstated	2	1.0
Total	**210**	**100**

The results of the study showed that 85 (40.5%) of the student respondents were male while 125 (59.5%) were female. The information on sex was useful in testing the hypothesis later in the chapter. On age 79 (37.1%) were between 10-15years; 130 (61.9%) were aged 16-20 years while 1 (1.0%) were aged 21-25years. This implied that majority of the student respondents aged 16-20 years were preferably the senior classes with the junior classes having 10-15years 78 (37.1%). A few 1 (1.0%) who aged 21-25 years could be those who repeated in primary and secondary schools for long time.

With regard to the type of school, 86 (41.0%) were from mixed school, 77 (36.7%) were from girls school while 47 (22.4%) were from boys school. Therefore all the 3 categories of schools were represented. Respondents from mixed schools were also more because of the greater number of schools (8 schools) to participate in the study owing to their number in the district.

Form 1 respondents were 73 (34.8%) form 2 were 62 (29.5%), form 3 were 55 (26.2%) while form 4 were 20 (9.5%). All the classes were therefore represented. On the basis of the physical location of the school, 108 (51.4%) were from rural schools, 100 (47.6%) were from urban schools while 2 (1.0%) did not state their location of their school. The findings showed that the respondents were drawn from both rural and urban schools almost on an equal basis.

4.3 Attitudes towards Agriculture

This section intended to establish the attitudes of students and teachers towards Agriculture. A five point Likert-type of scale was used to measure attitude in which statements were provided to the respondents from which they had to choose that which apply depending on the opinion of each respondent. A total of 32 statements were provided to the students which were both stated as if to imply positive attitudes and also negative attitudes towards Agriculture. A total of 29 similar statements were provided to the teacher respondents.

Where the statement was positively stated a Strongly Agree response earned 5 points, Agree earned 4 points, Uncertain earned 3 points Disagree earned 2 points and Strongly Disagree earned 1 point. A vice versa was true for a negatively stated item with the highest 5 points being Strongly Disagreed while Strongly Agree earned 1

point. Positive statements were assigned the symbol P while the negative statements were assigned the symbol N. Frequency counts of responses from the respondents were recorded and presented in form of frequency tables. Table 4.21 a and b presents a summary of results of frequency counts of responses from teachers' questionnaire.

4.3.1 Frequency counts of Teachers' Responses

Teachers were provided with both the positive and the negative statements. A total of 14 negative and 15 positive statements were provided to teachers. The results of the frequency counts on the negative statements are presented in table 4.21 a)

Table 4.21 a): Summary of Frequency counts of responses from Teacher Questionnaire for Negative statements

Statement code	SA	A	U	D	SD	TOTAL
N1	2	3	2	3	2	12
N2	0	0	0	2	10	12
N3	2	2	0	5	3	12
N4	5	5	1	0	1	12
N5	4	4	1	2	1	12
N6	9	1	1	1	0	12
N7	6	4	0	2	0	12
N8	10	2	0	0	0	12
N9	5	5	0	1	1	12
N10	0	4	1	3	4	12
N11	3	6	1	2	0	12
N12	6	4	1	0	1	12
N13	0	6	1	2	3	12
N14	5	4	0	1	2	12

The results of the frequency counts on the positive statements of the teachers' questionnaire are presented in table 4.21 b)

Table 4.21 b): Summary of Frequency counts of responses from Teacher questionnaire for Positive statements

Statement code	SA	A	U	D	SD	TOTAL
P1	1	9	0	1	1	12
P2	5	5	1	0	1	12
P3	7	5	0	0	0	12
P4	2	3	2	3	2	12
P5	5	5	0	1	1	12
P5	8	1	0	0	3	12
P7	1	1	0	8	2	12
P8	6	5	0	1	0	12
P9	0	3	2	5	2	12
P10	4	3	1	2	2	12
P11	2	2	1	5	2	12
P12	0	2	2	6	2	12
P13	0	5	3	4	0	12
P14	0	1	0	10	1	12
P15	1	2	1	5	3	12

Teachers seem to agree that the subject matter is appropriate 10 (83.3%) and further acknowledge that agriculture leads to increased agricultural productivity. 7 (58.3%) tend to believe that the training they received in college was sufficient enough not to require an in-service training. 10 (83.4%) of the teachers agreed that Agriculture supplies food to schools and that 9 (75%) agreed that Agriculture knowledge was vital

for economic development. However, 8 (66.6%) seemed to suggest that Agriculture syllabus was too demanding for students while 10 (83.4%) also said too much projects were planned for Agriculture students. This was seen by teachers as impacting negatively on the students' attitude towards Agriculture.

To support this, 7 (58.3%) said Agriculture was an expensive subject while 9 (75%) said digging in shamba was sometimes used as punishment. 10 (83.3%) suggested that teaching of Agriculture was a waste of time while 9 (75%) said it was not necessary to send children to school to learn to use their hands like engaging in Agricultural activities. The majority 11 (91.6%) further said working in the farm was exciting and enjoyable. Although teachers displayed positive attitudes towards the subject, there were certain suggestions they seem to be communicating to schools in order to promote the subject. Some include the discouragement of the use of Agriculture (shamba) as punishments and reducing the workload for both teachers and students.

4.3.2 Frequency counts of responses on the Students' questionnaire

Students were equally provided with both the positive and the negative statements. The results of the frequency counts on the negative statements are presented in table 4.22 a)

Table 4.22 a): Frequency counts of the negative statements from students' questionnaire

Statement code	SA	A	U	D	SD	TOTAL
N1	118	52	11	12	17	210
N2	41	58	26	51	24	210
N3	100	56	17	18	18	210
N4	104	47	17	18	24	210
N5	132	49	6	9	14	210
N6	112	64	1	13	20	210
N7	13	16	6	68	106	210
N8	36	70	14	47	42	210
N9	37	47	17	58	51	210
N10	53	53	18	43	43	210
N11	24	60	16	65	45	210
N12	11	13	8	44	135	210

The results of the frequency counts on the positive statements of the teachers' questionnaire are presented in table 4.22 b)

Table 4.22 b): Frequency counts of Positive Statements from Students' Questionnaire

Statement code	SA	A	U	D	SD	TOTAL
P1	1	3	8	83	115	210
P2	2	1	3	79	124	210
P3	14	38	16	72	70	210
P4	39	37	14	65	55	210
P5	5	8	4	62	131	210
P6	9	3	2	69	126	210
P7	14	10	6	6	120	210
P8	118	52	11	12	17	210
P9	9	16	8	56	121	210
P10	35	35	10	53	77	210
P11	12	14	6	72	108	210
P12	19	41	21	65	64	210
P13	8	21	3	69	109	210
P14	7	18	18	82	85	210
P15	26	63	19	58	44	210
P16	32	60	4	54	60	210
P17	24	49	19	62	55	210
P18	72	66	19	33	19	210
P19	58	49	17	48	48	210
P20	32	51	21	59	47	210

Majority of the students 198 (94.3%) seemed to disagree that agriculture is an important subject with 203 (96.6%) suggested that Agriculture does not contribute to economic development. Most 142 (67.6%) and 120 (57.2%) neither support Agriculture to be taught in all education institutions nor to be taught to all students respectively. Majority 193 (91.9%) further objected the idea that learning Agriculture promotes students career while majority 180 (85.7%) further said Agriculture did not

develop skills for self reliance. However, 131 (62.3%) agreed that the products from students projects lowered food expenses in schools, hence suggesting that Agriculture was very important in schools and for National Development.

When asked to state their position on whether Agriculture knowledge contributed positively to improved production, 177 (84.3%) objected it. Majority 170 (81.0%) were of the opinion that Agriculture be examined in KCSE while 130 (61.9%) suggested that Agriculture should not be made a compulsory subject. 178 (84.8%) seemed to disagree that Agriculture prepares students for further studies while at the same time 129 (61.5%) disagreed that Agriculture leads to rural development.

Majority 178 (84.0%) said Agriculture was not a profitable occupation while another majority 99 (47.1%) said Kenya did not need many people with technical training. In fact 167 (79.5%) said the marks for Agriculture projects were not even useful in KCSE exams. Majority of the students 114 (54.3%) agreed that they do not have sufficient resources (equipment) for Agriculture in their schools.

The results also indicate that 156 (74.3%) of the students said Agricultural practices were against the taboos of their community, 151 (71.9%) preferred maths and science to Agriculture suggesting that instead of buying Agricultural equipments/resources, more books for maths and sciences should be bought. Majority of the student respondents 181 (86.2%) believe that Agriculture should be taught in village polytechnics, 117 (55.7%) also said the time allocated for Agriculture should not be increased as what is allocated currently is sufficient, 176 (83.8%) of the students said Agriculture should be taught in rural schools while 174 (82.9%) said Agriculture

knowledge gained is not useful for self reliance. Majority 106 (50.4%) said what they learnt in their farm was more practical than what they learnt in school.

When asked to compare Maths and Agriculture, 138 (65.7%) preferred Agriculture to Maths. This may be because of the difficult arithmetic involved in mathematics. 109 (51.9%) seemed to suggest that they gain a lot of practical skills in school and therefore the school leavers fail to get jobs not because they have no practical skills. Majority of students 106 (50.4%) seemed to confirm what the teachers agreed that agriculture was used as punishment in schools. Although majority 97 (46.2%) seemed to agree that Agriculture makes them admire rural life, equally 96 (45.0%) seemed to disagree saying it does not make them admire rural life.

Majority 110 (52.4%) disagreed on the statement that agriculture was an easy subject. They seemed to be in agreement with the teachers' suggestions that Agriculture was not an easy subject and therefore anyone may not teach the subject but rather a professional was necessary. Majority 106 (50.5%) disagreed with the statement that working in the farm was exciting and enjoyable. Also 178 (84.8%) said marks in the practical projects should not be included in the final grade. This is in agreement with the earlier statement that the marks for Agriculture project were not useful at all to the students.

Finally owing to the demand for the white collar jobs, overwhelming majority 173 (82.4%) of the students' respondents said that farming skills were not useful to them since they required white collar jobs. The position of the students of colonial period and the post colonial era thus remains the same with the desire for a white collar job as opposed to the "dirty" blue collar jobs.

4.4 Mean scores for the frequency counts from the statements

Mean scores for each statement was calculated together with the overall mean score each for the entire negative and the positive statements on the five point Likert scale. The mean scores represented the level of favorable feelings or unfavorable feelings for the respondents toward Agriculture. The mean scores range 3-5 for favorable feelings and 1-3 for unfavorable feelings for positive statements. For negative statements, the mean range was 3-5 for favorable feelings or positive attitudes towards Agriculture. The mean scores were used to decide on the attitudes of the respondents towards Agriculture. Table 4.23 shows the mean scores and the overall means scores for positive statement on the five points Likert scale.

4.4.1 Mean scores from the teachers' questionnaire

The mean scores from individual statements were calculated from the frequency counts of responses from each category of the respondents. For negative statements the total frequency counts of each statement are presented in table 4.23(a).

Table 4.23 a): Summary of Frequency Counts of responses from Teacher Questionnaire for Negative Statements

Statement code	SA (1)	A (2)	U (3)	D (4)	SD (5)	TOTAL
N1	2	6	6	12	10	36
N2	0	0	0	8	50	58
N3	2	6	0	20	15	42
N4	5	10	3	0	5	23
N5	4	8	3	8	5	28
N6	9	2	3	4	0	18
N7	6	12	0	8	0	22
N8	10	20	0	0	0	14
N9	5	10	0	4	5	24
N10	0	8	3	12	20	43
N11	3	12	3	8	0	26
N12	6	8	3	0	5	22
N13	0	12	3	8	15	38
N14	5	8	0	4	10	27

The mean scores were then calculated for each statement and the overall means of each of the negative statements were obtained. Tables 4.23b) summarizes the results of the findings.

Table 4.23 b): Mean Scores for Negative Statements of the Teachers' Questionnaire

Statement code	**N1**	**N2**	**N3**	**N4**	**N5**	**N6**	**N7**	**N8**	**N9**	**N10**	**N11**	**N12**	**N13**	**N14**
Mean	3.0	4.8	3.4	1.9	2.3	1.5	1.8	1.2	2.0	3.6	2.2	1.8	3.2	2.3
Overall Mean	2.5													

The results revealed that except for statements N1, N2, N3 and N10, all the negative yielded an individual mean score of less than 3.0 with an average mean score of 2.5 implying that teachers' feelings were within the favorable range of means of between 1 to 3 hence teachers have positive attitudes towards Agriculture since they disagreed with the negative statements.

For positive statements of the teachers' questionnaire the total frequency counts are presented in table 4.24 a).

Table 4.24 a): Frequency counts for Positive Statements on the Teacher Questionnaire

Statement code	SA (5)	A (4)	U (3)	D (2)	SD (1)	TOTAL
P1	5	36	0	2	1	44
P2	25	20	3	0	1	49
P3	35	20	0	0	0	55
P4	10	12	6	6	2	36
P5	25	20	0	2	1	48
P5	40	4	0	0	3	47
P7	5	4	0	16	2	27
P8	30	20	0	2	0	52
P9	0	12	6	10	2	30
P10	20	12	3	4	2	41
P11	10	8	3	10	2	33
P12	0	8	6	12	2	28
P13	0	20	9	8	0	37
P14	0	4	0	20	1	26
P15	5	8	3	10	3	29

The mean scores for positive statements are presented in table 4.24 b)

Table 4.24 b): Mean Scores for Positive statements on the Teachers' Questionnaire

Positive statement	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15
Mean	3.7	4.1	4.6	3.0	4.0	3.9	2.3	4.3	2.5	3.4	2.8	2.3	3.1	2.2	2.4
Overall mean	3.24														

Except for the positive statement P7, P9, P11, P12, P14 and P15, the rest of the statements yielded on individual means of over 3.0 with an overall mean of 3.24.

From Table 4.24 a) and Table 4.24 b) the mean scores for negative statements ranged from between 1 to ≤ 3 while all positive statements were in the range of between 3 to ≤ 5.This means that teachers' feelings towards the statements were in the favorable range, as such, teachers had a positive attitudes towards Agriculture.

4.4.2 Mean Scores for Students' Responses

The mean scores for the statements on the students' questionnaire were obtained from the totals of the frequency counts of both the negative and the positive statements. Table 4.25 a) summarizes the results of the negative statements.

Table 4.25 a): Frequency counts of the Negative Statements from Students' Questionnaire

Statement code	SA (f)	A (f)	U (f)	D (f)	SD (f)	TOTAL
N1	590	208	33	24	17	878
N2	205	232	78	102	24	641
N3	500	224	51	36	18	829
N4	520	188	51	36	24	819
N5	660	196	18	18	14	906
N6	560	256	3	26	20	865
N7	60	64	18	136	106	384
N8	180	280	42	94	42	638
N9	185	188	51	116	51	591
N10	280	212	54	86	43	675
N11	120	240	48	130	45	583
N12	55	52	24	88	135	354

The mean scores were then calculated for each of the negative statements and the overall mean was then obtain from a summation of individual means. Table 4.25 b) presents the results of the findings.

Table 4.25 b): Means Score for Frequency counts on Students' Negative Statement in the Questionnaire.

Statement Code	**N1**	**N2**	**N3**	**N4**	**N5**	**N6**	**N7**	**N8**	**N9**	**N10**	**N11**	**N12**
Mean	4.2	3.2	4.2	3.7	4.3	4.1	1.8	3.0	2.8	3.2	2.8	1.7
Overall mean	3.22											

From the table 4.25 b) it is evident that the students' responses were not with the favorable responses on negative statements. Individual means were beyond 3.0 except for statements N7 N9 N11 and N12 implying that students favored or agreed the way the statements were stated negatively. This implied that students had negative attitudes towards Agriculture.

Similarly the frequency counts from the students positive statements are recorded in table 4.26 a).

Table 4.26 a): Frequency counts of positive statements from students' questionnaire

Statement code	SA (f)	A (f)	U (f)	D (f)	SD (f)	TOTAL
P1	1	3	8	83	115	314
P2	2	1	3	79	124	309
P3	14	38	16	72	70	388
P4	39	37	14	65	55	578
P5	5	8	4	62	131	312
P6	9	3	2	69	126	360
P7	14	10	6	6	120	384
P8	118	52	11	12	17	1136
P9	9	16	8	56	121	347
P10	35	35	10	53	77	528
P11	12	14	6	72	108	390
P12	19	41	21	65	64	428
P13	8	21	3	69	109	456
P14	7	18	18	82	85	478
P15	26	63	19	58	44	867
P16	32	60	4	54	60	820
P17	24	49	19	62	55	452
P18	72	66	19	33	19	790
P19	58	49	17	48	48	717
P20	32	51	21	59	47	516

The mean scores for each individual positive statement were calculated and the overall mean was obtained from a summation of the individual means. Table 4.26 b) gives the results of the findings.

Table 4.26 b): Mean Scores for Frequency Counts on the Students' Positive Statements in the Questionnaire.

Statement Code	**P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 P13 P14 P15 P16 P17 P18 P19 P20**
Mean	1.5 1.5 2.3 2.7 1.5 1.6 1.8 4.2 1.7 2.5 1.8 2.5 1.8 1.9 2.9 2.8 2.3 3.6 3.2 2.8
Overall mean	2.5

From the table 4.26 b), the statement means were all below 3.0 except for student P8 and P18 and P19. The overall mean was 2.4 which was below the favorable range of 3 to 5 implying that students' feelings towards positively statements were negative hence students have negative attitudes towards Agriculture.

It is evident therefore from the table on students' mean scores for both the positive and negative statements that, students were agreeing to the negative statements while disagreeing with the positive statements. As such, students displayed negative attitudes towards Agriculture since their mean scores were not within the favorable ranges of 1-3 for negative statements and 3-5 for positive statement.

4.5 Comments on the teaching and learning of Agriculture

This section was seeking general comments by students and teachers on teaching and learning of Agriculture. Students were first given three open ended questions from which to freely respond followed by three sets of statements regarding Agriculture from which to choose one or reject all and provide necessary comment. Teachers were

given only three sets of statements from which to circle the one(s) which applies with suggestions.

Student respondents suggested reasons why they like Agriculture. The suggestions among others were that Agriculture creates employment directly and indirectly and that Agriculture can be a future career. However, some registered their dislike for Agriculture citing reasons such as;

1. Limited jobs in the ministry of Agriculture
2. Very little money earned in Agriculture jobs
3. Less careers with less job opportunities in Agriculture
4. Agriculture wastes a lot of time for other subjects
5. Agriculture was a very tiring subject with a lot of research.
6. Agriculture is practical subject involving many activities which are not enjoyable.

From the statements, and comments, students seemed to still have the view that Agriculture was a non profitable career because it is associated with “dirty” blue collar jobs. Most of them seemed to have developed attitudes that Agriculture is a “bad” subject which is not useful in the current world. There is need for attitudinal change if the subject has to bring economic transformation that would result in economic growth. 201 (95.71%) of the student respondents chose statement B saying schools should not be used to train factory workers adding that factories should do that, and that schools should only teach Mathematics, Sciences, Languages and Humanities. This shows the level of the intensity on the negative attitudes towards Agriculture. Students thus displayed a negative attitude towards Agriculture.

Teachers were also asked to make comments on teaching and learning Agriculture using guiding statements. The results indicated that the majority 10 (83.3%) chose statement A saying employment is a great problem in our country today saying it is caused by thousands of school leavers who have no relevant skills and that schools should thus do more to equip youth with more skills by making schools agents for training youths to work in factories and that school subjects including Agriculture should enable school leavers to step directly into jobs having been fully and expertly prepared by the school.

Therefore it is evident from the study findings that school leavers are not adequately prepared for the job market outside school are unable to be self reliant owing to inadequate skills offered in schools. Curriculum developers should thus orient the curriculum into a practical curriculum that can lead to self reliance. There is need to emphasize practical curriculum that is examinable at the end of Agriculture course.

4.6 Challenges faced by Agriculture Teachers in Implementing Agriculture Curriculum.

Teachers are the implementers of the curriculum and were therefore asked to give the challenges they face using a guided set of statements. The findings showed that half 6 (50%) indicated that the content in Agriculture syllabus did not contain complex technical issues. However, overwhelming majority 10 (83.3%) indicated that Agriculture had too wide content on topics. On the support by the head teachers, 7 (58.33%) agreed that there was lack of support by school head teachers hence affecting implementation of the curriculum. The support here includes availing resources for effective teaching and general motivation on the Agriculture teachers.

On frequent changes in Agriculture syllabus, 6 (50%) agreed that the changes had negatively affected the implementation of the curriculum while 6 (50%) said it had no effect. On workload on Agriculture teachers, 8 (66.67%) agreed that there was too much workload for Agriculture teacher.

Regarding in-service for Agriculture teachers, 10 (83.33%) agreed that there was a general lack of in service courses for Agriculture teachers hence a challenge in the implementation of Agriculture curriculum. With regard to current research information, all the respondents 12 (100%) agreed that there was lack of current research information which hampered curriculum implementation in Agriculture. On the teachers and students attitude towards Agriculture, the majority 8 (66.67%) agreed that there were poor attitudes towards the subject by teachers and students hence hindering the implementation of Agriculture.

Regarding the teaching resources, overwhelming majority 11 (91.67%) said there was lack of teaching resources for Agriculture resulting in the challenges that teachers of Agriculture were facing while implementing the Agriculture curriculum. This is in line with what the respondents earlier made on the lack support by head teachers in the provision of the teaching resources. Finally, a majority 9 (75%) indicated that agriculture teachers lacked motivation leading the challenges facing implementation of Agriculture curriculum.

The study finding clearly highlighted the various challenges in the implementation of Agriculture curriculum. The current poor performance in KCSE would be as a result of these challenges. The key challenges in order of priority in the implementation of Agriculture curriculum include; lack of current research information, lack of teaching resources for Agriculture, lack of in service courses for Agriculture teachers, too wide

content on topics in agriculture, lack of motivation for Agriculture by teachers and students, too much work load for agriculture teachers, lack of support by principals and frequent changes in Agriculture syllabus.

The key challenges influenced the effective teaching and learning situation which consequently influenced performance in the KCSE exams. There is need to address the key challenges by the relevant personnel at the teachers' level, administrators' level and policy and curriculum development levels in order to effectively implement Agriculture curriculum in secondary school.

4.7. Discussion of Findings

Discussion of findings was based on the main objective of this study which endeavored to establish the attitudes towards Agriculture by teachers and students of secondary schools in Baringo North District.

4.7.1 Present Attitudes of Teachers and Students Towards Agriculture

The findings of the study revealed that teachers' attitudes were positive while those of students were negative towards Agriculture. This in part is in agreement with what Ongeti (1986) found in his study on primary schools that teacher's attitudes were positive towards prevocational subjects like Agriculture. However, the findings of this study contradicted Ongeti (1986) and Onyango (1982) findings on pupils' attitudes towards Agriculture which indicated positive attitudes contrary to this study findings which found that secondary school students had negative attitudes towards Agriculture

Husen and PostleWaite (1994) noted that attitudes are central to the educative process both as ends and means. It therefore implies that the negative attitudes of students

towards agriculture is a setback in the implementation of secondary school Agriculture curriculum since studies by Schibeci (1984) and Khor (1987) have shown that a positive attitude is a requirement if learning has be accomplished. It is paramount therefore that attitudes towards learning Agriculture be oriented positively since failure to implement curriculum is attributed to negative attitudes by students (Saiti, 1999). This study established that, there is a tendency for students to learn Agriculture for the sake of passing KCSE Examination because it is widely believed by many students that Agriculture is easy to pass hence a booster in KCSE mean grade. This observation was also established by Ongeti (1986) when he said there is a tendency to teach in schools for the purpose of examination.

The interpretation here implied that the objective of promoting interest in agriculture and creating awareness and opportunities that exist in Agriculture and related sectors as outlined in the KIE (2002) have not been fully achieved and therefore students choose Agriculture for the sake of passing KCSE Examinations and not as a career.

The attainment of vision 2030 pledge of utilizing Agriculture for economic development can only be possible if attitudes of those in schools who aspire to undertake careers can positively by oriented towards agriculture which is seen to be the engine and driving force in economic development and sustainable food and employment creation as well as a tool for fighting poverty (Republic of Kenya, 2007). The present rates of unemployment, food insecurity and high rates of poverty attest to the lack of positive orientation towards agriculture for sustainable development.

According to Republic of Kenya (1984), schools should be used as avenues for changing students' attitudes towards farming and rural life in general. However, the reality is that little is being done to change students' attitudes towards agriculture.

According to Ongeti (1986) the school community does not show respect for rural values leading to the negative attitudes towards agriculture. Maxwell (1970) further reports that schools have not adequately prepared students for successful careers and a life of informed choices in global agriculture leading to the current economic, food, poverty and unemployment crisis that is being evidenced in Kenya.

The move will go a long way in influencing career choice for students at higher levels of learning and may in future influence the performance of Agriculture sector due to lack of personnel and professionals for the vital sector whose economy relies on. It is therefore necessary that attitudes of students and teachers be positive since the attitudes of people who are engaged in the teaching and learning of any subject are important as they have a direct consequence on the teaching-learning process (Ongeti, 1986).

Evidence of negative attitudes towards Agriculture by secondary school students was also raised by scholars like Ssekamwa (2001) who indicates that time and again, some people have complained that during colonial period Agriculture was given a minor place compared to the academic subjects and that the same trend is perpetuated even in the present time especially among secondary school students. Changing the secondary school students' attitudes towards Agriculture should thus be the main concern currently if the achievement of sustainable development through food security, poverty reduction, creation of employment and improved living standards are to be attained. The development of a positive attitude should thus be an important goal of the school curriculum (Laforgia, 1988). This is because there is a consensus that a positive attitude is a requirement if learning has to be accomplished (Schibeci, 1984; Khor, 1988)

4.7.2 Academic Qualification and Teaching Experience of Teachers

This study found it useful to establish the training that teachers underwent and the academic qualification and teaching experiences of teachers under study. The findings of this study revealed that the teachers of Baringo North district were professionally trained, with high academic qualification most of whom are experienced teachers in the profession. This is in line with Indoshi (1992) that the effectiveness and efficiency in teaching and learning are determined by teacher academic and professional qualification as well as experience of teachers.

Teachers in the sample schools were therefore compliant in terms of training as Republic of Kenya (2005) recommends that the training aspects is widely advocated for effective teaching. Teachers were therefore qualified to teach, with relevant professional training for teaching Agriculture and were thus offering quality teaching. In fact the teachers under study felt that the training they underwent was sufficient and that any additional training could only be by in service courses, for updates of new information and technology.

4.7.3 Discussion on the Results of the Hypotheses Testing

In order to effectively establish the relationships between the independent and the dependent variable of the study, a chi-square (χ^2) test was performed at 0.05 level of significance. The χ^2 results revealed that the teachers' academic qualification, influenced attitudes towards Agriculture. The (χ^2) results of this variables showed that there was a significant relationship with attitudes towards Agriculture with high academic qualification and effective training tend to favor positive attitudes towards Agriculture.

Location of the school (rural or urban setting) was found not to influence teachers' attitudes towards Agriculture. Responsibility position was also found to influence attitudes of teachers towards Agriculture with teachers in administrative positions (head teachers and deputy head teachers) showing negative attitudes while those without responsibility positions having positive attitudes towards Agriculture.

No significant relationship existed between sex of teachers, school farm size and the type of school (whether girls, boys or mixed schools) and the attitudes towards agriculture. It therefore implies that sex (being a male or female) does not influence attitudes of teachers towards agriculture. Also whether a school has small or big school land size has no effect on teachers' attitudes towards Agriculture. Further, the type of school whether single sex or mixed sex school was found not to influence teachers attitudes towards Agriculture.

However, it appears that as teachers get better training and attains high academic qualification, positive attitudes are developed towards Agriculture as it becomes a career and one begins to see a sense in the career as he/she specializes on field of agriculture. No significant relationship was found to exist between teaching experience and the teachers' attitudes towards Agriculture.

Although students' attitudes were found to be negative certain variables were found to influence their attitudes positively. Notably, the class was found to influence their attitudes towards Agriculture. Students of younger ages and in lower classes tend to have positive attitudes towards agriculture compared to those in upper classes who have negative attitudes towards Agriculture. However the results of hypothesis testing on this variable showed no significant relationship. Onyango (1982) however found

that the older pupils in higher classes favored agriculture more than the younger ones in lower classes, a deviation from the findings of study.

Physical location of a school (rural or urban) tends to show no significant relationship with attitudes towards Agriculture. Sex of students was found not to influence attitudes of students towards Agriculture. The findings were contrary to what Onyango (1982) found out in his study on primary schools that students sex influenced learners attitudes where male students appeared to favor Agriculture more than female. The type of school (girls, boy or mixed) was also found not to influence attitudes of students towards Agriculture.

Table 4.27 Summary of the Results of Hypotheses Testing

Hypotheses	**Degrees of freedom**	**Chi-square value**	**Critical Value**	**Decision**
Ho_1: there is no significant relationship between sex of teachers and their Attitude towards Agriculture.	2	3.77	5.99	Accept null hypotheses
Ho_2: There is no significant Relationship between the students' age and their attitudes towards Agriculture.	4	5.82	9.488	Accept null hypothesis
Ho_3: There is no significant Relationship between the teachers' academic qualification and attitudes towards Agriculture.	4	10.73	9.488	Reject null hypothesis
Ho_4: There is no significant relationship between the physical location of a school and the attitude of teachers and students towards Agriculture.	2	2.25	5.99	Accept null hypothesis
Ho_5: There is no significant relationship between the school farm size and attitudes of teachers towards Agriculture.	2	1.00	5.99	Accept null hypothesis
Ho_6: There is no significant relationship between the teaching experience of teachers and the attitudes towards Agriculture.	4	4.39	9.488	Accept null Hypothesis

4.7.4 Challenges in Agriculture Today

Although it was not the mandate of this study to establish the challenges in Agriculture, it was felt prudent to find out the challenges so as to relate to the attitudes of the teachers and students. White collar jobs were preferred amongst students and was felt could only be achieved through the sciences unlike Agriculture which was felt could only lead to blue collar jobs. This was felt a challenge in changing the attitudes of students towards Agriculture.

Numerous challenges were highlighted as facing teachers while implementing Agriculture curriculum. In service courses for teachers was reported to be lacking, yet Brian (1975) says everyone should from time undertake retraining so as to equip themselves with new knowledge or skills that may be needed for implementation of a new programme. New information, practices and technologies in agriculture was felt could be achieved though regular in service courses for teachers. School farms/projects were used by most schools to punish indiscipline students. Again this has had devastating effects on students' interest in Agriculture because of its association with punishments. Ongeti (1986) also found out that schools used school farms to punish pupils which have far reaching effects including the development of negative attitudes towards Agriculture.

Administrative support was reported to be a critical challenge that teachers were facing. Theorists like Oluoch (1982) and Shiundu and Omulando (1992) while supporting Gross et-al (1971) says that the befitting conditions for any implementation requires changing attitudes of people involved when implementing any programme, providing adequate materials, facilities and equipments, training teachers and providing sufficient and continuous administrative support to the

teachers. If teachers are not provided with the necessary teaching/learning resources, then implementation of the curriculum is hampered and this could lead to negative attitudes of teachers towards Agriculture. According to Koros (2008), poor attitudes towards agriculture and lack of administrative support pose great challenges in implementation of TVET subjects.

Other challenges highlighted in the study include wider content comprising numerous topics which according to this study could lead to boredom on students leading to negative attitudes towards Agriculture. Frequent changes in syllabus were also found to be influencing attitudes towards Agriculture. While this is a policy issue beyond teachers and administrative control of school, it is important that Agriculture teachers' involvement in the revision of the syllabus be considered since they are the implementers. The lack of involvement of teachers in curriculum in syllabus revision was seen as a challenge since it creates unnecessary resistance on the part of the implementers which may go a long way in influencing their attitudes and that of students negatively.

It was also established in this study that schools were offering theoretical Agriculture rather than practical agriculture that would impart vital skills to students to utilize after school. The school farm was equally serving no purpose in the schools since students reported that whatever they learn at home in their farm is more practical than what they learn in school. Again this was seen as a challenge that could be resulting in negative attitudes towards Agriculture by students.

Other challenges established in the study include lack of motivation by teachers, too much workload for teachers and lack of current research information on practices and technologies that would captivate students and create interest in learning. These

challenges are viewed according this study as influencing attitudes of students negatively towards Agriculture. There is need to review these findings by policy makers and curriculum developers with a view of bridging the gap that exists at the moment in order to change the attitudes of students positively towards Agriculture since it remains a vital sector to the economy of Kenya.

4.8 Chapter Summary

The main findings of the study are highlighted in this section. From the foregoing presented data, interpretation and discussions, teachers in the sample schools, had positive attitudes towards Agriculture. Teachers were among other things well qualified, had attained sufficient training and were experienced to teach satisfactorily in secondary schools. Except for the academic qualification of teachers, teaching experience, location of a school and the school land size do not influence attitudes of teachers toward Agriculture. Sex of teachers was found not to influence the teachers' attitudes.

Students' attitudes were found to be negative towards Agriculture. Age and sex of students do not influence students' attitude towards Agriculture. The physical location of a school has no significant relationship with students' attitudes towards Agriculture. Numerous challenges were found to affect the implementation of Agriculture curriculum. Notably is the lack of administrators support, lack of teaching/ learning resources and too much work load in Agriculture syllabus. Schools use the school farm as punishment for indiscipline students.

Students of secondary schools prefer white collar jobs to those obtained through Agriculture which are regarded as blue collar jobs. Students regard Agriculture as a booster in KCSE and not as a career subject. Many students do not prefer taking

Agriculture as a career because of the fear of lack of jobs in the Agriculture sector. The students come to secondary with eagerness to learn Agriculture but slowly change their attitudes because of what upper classes say on Agriculture and what they see in the school farms together with punishment from Agriculture farms.

The study results indicated that numerous challenges are encountered by teachers in the implementation of agriculture curriculum ranging from frequent change of syllabus, wide content, numerous topics and the use of school farms for punishing indiscipline students. The teachers expressed a serious concern over the challenges faced in the implementation of agriculture curriculum, which the study concluded that there could be a relationship between the challenges and the attitude of the students towards agriculture. Such challenges if addressed would positively orient the attitudes of both teachers and learners (students) into a positive direction.

It appears according to the findings of this study that the school environment whether urban or rural type of school, status of the school (national, provincial and district) does little to change the attitudes of students towards Agriculture. There is a tendency for schools to be examination oriented in the teaching of Agriculture with students just selecting Agriculture subject as a booster in KCSE grades because of the perception that the subject is easy to pass in KCSE exams.

It was also noted in the schools under study that little was done on the utilization of school land to put into production on a commercial basis for students to appreciate the role of Agriculture in economic development. In the few schools that practiced Agricultural activities in their farms, the livestock kept were in undesirable conditions while crops were no better than the farmers outside the school compound or even poorer than the farmers' livestock and crops yet the schools with at least one

agriculture professional should have been a model centre for farmers and students to learn. This according to the researcher could have been a major contributor to the poor attitude by the students. This is further confirmed by the responses that the Agriculture they learn in their farms is more practical than what they learn in school. This according to the researcher meant that most Agriculture lessons in secondary schools are more of theoretical than practical.

Also the society expects their children to be employed in white collar jobs, an attitude that has persisted for a long time since the pre-independent Kenya. The white collar jobs are believed to be achieved through learning sciences and other subjects, other than Agriculture. The students also believe that white collar jobs are the only suitable jobs and cannot be obtained through learning Agriculture yet Agriculture is both a white and a blue collar job as one can be employed directly or indirectly in Agriculture. Little effort is done to show the sense to students on the dynamics of Agriculture in creation of employment and wealth.

CHAPTER FIVE

CONCLUSIONS, RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

5. 1 Introduction

This study investigated the attitudes of teachers and students of secondary schools towards Agriculture in Baringo North District. This chapter uses the findings obtained from the analysis of data in chapter four to make conclusions and recommendations for possible action to be taken. The chapter is structured to cover the summary of findings, conclusions, recommendations and suggestions for further research.

5.2 Summary of the Findings

This study was seeking to establish the attitudes of teachers and students towards Agriculture in secondary schools of Baringo district. The independent variables of the study were sex, age, teachers' academic qualification, school land size, physical location of the school and the teaching experience of teachers. The dependent variable of the study was the attitudes towards Agriculture. From the foregoing presented data, interpretation and discussions, teachers in the sample schools, had positive attitudes towards Agriculture while students had negative attitudes.

Sex (being male or female) does not influence teachers' attitudes towards Agriculture. Students' age was found not to influence their attitudes towards Agriculture. Teachers' academic qualification influences attitudes towards Agriculture, with teachers of high academic qualifications tending to have positive attitudes towards Agriculture. The physical location of a school (rural or urban) and the school land size were found not to influence attitudes of both teachers and students toward

Agriculture. Similarly, the teaching experience of teachers showed no significant relationship with the attitudes towards Agriculture.

5.3 Conclusions

Conclusions made here are based on the findings of this study. The findings of this study revealed that secondary school teachers had positive attitudes towards Agriculture unlike students who showed negative attitudes. It is concluded on the basis of the findings that teachers have positively orientated their attitudes towards Agriculture unlike the colonial and early independence era.

Students' attitudes have remained negative despite the recommendations by various scholars like Ongeti (1986) who recommended that schools should strive to mould the attitudes of students positively especially towards prevocational subjects like Agriculture. Schools have done little to orient students' attitudes positively perhaps due to the continuous use of school farm to punish indiscipline students, the status of placing Agriculture as an elective subject making it less important and the high number of unemployed Agriculture professionals. Students' attitudes have remained negative towards Agriculture.

The relationship between teachers' sex and their attitudes towards Agriculture was not significant. On the basis of this therefore, it was concluded that teachers' sex (whether male or female) does not influence their attitudes towards Agriculture. While testing the hypothesis, a Chi-square (χ^2) result revealed that there is no significant relationship between sex of students and their attitude towards Agriculture. Similarly, students' age was found not to influence their attitudes towards Agriculture. It was therefore concluded that students' attitudes' are not influenced by their sex and age.

Teachers' academic qualification was found to influence their attitudes towards Agriculture with teachers of higher academic qualification favoring agriculture than teachers of lower academic qualification.

Location of a school (rural or urban) was found not to have a significant relationship with their attitudes towards agriculture. Therefore, it was concluded that the geographical location of a school (rural or urban) does not influence the attitudes of students towards Agriculture. Similarly, no significant relationship was found between the school land size and the teachers attitudes towards Agriculture. A conclusion was made to say that the school land size does not influence the attitudes of teachers towards Agriculture in secondary schools. In addition, teaching experience was found not to influence the attitudes of teachers towards Agriculture. Accordingly, it was concluded that the attitudes of teachers towards Agriculture are not determined by the length of teaching experience.

Besides the hypotheses testing results, the study also revealed vital information that supports the attitude position of both the teachers and students in secondary schools. The position that a teacher occupied in a school seemed to influence attitudes towards Agriculture. The teachers without responsibility tend to have positive attitudes towards agriculture than their colleagues with responsibility positions. Those in administrative positions (head teachers and their deputies) had negative attitudes towards Agriculture. On the basis of this, a conclusion was made that the main reason behind the lack of support by the head teachers on the implementation of Agriculture syllabus is attributed to the negative attitudes on the part of the administrators.

The students' desire for white collar jobs perceived to be obtained through other disciplines like science may have impacted negatively on the students' attitudes towards Agriculture. A conclusion is also made on the basis of the findings that students have not developed an appreciation for the importance of Agriculture as recommended by Maxwel (1970) while schools have not adequately prepared students for successful careers and a life of informed choices in global Agriculture leading to the current economic, food, poverty and unemployment crisis that is evidenced currently in Kenya. Agriculture is still perceived to be a less lucrative than other disciplines like Sciences.

The use of school farm to punish indiscipline students seems to make students develop negative attitudes towards Agriculture. Students' choice of agriculture was just for the purpose of improving their overall KCSE grade because of the belief that agriculture is easy to pass. This is in agreement with what Ongeti (1986) concluded that there is a tendency for teachers to teach for the purpose of examination. Also too wide content and topics as well as frequent changes in Agriculture syllabus seem to create boredom on students leading to negative attitudes towards Agriculture. There is need to address the challenges faced in the implementation of Agriculture including the need for school administrators to support Agriculture teachers through provision of adequate teaching and learning resources while motivating Agriculture teachers.

It is also clear from the study findings that administrators' (head teachers') support was lacking in schools towards implementation of Agriculture curriculum. Yet theorists like Oluoch (1982), Shiundu and Omulando (1992) and Gross et –al (1971) recommended that the befitting conditions for any curriculum implementation requires changing attitudes of people involved in implementing any programme,

provision of adequate materials, facilities and equipments, provision of sufficient and continuous reliable support to teachers. This has resulted in the present challenges in schools as highlighted by the respondents citing lack of head teachers' support. This is further evidenced by the negative attitudes by teachers in responsibility position resulting in a low opinion by the students as a result of negative attitudes by their school administrators which according to Koros (2008), poor attitudes towards Agriculture and lack of administrative support posses' great challenges in implementation of TVET subjects.

The attainment of vision 2030 pledges can only be visible if attitudes of those in schools who aspire to undertake careers can positively be oriented towards Agriculture which is seen to be the engine and driving force in economic development and sustainable food and employment creation as well as a tool for fighting poverty. There is need to address the various challenges including the need for provision of resources.

5.4 Recommendations

Although Agriculture is said to be the backbone of the economy of Kenya, the negative attitude of secondary school students as revealed by this study could impact negatively on the efforts geared towards achieving economic development through Agriculture especially that the secondary school leavers are expected to be the future leaders in Agriculture careers. On the basis of this study findings, there is need to orient the curriculum into a practical curriculum that would see more students developing positive attitudes towards Agriculture.

Agriculture subject should be made a core subject like the Sciences and Mathematics since this is the subject that plays a critical role in the economic development of the country. By making it a core subject students will realize the importance of the subject and is hoped to transform their attitudes into the positive side. Efforts should be made to enhance interest in the new students joining secondary schools from primary schools by encouraging and explaining to them the importance of Agriculture so that as they proceed, their attitudes change and where possible, demonstration fields by each school should be established for students to appreciate the importance of Agriculture.

School administrators on their part should also keep themselves a breast of these issues through attending seminars organized by various organizations and curriculum developers on Agriculture so as to instill positive attitudes to the administrators (Head teachers) who can be agents of change in their school community.

Parents should also be sensitized on the importance of orienting their children to positive attitudes towards Agriculture so that their home environment will lead them to developing positive attitude towards Agriculture in schools. In order to make the teaching and learning of Agriculture successful, resource availability such as books and equipments should be availed by the government so as to avoid over burdening parents to pay extra fees for agriculture which could go a long way in creating a positive attitude towards Agriculture.

School farms should not be used as punishment for wrong doers in a school as this is seen as a means of making students develop a negative attitude towards Agriculture. The curriculum developers should consider reducing the long topics of Agriculture and instead orient the curriculum into the vital topics of technology and practices that would result in self reliance for school leavers. Where possible, schools should initiate micro projects such as poultry, dairy and horticultural projects that can be used for learning practically Agriculture so as to instill a positive attitude to students especially for self reliance immediately after school.

In service courses for teachers could be organized for Agriculture teachers on new technologies on agriculture so as to update them on new information to pass it to the students. Exposure trips to be organized for students by various schools especially to successful farms to appreciate the role of Agriculture in wealth creation and economic development and employment such as Delamere farm. This could help develop positive attitudes towards Agriculture.

5.5 Suggestions for Further Research.

This study on the attitudes towards Agriculture by teachers and students in secondary school was limited to Baringo North District and there is need to replicate the study on other areas with different conditions. A large proportion of Baringo North land is ASAL and thus much of it is unsuitable for Agricultural production. There is need therefore for a similar study on potential Agricultural areas to establish whether the environmental conditions could influence attitudes towards Agriculture. There is need to carry out a study on the influence on parental socio-economic status on students' attitudes towards Agriculture.

This study notably established that some Agricultural practices were against the taboos of the community under study. Accordingly, there is need to establish the influence of culture on attitudes towards Agriculture. A study on the effects of home Environment on the attitudes towards Agriculture. A study on the relationship between school category and attitudes towards Agriculture. Effects of parental socio-economic status on the student attitude towards Agriculture should also be investigated.

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APPENDICES

APPENDIX I: QUESTIONNAIRE FOR TEACHERS

The purpose of this questionnaire is to establish the attitudes of teachers and students towards agriculture subject. The information will be useful improving the implementation of the subject. Kindly respond objectively and the information will be treated with the utmost confidentiality.

Section A: Background Information

1) Sex Male ☐ Female ☐
2) Teaching Experience
   - (i) 0-5 years ☐
   - (ii) 6-10 years ☐
   - (iii) 11-15 years ☐
   - (iv) 16-20 years ☐
   - (v) 21 years and above ☐
3) Academic Qualification
   - (i) Untrained in agriculture ☐
   - (ii) Certificate ☐
   - (iii) Diploma ☐
   - (iv) BSC agriculture ☐
   - (v) BSC AGED ☐
   - (vi) BSC + PGDE ☐
   - (vii) BED Science ☐
   - (viii) Med/ Msc ☐
   - (ix) Others specify ☐
4. Current position
   - i) Head teacher ☐
   - ii) Deputy head teacher ☐
   - iii) Head of Department ☐
   - iv) Senior teacher ☐
   - v) Class teacher ☐
   - vi) Assistant teacher ☐
   - vii) Others (specify) _____

5. Highest Professional Qualification e.g Graduate teacher 1, ATS III etc.

_____

6. Year you trained as a teacher

_____

7. Type of school

Mixed ☐ Girls ☐ Boys ☐

8. Location of your school

Rural ☐

Urban ☐

9. Size of school farm (acres)

_____

Section B: Attitudes towards Agriculture subject

10. Please indicate your opinion towards agriculture subject by placing a tick (√) against your level of agreement using the suggested scale for each item.

Strongly disagree (SD)
Disagree (D)
Undecided (U)
Agree (A)
Strongly agree (SA)

No	**Statement**	SD	D	U	A	SA
a	The subject matter taught is appropriate for learners at KCSE level					
b	If taught to all, it can lead to increased agricultural productivity without compromising the ability of the future generations to meet their needs.					
c	Agricultural teachers need training or in service courses to broaden their knowledge base.					
d	The content does not promote critical thinking					

	and problem solving skills in the learners.					
e	Agriculture subject should be made compulsory in all secondary schools in Kenya.					
f	Agriculture supplies food to schools and therefore must thus be enhanced.					
g	Any teacher can teach agriculture therefore does not need trained Teachers.					
h	Knowledge of agriculture is vital in the economic development of the country.					

11. Use the scale below to indicate your level of agreement with respect to the statements provided.

- If you agree strongly, with a statement, place a tick (√) against SA; if you only agree slightly place a tick against A for a statement you disagree completely tick against SD and for an item you disagree with only slightly tick against D. there may be items for which you are not sure. In that case tick against U.

a. Farming is always a profitable career

SA A U D SD

b. Our country does not have many industries that require many people with technical training

c. Too many projects are planned for students in Agriculture.

d. My students have the necessary tools and equipments for Agriculture

e. The syllabus of agriculture expects young students to do more than they would be expected to do at home e.g milking dairy animal

f. Instead of buying hoes & pangas we should buy more maths and science books.

g. Agriculture should be taught only in village polytechnics

h. The time assigned for Agriculture should be increased

i. Agriculture is an expensive subject to provide equipment for but are worthwhile.

j. Agriculture has crowded the timetable for nothing

k. Agriculture is best suited to rural schools which have shambas and cows

l. The Education that my students have received after form four is enough for self reliance.

m. Expansion of technical Education is more important than expansion of general Education.

n. Secondary school leavers are unable to secure employment mainly because they have no applicable skills.

o. Digging in school shamba is sometimes used as a punishment for wrong doers.

p. Teaching agriculture to youths who have no land and money is a waste of time.

q. With my teaching of Agriculture my pupils now desire manual work and rural occupations.

r. It is quite possible for a student to pass KSCE Agriculture without having been on a farm.

s. It is not necessary to send children school to learn to use their hands.

t. Working in the farm is exciting and enjoyable.

u. If marks awarded for practical projects are not included in the final grading of students at KCSE then Agriculture leases to be 'practical'.

Section C : Comments on the teaching and learning of agriculture subject

12. Kindly make comments on the teaching & learning of agriculture. Your views will help in the future developments of the subjects.

i. Choose any one of the statements below that you agree with most and either circle the letter A, B or C.

A. Employment is a great problem in our country today. It is caused by the thousands of school-leavers who have n relevant skills. Schools should therefore do more to equip youths with job skills. This should be done by making schools agents for training youths to work in factoring. School subject, should enable school leavers to step directly into job having been fully and Expertly prepared by the school.

B. Schools cannot be used to train factory workers, They should only be used to teach children to read, write, do a certain amount of arithmetic, understand enough science and history to interpret the world around them and to learn enough civics to be aware of their rights as citizens. Secondary schools are not equipped to train farmers. Skills needed for work in factoring will be acquired on the jobs.

C. I do not agree with any of the above statements. I have a different opinion which is as follows: (Give your opinion).

_____

_____

Section D: Challenges Faced By Agriculture Teachers in Implementing the Agriculture Curriculum

13. Below are statements about challenges faced by agriculture teachers when implementing agriculture curriculum in secondary schools. Use the key/scale given to tick (√) against your level of agreement to the statements.

Strongly disagree (SD)
Disagree (D)
Undecided (U)
Agree (A)
Strongly agree (SA)

NO.	STATEMENT	LEVEL OF AGREEMENT				
		SD	D	U	A	SA
a	Content contains complex technical issues					
b	Too wide content on topics in Agriculture					
c	Lack of support by principals					
d	Frequent changes in agriculture syllabus					
e	Too much workload for agriculture teachers					
f	Lack of in service courses for agriculture teachers					
g	Lack of current research information					
h	Poor attitudes towards the subject by students, teachers and principals					
i	Lack of teaching resources for agriculture					
j	Lack of motivation by agriculture teachers					

Thanks for responding

God bless you richly

APPENDIX II: QUESTIONNAIRE FOR STUDENTS

This questionnaire seeks to obtain views on attitudes of students towards agriculture subjects. The findings may be useful in improving the teaching of agriculture subject in secondary schools. Kindly respond to the questionnaire objectively and the information will be treated with the utmost confidentiality.

SECTION A: Background Information

1. Sex Male ☐ Female ☐
2. Class Form 1 ☐ Form 2 ☐ Form 3 ☐ Form 4 ☐
3. Age limit 10-15 ☐ 16-20 ☐ 21-25 ☐ above 25 ☐
4. Type of school Mixed ☐ Girls ☐ Boys ☐
5. Location of school Urban ☐ Rural ☐

SECTION B: Attitudes towards Agriculture Subject

6. Do you feel agriculture as a subject is important in schools?

   Yes ☐ No ☐

   Give a reason for either answer

7. Learning agriculture helps students to contribute to the economic development in the community.

   Yes ☐ No ☐

   Give a reason for your answer

8. Would you choose agriculture as your favorite subject even at higher level of your education?

   Yes ☐ No ☐

   If no, give reasons _____

9. Below are statements about agriculture as a subject in schools.

Use the key/scale given to tick (√) against your level of agreement to the statements.

1. Strongly disagree (SD)
2. Disagree (D)
3. Undecided (U)
4. Agree (A) and

5. Strongly agree (SA)

NO	**STATEMENT**	**LEVEL OF AGREEMENT**				
		SA	A	U	D	SD
i	Agriculture is an important subject in schools					
ii	Agriculture helps students to contribute to economic development in the community.					
iii	Agriculture should be taught in all education institution.					
iv	Agriculture should be taught to students regardless of whether they wish to join farming after leaving school					
v.	Learning agriculture help students develop positive attitudes towards farming.					
vi.	Learning agriculture promote students career opportunities					
vii.	Teaching agriculture enable students develop skills for self reliance					
viii.	Products from students' project and school farm lower food experiences in school.					
ix.	Teaching agriculture in secondary school has contributed positively to improved production in agriculture					
x.	Agriculture as a subject should not be examined at form four level.					
xi.	Agriculture should be compulsory for all students from F1 and 2					
xii.	Agriculture in secondary schools prepares students for further studies in agriculture.					

xiii.	Teaching agriculture in secondary schools ensures that schools take an active part in rural development.					
xiv.	farming is always a profitable occupation					
xv.	Marks for agriculture projects are very useful					
xvi.	Our country does not have many industries that need many PPI with Technical training					
xvii.	Too many projects are given to us in Agriculture					
xviii.	We have all the equipment (e.g jembes, places etc) we need for Agriculture					
xix.	People of my age according to my community are not required to do what I do at school e.g milking animals					
xx.	Instead of buying jembes, pangas & hammers, we should get more books for maths and science.					
xxi.	Agriculture should be taught only in village polytechnic					
xxii.	The time allocated for Agriculture should be increased					
xxiii	Agriculture should only be taught to rural schools which have land to grow crops and keep cows					
xxiv	Even if I do not do well in KSCE, I shall be self reliant using the skills learnt in Agriculture.					
xxv	The Agriculture I learn in our farm is more practical than what we learn in school.					
xxvi	Agriculture is more important than maths, English and Geography					

xxvii	Secondary school leavers fail to get jobs because they have no applicable practical skills					
xxviii	One of the punishments often give to students who make mistakes is digging in the shamba					
xxix	Learning agriculture makes me admire rural life					
xxx	It is quite possible for a student to pass agriculture without having gone to a farm					
xxxi	Working on the farm Exciting and Enjoyable					
xxxii	Marks awarded for practical projects should be included in the final grade of agriculture.					
xxxiii	Farming skills are not useful to me since I require white collar jobs.					

Section C: Comments on agriculture subject

10. Please give brief answers to the questions below

1. Give reasons why you like Agriculture

_____

2. Give reasons why you do not like Agriculture

_____

3. Below are three statements labeled A, B and C. choose any one of the statements by putting a circle round the letter of your choice

A) School leavers do not get jobs because they have no training for jobs, schools should therefore do more to give young people skills, they would get jobs easily

B) Schools should not be used to train factory workers. Factories should do that schools should only teach maths, science, languages and humanities.

C) I do not agree with any of the above because I think _____

_____

(Write what you think in the space below).

APPENDIX III : INTRODUCTORY LETTER TO SECONDARY SCHOOL PRINCIPALS.

Moi University,

Department of CIEM,

P.O Box 3900,

Eldoret.

Dear Sir/ Madam,

RE: A Study on the Attitudes of Secondary School Teachers and Students towards Agriculture Subject.

I am a graduate student at Moi University undertaking a research on the Investigation on the attitudes of Secondary school teachers and students towards agriculture subject in Baringo North district.

Your school has been selected to participate in this study and will involve the principal agriculture teachers and students of your school.

The information provided will be treated confidentially.

Kindly provide honest answers.

Thank you in advance.

Yours Faithfully,

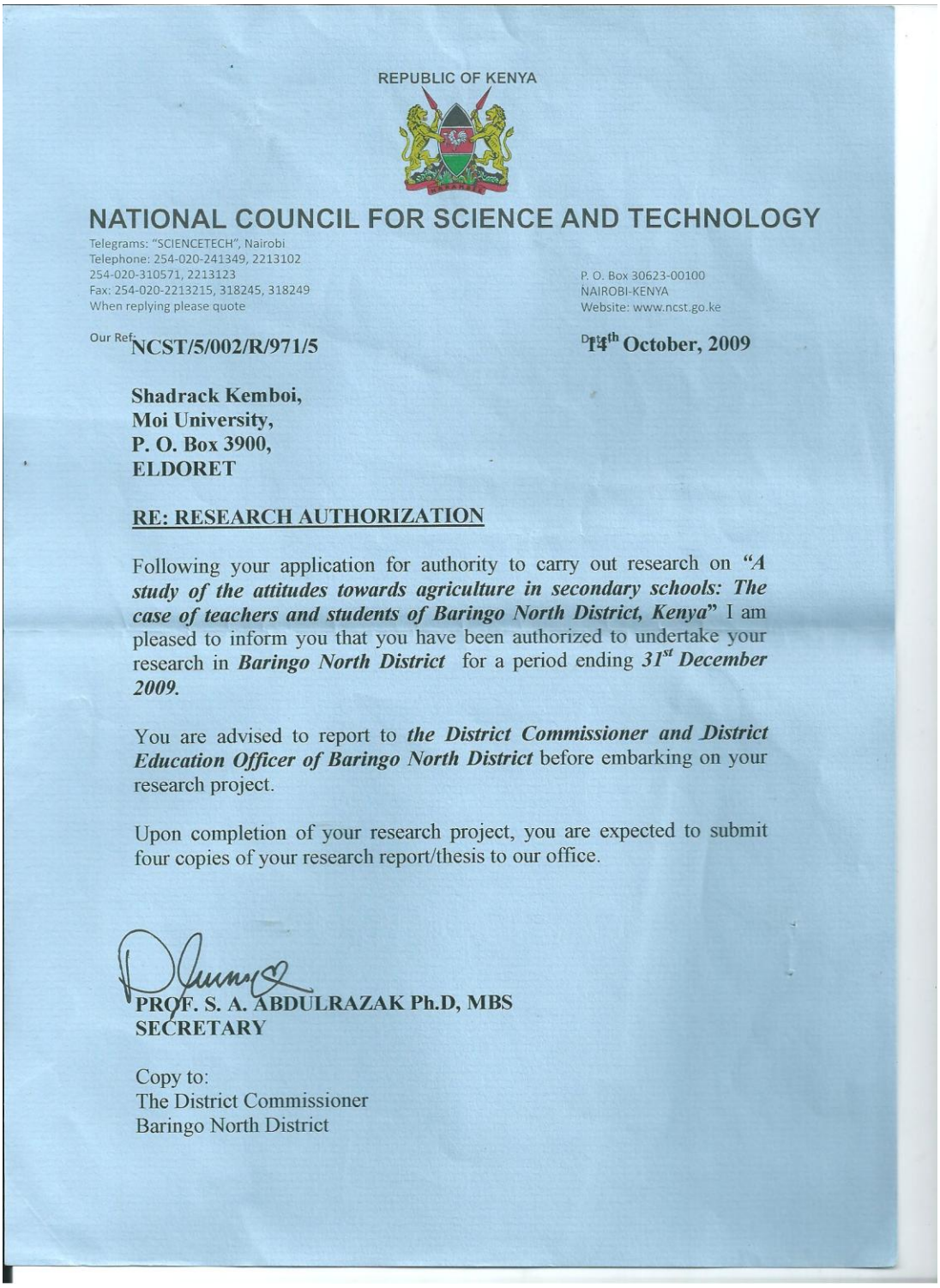
Shadrack Cheplogoi

EDU/PGCM/22/08

APPENDIX IV: SAMPLE FRAME

	TYPES OF SCHOOL		
S/no	**Mixed school**	**Girls school**	**Boys school**
1	Moi high Kabartonjo	Kasok	Aiyebo
2	Ossen	Tanyileel	Bartolimo
3	Kapchepkor	Kaptere	
4	Kasisit		
5	Tiriondonin		
6	Kapkiamo		
7	Rimo		
8	Keturwo		
9	Kapluk		
10	Barwessa		
11	Katibel		
12	Kipcherere		
13	Kaptum		
Sample size	**3**	**1**	**1**
Total	**5**		

APPENDIX V: RESEARCH AUTHORIZATION



REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telegrams: "SCIENCETECH", Nairobi
Telephone: 254-020-241349, 2213102
254-020-310571, 2213123
Fax: 254-020-2213215, 318245, 318249
When replying please quote

P. O. Box 30623-00100
NAIROBI-KENYA
Website: www.ncst.go.ke

Our Ref: **NCST/5/002/R/971/5**

Date: **14th October, 2009**

Shadrack Kemboi,
Moi University,
P. O. Box 3900,
ELDORET

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"A study of the attitudes towards agriculture in secondary schools: The case of teachers and students of Baringo North District, Kenya"*** I am pleased to inform you that you have been authorized to undertake your research in ***Baringo North District*** for a period ending ***31st December 2009.***

You are advised to report to ***the District Commissioner and District Education Officer of Baringo North District*** before embarking on your research project.

Upon completion of your research project, you are expected to submit four copies of your research report/thesis to our office.

PROF. S. A. ABDULRAZAK Ph.D, MBS
SECRETARY

Copy to:
The District Commissioner
Baringo North District

APPENDIX VI: RESEARCH PERMIT

PAGE 2

THIS IS TO CERTIFY THAT:

Prof./Dr./Mr./Mrs./Miss. SHADRACK KEMBOI C.

of (Address) MOI UNIVERSITY PO BOX 3900 ELDORET

has been permitted to conduct research in

.....**Location,**

BARINGO NORTH .....**District,**

RIFT VALLEY .....**Province,**

on the topic. A STUDY ON THE ATTITUDES TOWARDS AGRICULTURE IN SECONDARY SCHOOLS;THE CASE OF TEACHERS AND STUDENTS OF BARINGO NORTH

for a period ending 30TH DECEMBER **,20** 09

PAGE 3

Research Permit No. NCST/5/002/R/971

Date of issue 14.10.2009

Fee received SHS 1000

Applicant's Signature

Secretary National Council for Science and Technology